

All communications should be addressed to the Registrar by designation and not by name.

Phone : 04144-238259  
Fax : 04144-238080  
E-mail : au\_regr @ ymail.com



**ANNAMALAI UNIVERSITY**

வினாயகம் திருவள்ளூர் அண்ணாமலை பல்கலைக்கழகம்  
TAMIL NADU



**(Accredited with 'A+' Grade by NAAC)**

From The Registrar i/c, Annamalai University, Annamalainagar - 608 002.	To Deputy Director General (Education) Division of Agricultural Education, ICAR, Krishi Anusandhan Bhawan - II, New Delhi - 110 012
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Ref. No.AU/Agri./ICAR/2022

Date: 18-10-2022

Sir,

Sub : Faculty of Agriculture, Annamalai University- ICAR  
Accreditation - Revised SSR-Submission- Reg

Ref : Application ID CPRP3101-P000P-301823584-2022

\*\*\*\*\*

The Faculty of Agriculture, Annamalai University is submitting the SSR for Accreditation of its UG, PG, and Ph. D. Programmes (32 Nos.) after making necessary corrections as suggested. Further, it is informed that as per the approval of the previous ICAR-PRT (Visit made during the July, 2019)the student intake for B.Sc. Hons. Agriculture programme was reduced from 1200 to 600. All the suggestions made by the previous PRT have been carried out and Action taken report was already submitted to ICAR (Ref: AU/Agri./ICAR/2021 Dt. 18.06.2021).

Thanking you,

Yours faithfully,



*M. P. S. S. S.*  
18/10/22  
Registrar i/c

**REGISTRAR  
ANNAMALAI UNIVERSITY**

Y3

### Proforma for online payment of Accreditation Fees/GST

Name of the University	Applied for accreditation for University/Colleges/ Programmes (Application ID) *	Regular GST Number of the University**	Previous Demand Draft No with Date (if any)	Amount of fees	Amount of 18% GST	Mode of online Payment (RTGS /NEFT ) ***	Transaction details with date (Attach copy)
Annamalai University	College and Programmes  CPRP3101-P000P-301823584-2022	33AAALA0031F3Z3	-	3.0 Lakh	54,000	NEFT	ICICR52022080500868126  Dt. 5.8.2022

\* Universities have not applied though accreditation portal (accreditation.icar.gov.in) should mention the concerned file no. for application

\*\* Attached Regular GST Registration Certificate

\*\*\* Name - Secretary, ICAR

Account no: 61269985544

IFSC code: SBIN0031936

State Bank of India

Krishi Bhavan, Rajendra Prasad Road

New Delhi-110001



Signature of University Registrar With Seal





सत्यमेव जयते

Government of India

Form GST REG-06

[See Rule 10(1)]

Registration Certificate

Registration Number :33AALA0031F3Z3

1.	Legal Name	ANNAMALAI UNIVERSITY			
2.	Trade Name, if any	ANNAMALAI UNIVERSITY			
3.	Constitution of Business	Local Authority			
4.	Address of Principal Place of Business	ANNAMALAI UNIVERSITY, ANNAMALAI NAGAR, CHIDAMBARAM, Cuddalore, Tamil Nadu, 608002			
5.	Date of Liability	01/07/2017			
6.	Period of Validity	From	04/09/2017	To	NA
7.	Type of Registration	Regular			
8.	Particulars of Approving Authority	Centre Goods and Services Tax Act, 2017			
Signature					
Name		KARTHIKEYAN VISWANATHAN			
Designation		Superintendent			
Jurisdictional Office		TN328			
9. Date of issue of Certificate		04/09/2017			
Note: The registration certificate is required to be prominently displayed at all places of business in the State.					

This is a system generated digitally signed Registration Certificate issued based on the approval of the application by the jurisdictional tax authority



அண்ணாமலைப்  
**ANNAMALAI**



பல்கலைக்கழகம்  
**UNIVERSITY**

(State University-Accredited with 'A+' Grade by NAAC)  
ANNAMALAINAGAR - 608 002, CHIDAMBARAM, TAMIL NADU, INDIA.

**Prof. RM. KATHIRESAN, M.Sc.Ag., Ph.D., D.Sc**  
**VICE-CHANCELLOR**

12.08.2022

### PREFACE

Established in 1958, the Faculty of Agriculture, Annamalai University, is the second oldest in the state and the most sought-after destination for agricultural aspirants. Over the years, it has left a rich legacy of excellence in teaching, research and extension. A large proportion of our students are first generation learners in the arena of higher education hailing from backward rural districts. Our university strives tirelessly to upgrade skills and knowledge, impart values and guide our students to meet their responsibilities with all sincerity.

The unique feature of curriculum is that it is based on the Outcome Based Education (OBE) model which fully complies with ICAR BSMA recommendations. Ever since its establishment, the Faculty of Agriculture has played a pioneering role in creating excellent human resources through teaching, research and spreading the vast knowledge through its effective outreach programme. The Faculty of Agriculture has steadily grown in terms of number of programs, faculty and student strength, co-curricular and extra-curricular activities. Presently, Faculty of Agriculture is offering UG, PG and Ph.D programme in Agriculture and Horticulture.

The faculty plays a leading role as a dynamic, progressive and competitive institution to lead Indian Agriculture to greater heights. It is involved in dedicated research in all frontier areas of agriculture. Research studies are carried out to develop new varieties, crop production, crop protection practices and allied socio-economic aspects concerned with field and horticultural crops. The faculty of agriculture is actively participating in the Research funded by World Bank, ICAR, DST, DBT, NMPB, MNEF, UGC, ICSSR, and private funding agencies. The Faculty has research collaboration with Cornell University, International Rice Research Institute (IRRI), Philippines, BIRAC, DBT, ICAR, Bill & Melinda Gates Foundation, US-Aid, International Institute of Biotechnology and Toxicology, Chennai, IKP Knowledge Park (IKP), and Commercial Agriculture Alliance (CAA), Nepal. These collaborations helped the innovations of the faculty outreach across the borders and languages.

It is a matter of great satisfaction that UGCs National Assessment and Accreditation Council (NAAC) has accredited our University and its ten faculties including, Faculty of Agriculture with **A+** Grade with a score of 3.38 out of 4 for five years from 2022. All the programs offered in faculty of Agriculture have already been accredited from 2019.

I have the privilege to present this Self-Study Report of Faculty of Agriculture for accreditation to the NAEAB of ICAR.

I express my sincere thanks to the Dean, Heads, faculty members and the team IQAC for their tireless efforts.

(RM. Kathiresan)

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**ANNAMALAI UNIVERSITY**



**Dr. A. ANGAYARKANNI, M.Sc.(Ag.), Ph.D.**

Dean,

Faculty of Agriculture

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**FOREWORD**

The Faculty of Agriculture, Annamalai University provides quality education that imparts knowledge, skills and values that make them responsible citizens. The Faculty has a vision and mission to impart holistic education. The faculty renders mentoring, counseling, remedial coaching and encourages them for competitive exams etc. Being a component of a residential university, the faculty has been adopting stringent quality control in education, research and extension and has introduced innovative courses and inter-disciplinary value added courses. The Faculty of Agriculture has grown several folds with the visionary contribution of my predecessors. I am privileged to prepare this Self Study Report (SSR) for getting accreditation from National Agricultural Education Accreditation Board (NAEAB) of Indian Council of Agricultural Research (ICAR), New Delhi.

This Self Study Report (SSR) has provided an opportunity to realize the strengths, weaknesses and potentials of our institution. It is an opportunity for the faculty to introspect on the quality aspects and the challenges ahead. It is our great privilege to express our deepest gratitude to our most respected Vice-Chancellor for his constant support and motivation to prepare a good quality SSR. I sincerely thank the Registrar, for his guidance and support.

I express my sincere thanks to the Heads, faculty members and the team IQAC who spent countless hours in collecting and analyzing the data and took great pains for compiling, refining, and editing the report.

Place: Annamalai Nagar

Date: 11.08.2021

(A. Angayarkanni)



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
The Faculty

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**  
(Accredited with A<sup>+</sup> Grade by NAAC)



# **FACULTY OF AGRICULTURE**

## **SELF STUDY REPORT OF THE FACULTY**

**ANNAMALAINAGAR - 608 002**

**TAMIL NADU**

**INDIA**

**2022**

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## 6.5. Self Study Report for the College / Faculty

### Annamalai University - Profile

Annamalai University, one of the largest residential multidisciplinary universities in South Asia, is located in a rural setup at Chidambaram in the coastal district of Cuddalore, Tamil Nadu. In the early 1920s, noble-hearted philanthropist and patron of letters Rajah Sir S.R.M. Annamalai Chettiar founded Sri Minakshi College, Sri Minakshi Tamil College and Sri Minakshi Sanskrit College at Chidambaram. In 1928, Rajah Sir S.R.M. Annamalai Chettiar agreed with the local government to handover the above said institutions to create a university. Thus, on **01.01.1929 Annamalai University was established** as a **State University** as per Annamalai University Act, 1928 (Tamil Nadu Act 1 of 1929), which was repealed and replaced by the enactment of the Annamalai University Act, 2013 (Tamil Nadu Act 20 of 2013) amended by enactment of Act No. 32 of 2021 to render the university as an affiliating type. The University is included in the list of universities under section 2 (f) and 12 (b) of the UGC Act 1956.

Right from its inception the University gradually added need-based and innovative programmes with new faculties. Annamalai University has played a pivotal role in providing access to higher education to thousands of youths cutting across the social spectrum, especially from economically and socially disadvantaged classes. Currently, the University is offering educational programmes through **55 departments/division of study under 10 faculties**. Annamalai University is accredited with **A<sup>+</sup> Grade by NAAC in 2022**.

### Faculty of Agriculture - Profile

The **Department of Agriculture, established in 1951**, under the Faculty of Science of Annamalai University, was upgraded as a separate Faculty of Agriculture in the year 1958. The Faculty of Agriculture, under the Deanship of Dr. G. Rangaswami, an eminent International Microbiologist, introduced the four year degree “B.Sc. (Ag.)” programme in the academic year 1958-59. The Faculty of Agriculture is **the second Agricultural College in the state of Tamil Nadu**, next to the Agricultural College at Coimbatore (now TNAU). Faculty of Agriculture is a **pioneer in introducing post graduate programme in Agricultural Microbiology in India and post graduate programme in Horticulture in the South India**.

The **first batch of B.Sc. (Ag.) students was graduated in 1962**. The Faculty of Agriculture was relocated to the present premises in 1965.

### 6.5.1. COLLEGE ADMINISTRATION

#### 6.5.1.1 College / Faculty Dean's Office Establishment

*Whether Dean's post has been sanctioned by the appropriate authority as per ICAR Model Act/UGC guidelines? Date of selection of present Dean, mode of selection, tenure etc. shall be mentioned. Clearly mention the staff and infrastructure/facilities available in the Dean's Secretariat.*

The Deans post has been sanctioned by the appropriate authority as per UGC guidelines. The Dean shall be appointed by the Vice-Chancellor as per the exercise of the powers conferred under sub section (1) of Section 12 of the Annamalai University Act 2013 (Tamil Nadu Act 20 of 2013) from among the professors in the Faculty for a period of three years. The Dean office was established in the year 1959.

Name of the Present Dean	Date of Appointment	Tenure
Dr. A.Angayarkanni	01.08.2022	Three Years

The Office of the Dean is supported by a secretariat. The details of supporting staff and infrastructure are furnished below.

### Dean's Secretariat (Man Power)

#### A. Establishment

Sl. No.	Staff details	ICAR requirement	Available
1.	Section Officer (PS to Dean)	1	1
2.	Assistant Section Officer (Administration, Accounts, Academic Agri. & Hort.)	3	5
3.	Data Superintendent (Computer operator)	1	1
4.	Assistant Programmer	-	1
5.	Office Assistant	3	1
6.	Semi Skilled Assistant		2
7.	Driver	1	2
8.	Horticulturist (Farm Manager)	1	1
9.	Helper (Store keeper)	1	2
10.	Deputy Garden Superintendent	-	6
11.	Mastery	-	36
12.	Gardener	-	10
13.	Public Health Menials	-	3
14.	Nominal Muster Roll Employees	-	11
15.	Cleaner (Bus)	-	2
16.	Public Health Menials	-	3
<b>Total</b>		<b>11</b>	<b>87</b>

#### B. Central Instrumentation laboratory

Sl. No.	Staff details	ICAR requirement	Available
1.	Professor	-	2
2.	Technical Officer: Instrumentation (Asst. Engineer)	1	1
3.	Asst. Technical Officer (Instrumentation Assitant)	1	1
<b>Total</b>		<b>2</b>	<b>4</b>

#### C. Library & Computer Staff

Sl. No.	Staff details	ICAR requirement	Available
1.	Assistant Professor / Assistant Librarian	1	1
2.	Liaison Officer (Clerk)	1	1
3.	Technical Assistant for Shelves	1	2
4.	Assistant Professor / Programmer	-	1
5.	Lab Attender	-	1
<b>Total</b>		<b>3</b>	<b>6</b>

#### D. Student Welfare

Sl. No.	Staff details	ICAR requirement	Available
1.	Assistant Professor (Physical Education)	1	2
2.	Marker (Attendant)	1	2
<b>Total</b>		<b>2</b>	<b>4</b>

### E. Hostel Staff

Sl. No.	Staff details	ICAR requirement	Available
1.	Wardens & Deputy Wardens	2	15
2.	Caretaker/ Assistance	2	89
	<b>Total</b>	<b>4</b>	<b>104</b>

### F. Estate Branch

Sl. No.	Staff details	ICAR requirement	Available
1.	Executive Engineer & Asst. Engineer	1	2
2.	Assistant Security Officer	1	1
3.	Watchman	-	9
	<b>Total</b>	<b>2</b>	<b>12</b>

### Central Facilities

Sl. No.	Item	ICAR requirement		Available	
		Nos.	Dimension (feet)	Nos.	Dimension (feet)
1.	Dean's Chamber (A/C)	1	20'x24'	1	23'x16'
2.	PA Room	1	10'x12'	1	8'x16'
3.	Committee Room/Meeting Hall (A/C)	1	20'x30'	1	16'x30'
4.	Administrative Office	3	20'x12' each	1	30'x15'
5.	Examination Cell (Sigappi Aachi Building)	1	20'x12'	1	25'x30'
6.	Evaluation Room (Sigappi Aachi Building)	1	20'x36'	1	150'x100'
7.	Faculty Room (Ladies)	1	10'x12'	Available in the Department	
8.	Faculty Room (Gents)	1	20'x12'		
9.	Placement Cell	1	20'x12'	1	25'x20'
10.	Smart Hall	5	40'x30' (60 Pax)	5	25'x23' 40'x30' 33'x21' 30'x22' 30'x24'
11.	Auditorium (200 Seating Capacity) A/C	1	100'x50'	1	68'x30'
12.	Library	1	30'x72'	1 Faculty Library	30'x60'
				1 Central Library	36000 sq.ft
				5 Dept. Library	30'x10' 30'x22' 30'x22' 20'x15' 30'x21'
13.	Common Room	1	20'x36'	3	25'x15' 41'x31' 41'x31'
14.	Central Laboratory /Computer Lab	1	50'x36'	1	39'x29'
15.	Hostel - boys	1	150 Pax	3	510 rooms
16.	Hostel - girls	1	150 Pax	3	938 rooms

17.	Canteen	1	Kitchen -20'x12' Seating -20'x36'	Agri Canteen	Kitchen-10'x14' Seating- 39'x20'
				University Canteen	Kitchen- 60'x50' Seating- 100'x60'
18.	Wash Room	10	(Toilet & Urinary20'x12' )	21	20'x10' 16'x10' 10'x4 ' 6'x10' 9'x29-7nos 25'x15' 20'x30-4nos 10'x6-5nos
19.	Parking space	As per requirement		7- two wheeler shed  2 -Four wheeler area	90'x11' 9'x74' 62'x10' 41'x10' 40'x11' 40'x11' 39'x10' 100'x50 200'x100
20.	Farm Stores and sheds	One core complex		Farm -3 Orchard -2	Stores- 61'x31' 30'x31' Shed- 40'x20' 40'x20' 20'x12'
21.	Vehicles - Car	1	-	-	-
22.	Vehicles - Staff	2	-	Nil	-
23.	Bus	1	-	2	-
24.	Pickup van	1	-	Nil	-
25.	Motor Bikes	2	-	Nil	-
26.	Mini-Bus	1	-	2	-
27.	Tractors	2	-	3	-
28.	Drinking water & irrigation facilities	As per requirement		Mineral water units - 10 Irrigation -Deep bores- 5	
29.	Vehicle shed	1	10' x80'	7	90'x11' 9'x74' 62'x10' 41'x10' 40'x11' 40'x11' 39'x10'
30.	7.5 KVA Electric Generator	-	-	1	-
31.	250 KVA Electric Generator	-	-	1	-
32.	UPS (5 KV)	-	-	1	-
33.	Mineral Water Plant	-	-	15	-

34.	Digital Recorder	-	-	1	-
35.	Photo copier	-	-	1	-
36.	Riso Printer & Duplicator	-	-	1	-
37.	Fax Machine	-	-	1	-
38.	Computers	-	-	5	-
39.	Laser Printers	-	-	4	-
40.	Laptop	-	-	2	-
41.	Photo Scanner	-	-	1	-
42.	LCD projector	-	-	2	-
43.	DVR (CC Camera)	-	-	5	-
44.	CCTV Camera	-	-	32	-
45.	LAN points	-	-	50	-
46.	Agriculture Museum (A/C)			1	60' x35'
47.	Power tiller	-	-	4	-

### Facilities in High Tech Hall (A/C)

Sl. No.	Item	Nos.
1.	Photo copier	1
2.	LCD Projector	1
3.	Smart TV	1
4.	Interactive Ceramic Board	1
5.	Electronic Podium	1
6.	Laptop	1
7.	Opaque Projector	1
8.	Public address system	1
9.	Capacity	75

### Facilities in Computer lab (A/C)

Sl. No.	Item	Nos.
1	Computers	84
2	CD Writers	2
3	Hub	2
4	Modem	1
5	UPS (10 KV & 5 KV)	2
6	LAN points	25

### Smart Theory Halls with LCD

Sl. No.	Item	Nos.
1	Theory Halls - Faculty	10
2	Theory Halls - Tech park	16

### Details of Smart Theory Halls (Each with 75 seats)

Sl. No.	Place	Name of the Hall	Dimension
1	Faculty of Agriculture	New Lecture Hall -1	35'x24'
2	Faculty of Agriculture	New Lecture Hall -2	35'x24'
3	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 3	39'x29'
4	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 4	29'x40'
5	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 5	29'x30'
6	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 6	39'x29'

7	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 7	29'x40'
8	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 8	39'x29'
9	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 9	29'x29'
10	Faculty of Agriculture	M.A.M. Ramasamy Block-Hall 10	42'x29'
11	Tech Park Building	Hall 1	39'x29'
12	Tech Park Building	Hall 2	39'x29'
13	Tech Park Building	Hall 3	39'x29'
14	Tech Park Building	Hall 4	39'x29'
15	Tech Park Building	Hall 5	39'x29'
16	Tech Park Building	Hall 6	39'x29'
17	Tech Park Building	Hall 7	39'x29'
18	Tech Park Building	Hall 8	39'x29'
19	Tech Park Building	Hall 9	29'x28'
20	Tech Park Building	Hall 10	29'x28'
21	Tech Park Building	Hall 11	29'x28'
22	Tech Park Building	Hall 12	29'x28'
23	Tech Park Building	Hall 13	29'x28'
24	Tech Park Building	Hall 14	29'x28'
25	Tech Park Building	Hall 15	29'x28'
26	Tech Park Building	Hall 16	29'x28'

### Divisions/Departments/Sections - Requirements

S.No.	Details	ICAR Requirement		No. of Rooms	Available	
		No. of Rooms	Dimensions (in ft.)		Dimensions (in ft.)	
1	Office of Head	12	24 X 12 with wash room facility	Agronomy	1	21'x30'
				Agricultural Economics	1	29'x9'
				Agricultural Extension	2	9'x12' 19'x12'
				Agricultural Microbiology	1	18'x12'
				Entomology	2	21'x10' 21'x 10'
				Genetics & Plant Breeding	2	15'x 10' 16'x 10'
				Horticulture	1	20'x 16'
				Plant Pathology	1	14'x9'
				Soil Science and Agricultural Chemistry	1	20'x12'
				Animal Husbandary (Division)	2	12'x 16' 30'x 8'
2	Faculty Rooms 1 + 1	12	12 x 10 + 18 x 12 44 x 10 depending on the strength of each department	Agronomy	13	41'x 25' 15'x 8' 21' x 10' - 6nos 21'x 8' 21'x 20' 21'x 15' 21'x 17' 41'x 25'
				Agricultural Economics	2	29'x 19' -2nos

				Agricultural Extension	4	10'x10'-3nos 20'x30'
				Agricultural Microbiology	6	18'x20'-2nos 10'x20'-2nos 30'x19' 30' x 8'
				Entomology	7	18'x9' 15'x9' 10' x 8' 20'x10'-2nos 12'x10'-2nos
				Genetics & Plant Breeding	6	18'x10'-4nos 32'x20' 30'x21'
				Horticulture	8	20'x16' 20'x20' 32'x20' 10' x 10'-2nos 12'x10' 32 'x10'-2nos
				Plant Pathology	3	19'x9'-2nos 35'x22'
				Soil Science and Agricultural Chemistry	7	10'x 12' 18'x 10' 18'x10' 18'x10' 19 'x10' 19'x21'
				Animal Husbandary (Division)	4	9'X 10' 13'x 10' 12' x 8' 16'x12'
3	Clerical / Technical Staff	12	12 x 10 to 24 x 10 depending on the strength of each department	Agronomy	1	21'x15'
				Agricultural Economics	-	Nil
				Agricultural Extension	1	19'x12'
				Agricultural Microbiology	1	18'x 8'
				Entomology	1	19'x 8'
				Genetics & Plant Breeding	-	-
				Horticulture	1	20'x12'
				Plant Pathology	1	20 'x9'
				Soil Science and Agricultural Chemistry	1	10'x12'
				Animal Husbandary (Division)	2	13' x 8' 18' x 8'

#### 6.5.1.2. Monitoring Mechanism for Quality Education (online)

Whether the Faculty is having an internal quality assurance system, with appropriate structure and processes and with enough and monitoring quality assurance and quality enhancement activities of the

Faculty. How effectively monitoring of teaching, research and extension across the departments is being conducted, and mention the impact of monitoring on the outcome of the Faculty with reference to students' excelling in academics, research and extracurricular activities.

Yes. The Internal Quality Assurance Cell (IQAC) continuously reviews the teaching and learning process.

The **structure of IQAC** is furnished below.

<b>Chairperson</b>	Prof. Dr. RM. Kathiresan, Vice-Chancellor, Annamalai University
<b>Senior Administrative Officer</b>	Registrar, Controller of Examinations, Deans (10 members), Directors (7 members)
<b>Senior Teachers (Members)</b>	8 Members
<b>External Experts Members</b>	Dr. Uma Shankar Singh, South Asia Advisor for Research and partnership IRRI, Phillippines
<b>Local Society</b>	Thiru. A.Sambandam, Advocate
<b>Students</b>	14 Members
<b>Alumnus</b>	Dr.R.S. Sureshkumar National Manager, Rasi Seeds
<b>Stakeholder</b>	Mr.A.S. Ramkumar, Chennai
<b>Employer</b>	1. Dr.A.S. Nanna Batcha, Sr. General Manager, Rasi Seeds 2. Dr.K.Pari, Chairman, KEH Group of companies
<b>Industrialist</b>	Mr. D. Govindarajan, CEO, Royal Enfield & Executive Director, Eicher Motors, Chennai
<b>Director, IQAC</b>	Dr.S.Arivudainambi, Professor & Head of Entomology, Faculty of Agriculture, Annamalai University
<b>Deputy Director</b>	5 Deputy directors
<b>Nodal Officer - Faculty of Agriculture</b>	1. Dr.K.Saravanan, Professor, Genetics and Plant Breeding 2. Dr. D. Dhanasekaran, Assistant Professor, Horticulture

The academic audit of each department is done by the Head of the Department and senior teachers. Before the commencement of the semester, academic activities are planned at the staff meeting conducted by the Head of the Department and progress is continuously monitored. The lecture plans prepared by the teachers are evaluated by peers and endorsed by the HoD. Academic reports are prepared annually and placed in the Academic Council. Department-wise and Faculty-wise review meetings are held periodically to formulate policies to assess and strengthen the academic functioning of the departments of study.

A self-appraisal form is given to each staff member to assess their strength and weaknesses by going through the 360 degree areas of teaching, research, and extension. This helps in self-assessment and guidance for further improvement. Based on the recommendations of academic audit, specific measures have been taken by the university to improve teaching, learning, and evaluation such as avocation of weekly log book for teachers, constitution of examination reform committee, and introduction of OMR sheet for expediting declaration of results.

The IQAC has contributed to institutionalising several good practices which have promoted quality assurance:

- (i) Preparation of lesson plans peer-reviewed by colleagues and a weekly log to record how the lessons were transacted in the classroom;
- (ii) Programmes for keeping them up-to-date in latest pedagogical skills as well as in their own disciplines

- (iii) Obtaining feedback from the students which is used by the teachers to improve their classroom teaching and management
- (iv) Conducting regular tutorial/special classes
- (v) Special classes for slow learners
- (vi) Examination reforms; and
- (vii) Student progression cell.

The IQAC regularly audits the activities of the doctoral committees for ensuring the quality of doctoral dissertations through regular review of student progress in research, presentation in public forum of the research work in progress, pre-submission presentation prior to submission of thesis, with the suggestions being incorporated in the thesis in consultation with the doctoral committee.

Based on the review of IQAC, the following recommendations have been placed before the statutory authorities of the University for Implementation and actions were taken:

- ❖ Doctoral committees with experts from both within the institution and from other institutions.
- ❖ Making pre-submission presentation of Ph.D. thesis mandatory in all departments.
- ❖ A committee for scrutinizing manuscripts of books authored by staff prior to publication.
- ❖ Teaching/research collaboration with overseas institutions and organizations.
- ❖ Programmes which do not have the components of Industrial visits, internships & in-plant training need to be identified
- ❖ Provisions must be enhanced for Soft Skills, Employability courses, Summer Projects, Internship, Study Tour and Practical Learning in all programmes, wherever feasible 3
- ❖ Space for extracurricular activities should be augmented, and hostel amenities and ambience should be improved to the satisfactory level
- ❖ Specific suggestions on inclusion of course contents opined by the alumni are to be transferred to the Departments of studies concerned to assess their validity and feasibility to be considered in due course of syllabus revision
- ❖ Laboratory timings need to be rescheduled to facilitate lab research after hours.
- ❖ Morning class timings may be rescheduled to make it convenient for Faculty of Agriculture
- ❖ Extending the support of Incubation cell to all students.
- ❖ Providing comprehensive training programmes in placement cell.

## **Structure and Processes used to Monitor Teaching, Research and Extension across the Departments**

### **Teaching**

To ensure the quality in teaching, academic staff members are sensitized by the Dean at the beginning of each semester. Periodical visit to laboratories and classrooms by the Head of the Departments and the Dean forms part of the monitoring system. The syllabus of every course is synchronized with programme outcomes and ensured through CO-PO Mapping. Further to ascertain attainment of graduate attributes of every student an outcome attainment protocol is devised and implemented. Academic counseling system (Mentor-Mentee System) is in vogue and

each academic staff, as academic counselor, is assigned with 25 students to monitor the academic performance and for personal counseling. Scheduled timing is provided in time table itself for sectional and year co-ordinators who are nominated by the Dean for each batch and year, respectively, for academic guidance. For overall co-ordination of education activities of UG programme, a separate UG coordinator is nominated. In both PG and Ph.D. programmes, the comprehensive knowledge gained by the student is test verified by conducting a qualifying written and viva-voce examination. Feedback is obtained from students at the end of semester for further improvement.

## Research

The research activities of academic staff are being monitored regularly by the Head of the Departments and periodically by the Dean. Thesis research work by postgraduate scholars is guided and monitored by the allotted research supervisors and research advisory committee (RAC). In order to improve the quality of doctoral research, two publications in indexed journals is made mandatory for submission of thesis. Publications of research findings in reputed Scopus Indexed Journal and Web of Science are encouraged. The Directorate of Academic Research (DARE) is an exclusive directorate to ensure maintainence of quality in academic research programmes.

Annamalai University gifted with 'multi-disciplinary facilities and faculties' for incubating and nurturing inventive ideas, is a natural eco-system for innovation. The availability of sophisticated equipment and various dedicated cum designated centres further research along the path of quality:

### Centres:

- Centre for natural farming and climate change
- Centre for environment, health and safety
- Centre for Atmospheric Research and climate Changes
- Central instrumentation laboratory facility
- Centre for Renewable Energy

### Facilities:

- Image Xpress picoll automatic cell (Molecular device)
- Automated patch clamp
- MALDI-TOF Mass Spectrometer
- Isokinetic machine
- Thermoluminensence dosimeter
- Spectramax 13X
- XRD spectroscopy
- NMR

## Extension

Rural Awareness Work Experience (RAWE) programme and Agro-Industrial Tie-up programme during the final year of study for B.Sc. (Hons.) Agriculture/B.Sc. (Ag.) students are being organized by Department of Agricultural Extension and Agricultural Economics. Further, the Department of Agricultural Economics places the students for Agro-Industrial Tie-up programme at different agro-industrial areas of Tamil nadu. The students visit various NGO/Agri-Clinic/Input Industry/Agricultural finance institutions. Continuous monitoring of students is done during RAWE and Agro-Industrial Tie-ups. Under team teaching mode students staying in rural areas are

given all round knowledge to understand rural infrastructure, technological gap, training needs, and researchable issues and to demonstrate skills. The staff members of the Agricultural Extension have well established contacts with farming community in and around the surrounding of Cuddalore district through RAWE programme. They also have well established link with the various stakeholders like State Department of Agriculture, Panchayatraj Institutions, KVK, Regional Research Stations and NGO's. During RAWE programme, the staff members facilitated the students to organize and conduct various commendable extension activities like meeting, demonstrations, campaigns and exhibitions in the villages.

The Faculty of Agriculture, in collaboration with state department of Agriculture and Horticulture, enables transfer of technology from lab to land. The faculty members serve as resource persons in the field-level campaigns/demonstrations carried out in and around Cuddalore, Villupuram and Nagapattinam districts. The faculty members also deliver talks and participate in discussions/question and answer sessions through All India Radio and TV channels including Doordharshan. To reach the unreached, tested agricultural technologies are prepared as interactive learning CDs and circulated to the needy farmers.

Annamalai University is set in a rural environ very close to the eastern coast, amidst three most disadvantaged districts of Tamil Nadu where the majority of the population is socio-economically marginalized. Since it is not an industrial region, the lives of the people in the region is highly precarious and uncertain where the struggle is often to make both ends meet. Less productive coastal lands, vagaries of monsoon, sea water intrusion, proneness to and frequent occurrence of natural disasters (like floods, cyclones, etc.) and low literacy rate render the lives of these people highly precarious. Though the University has played a significant role in improving the overall socio-economic condition of the region through its educational service, it wanted to address this singular issue that poses challenge to the farming community.

The Faculty of Agriculture plays a leading role in extension of tested technologies. The **submergence-tolerant quality of SIGAPPI** rice variety has become popular both at national and international levels. Farmers of Kerala, especially in the flood-prone districts, prefer this rice variety and it is grown in 1000+ha there. Nearly 2500 farming households in 36 villages have been benefitted by **Integrated Rice + Fish + Poultry Farming** method. The positive impact created by the method in local villages made it become national as it derived nationwide attention through "**Hunnarbaaz episodes**" telecasted by Doordarshan. Ultimately it gained international status and it has been adopted by the **Government of Nepal** and replicated successfully.

**The Centre for Natural Farming and Sustainable Agriculture (CNFSA)** has organized the Gram Pradhans online Awareness Training Programme on "Natural Farming" for 4 Districts in Tamil Nadu viz., Cuddalore, Tiruvarur, Mayiladuthurai and Tanjore in Collaboration with MANAGE, Hyderabad and Ministry of Agriculture and Farmers Welfare, GOI. In an effort to reach the unreached, the Faculty of Agriculture in partnership with the state department of Agriculture organizes, farmers-scientist meet, conduct workshops, conduct capacity building programmes for farm women and self-help groups. Transfer of latest technologies in agriculture, horticulture, dairy, and allied fields. Hands-on trainings on mushroom production, kitchen gardening, vermicompost

production, roof gardening, Medicinal plant cultivation and protected cultivation to the unemployed youth, farmers and Self-Help Groups are conducted throughout the year.

Due to Covid 19 lockdown the staff members of the department rendered online farm advisory services to the farmers in and around Cuddalore district, by sharing information to their whatsapp. Whatsapp group was also started in the name of AU Extension Farmers Group. A total number of 208 farmers joined this link. Extension scientists, TNAU KVK Scientists and State Agriculture Department Officials have also joined as members of this group and shared useful farm information through text, voice messages and videos.

A You Tube channel **AU Agri Extension 360'** has been initiated. So far 19 videos have been uploaded on various agricultural technologies.

<https://youtube.com/channel/UCPINAWNVVEAT25B-mArNXVw>

Link: <https://youtu.be/Z2uK-o0dQKs>

Link: <https://chat.whatsapp.com/FBIv9Mvo0y6G6HFPSkObmr>

### **Impact of Monitoring on Students' Excellence in Academics, Research and Extracurricular Activities**

Quality assurance in teaching and learning process had significant impact on student's performance. On an average, 80-85% of UG students and 100% of PG students successfully complete the programme and earn their degree. In recent years, the percentage of students securing admission into higher education in other state agricultural universities on competitive basis is on the increase. Similarly, the success rate in ICAR JRF/SRF, ARS-NET examinations and also in other competitive examinations has increased many-fold. The data on student placement in various public and private organizations clearly brings out the quality of the graduates of our institute. The feedback from industries and other stakeholders about their performance is also positive.

Training of postgraduate students in soft skills enabled them to publish research articles in reputed journals with high impact factor/NAAS rated journals, and also to participate in national/international conferences. The number of students getting inspire fellowship is also in increasing trend.

The development of the overall personality of the students enabled them to win laurels and medals in the National/Inter/Intra-university competitions in academics, sports and cultural events. Many of our students represented our university in All India Inter- University Basketball, Volleyball, and Throw ball tournaments. Our faculty students also took part in All-India Inter-Agricultural sports meet organized by ICAR. Six of our NCC cadets were selected for republic day parade at New Delhi and one cadet was awarded Commonwealth Youth Leadership Award.

#### **6.5.1.3. CC/ Board of Studies (BoS)**

*Whether the CC in the department level and Board of Studies at the Faculty level is in place? Composition of BoS and date of conduct of meeting for last five years and major recommendations made by the BoS should be given in tabular form.*

Yes. The Annamalai University Act provide for the constitution of a Board of Studies in each Faculty and Department. The board of studies meets periodically to review the curriculum in order to remove obsolescence and introduce a new direction to the courses such that it retains its knowledge intensive trait and addresses the emerging needs. The courses are tailored with the

objective of providing development and trained manpower to the needs of society. The guide lines of ICAR & suggestions of members of BoS are given due importance during revisions.

BoS recommendations of UG and PG are placed before “Faculty Board” for critical review and approval. The recommendation of Faculty Board is placed before the Academic Council of the University for Approval. The final decision is taken by the Syndicate for implementation.

### Board of Studies for U.G. Programmes - B.Sc. (Hons) Agriculture / Horticulture

**Dates of BoS Meetings held from 2018- 2022:**15.3.2018, 18.10.2019, 31.3.2022

#### Members:

Chairperson	
1.	The Dean, Faculty of Agriculture, Annamalai University
Internal Members	
2.	Professor and Head, Dept. of Agronomy, Faculty of Agriculture, AU
3.	Professor and Head, Dept. of Entomology, Faculty of Agriculture, AU
4.	Professor and Head, Dept. of Horticulture, Faculty of Agriculture, AU
External Members	
5.	The Dean, AC & RI, Tamil nadu Agricultural University, Coimbatore-641003
6.	The Dean, HC & RI, Tamil nadu Agricultural University, Coimbatore-641003
7.	The Dean, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Nedunkadu, Karaikal-609603
8.	Alumni
9.	Student Representative

### Board of Studies for PG Programmes

**Dates of BoS Meetings held from 2018-2022**

S.No.	Department	Dates
1.	Agronomy	12.2.2021, 10.12.2019, 20.3.2018
2.	Agricultural Economics	13.5.2022, 26.3.2018
3.	Agricultural Extension	6.4.2018, 13.5.2022, 18.2.2021, 13.5.2022
4.	Agricultural Microbiology	20.4.2022, 27.11.2019, 6.4.2018
5.	Entomology	2.12.2019, 15.2.2021, 13.5.2022
6.	Genetics & Plant Breeding	6.4.2018, 3.10.2019, 2.12. 2019, 12.2.2021, 12.5.2022
7.	Horticulture	27.3.2018, 27.11.2019, 16.2.2021, 12.5.2022
8.	Plant Pathology	3.4.2018, 29.4.2019, 17.2.2021, 13.5.2022
9.	Soil Science and Agricultural Chemistry	3.4.2018, 29.4.2019, 17.2.2021, 13.5.2022

#### Members

Sl. No.	Departments	Members
1.	Agronomy	1. Dr.V.Imayavaramban, Prof. & Head - Chairman 2. Dr.R.Raman, Professor, Member 3. Dr.S.Manimaran, Associate Professor, Member 4. Dr.D.Kumaranimuthuveeral, Associate Professor, Member 5. Dr.N.T.Yaduraju (Institute of National Eminence) 6. A.S.Nanna Batcha (Industrialist of Repute) 7. Mr.M.Jeyachandran (Subject Expert) 8. Mr.S.Narayanan (Industrialist of Repute) 9. Miss.S.Meena (Student Representative)
2.	Agricultural Economics	1. Dr. G. Ramanathan, Professor and Head- Chairman 2. Dr.K. Sita Devi, Professor, Member 3. Dr. G. Srinivasan, Associate Professor, Member 4. Dr.R. Narayanakumar, Principal Scientist, (External) 5. Ms. K. Susmitha,(Student member),M.Sc. (Ag.) Agrl.Economics

Sl. No.	Departments	Members
3.	Agricultural Extension	1.Dr.M.VetriSelvan, Professor and Head, Chairman 2.Dr. K.Kanagasabapathi,Professor 3.Dr. G. Tamilselvi, Professor, 4.Dr. R. Jayasankar, Associate professor, 5.Dr. C. Karhtikeyan, Professor & Head, Killikulam 6.Dr.M. Israel Thomas, Professor &Head, Kerala 7.Dr.R.Saravanan Raj, Director (Agricultural Extension), Telangana 8.Mr. R.RajkumarB.Sc (Ag), Regional manager,Devi crop science Pvt. Ltd., Madurai 9.Dr. S. Parthasarathi, Associate Professor, Karaikal 10.R.Priyanka, Student, Faculty of Agriculture
4.	Agricultural Microbiology	1. Dr.P.K.Sivakumaar, Prof. & Head - Chairman 2. Dr.D.Kanchana, Associate Professor, Member 3. Dr.G.Usharani, Associate Professor, Member 4. Dr.M.Jayanthi, Associate Professor, Member 5. Dr.S.Sundaravaradhan, Professor, PAJANCO 6. Dr.M.Senthilkumar, Associate Professor, TNAU, Subject Expert 7. Dr.M.Sundar, Professor , TNAU, Trichy, Alumni of Repute 8. Mrs.Latha, Industrial Person 9. Mr.S.Santhanabharathi, III Ph.D Research Scholar, Student member 10. Ms.S.Meenatchi, II M.Sc.(Ag) Microbiology, Student member
5.	Entomology	1. Dr. S. Arivudainambi, Professor & Head - Chairman 2. Dr. V.Selvanarayanan, Professor, Member 3. Dr. T.Selvamuthukumaran, Associate Professor, Member 4. Dr.K.Subaharan, Principal Scientist, NBAIR, Subject Expert 5. Dr. Mani Chellappan, Prof. &Head, KAU, Subject Expert 6. Dr. S. Raguraman, Professor,TNAU, Subject Expert 7. Dr.A. Kuppusamy, Senior General Manager & Head, RegulatoryAffairs, Crops Protection,Coromandel Intl., Ltd., Industrialist 8. Dr. R.S. Sureshkumar, National Product Development Manager, Rasi seeds Pvt. Ltd., Alumni of Repute 9. B. Logeshwararaj, Student Member
6.	Genetics and Plant Breeding	1. Dr.S.Padmavathi, Prof.& Head (Chairman) 2. Dr.N.Senthilkumar, Member 3. Dr.G.Sathyanarayanan, Member 4. Dr.S.Ezhilkumar,Member 5. Dr.S.Thirumeni, External member 6. Mr.T.Ramanadhane 7. Dr.A.Mothilal, Professor, AD,AC&RI, TRICHY 8. Dr.K.Raja 9. Mr.T.Selvakumar, Rasi seeds 10. Mr.P.Arunkumar, Student representative
7.	Horticulture	1. Dr. K.Haripriya, Professor and Head(Chairman) 2. Dr.ArumugamShakila, Professor of Horticulture, (Member) 3. Dr. S.Anuja, Professor of Horticulture, (Member) 4. Dr. S.Rameshkumar Professor of Horticulture, (Member) 5. Dr. P.T.Srinivas, (External Member) 6. Dr.V.Sundaram (Special Invitee) 7. Mr.Godassu Pradeep Kumar (Student Representative)

Sl. No.	Departments	Members
8.	Plant Pathology	1. Dr. D. Johnchristopher, Professor & Head of Plant Pathology 2. Dr. A.Eswaran, Professor of Plant Pathology, member 3. Dr.Usharani, Professor of Plant Pathology, Member 4. Dr. P.Balabaskar, Associate. Professor of Plant Pathology, Member 5. Dr. Shaji Philip, Principal Scientist and OIC, Plant Pathology 6. Rubber Research Institute of India, Kottayam 7. Dr.M.Theradimani, Professor of Plant Pathology, 8. Agricultural college and Research Institute,TNAU, Madurai 9. Dr.Sainamoie Kurian, Professor of Plant Pathology 10. College of Horticulture, KAU, Thrissur 11. S. Pandiyan, MBA, Regional Field Marketing Manager 12. Sumitomo Chemical India ltd, Trichy 13. M.K Soudarya, (Ph.D. Scholar - 1styear)
9.	Soil Science & Agricultural Chemistry	1. Dr.M.V.Sriramachandrasekharan Professor and Head, Chairperson 2. Dr.A.Angayarkanni, Professor, Dept. of Soil Sci. &Agrl. Chem. Member 3. Dr. S.Srinivasan, Associate Professor, Dept. of Soil Sci. &Agrl. Chem., Member 4. Dr.R.Sankar, Professor, Dept. of Soil Sci. &Agrl. Chem.PAJANCOA, Karaikal-609 Member 5. Miss.M.Ramya, III <sup>rd</sup> PhD, Dept.of Soil Science and Agricultural Chemistry, Member

### Faculty Board:

**Dates of BoS Meetings held from 2018- 2022:** 20.4.2018, 19.10.2019, 5.3.2021, 30.5.2022

### Members

1.	The Dean, (Chairperson), Faculty of Agriculture, Annamalai University
<b>Internal members</b>	
1.	The Professor and Head, Dept. of Agronomy, Faculty of Agriculture, AU
2.	The Professor and Head, Dept. of Plant Pathology, Faculty of Agriculture, AU
3.	The Professor and Head, Dept. of Entomology, Faculty of Agriculture, AU
4.	The Professor and Head, Dept. of Agrl. Microbiology, Faculty of Agriculture, AU
5.	The Professor and Head, Dept. of Soil Sci. &Agrl. Chem, Faculty of Agriculture, AU
6.	The Professor and Head, Dept. of Genetics & Pl. Breeding, Faculty of Agriculture, AU
7.	The Professor and Head, Dept. of Horticulture, Faculty of Agriculture, AU
8.	The Professor and Head, Dept. of Agrl. Economics, Faculty of Agriculture, AU
9.	The Professor and Head, Dept. of Agrl. Extension, Faculty of Agriculture, AU
10.	The Head, Division of Animal husbandry, Faculty of Agriculture, AU
<b>Internal members</b>	
1.	Dr. R. Raman, Prof. of Agronomy, Faculty of Agriculture, AU
2.	Dr. K.Dhanasekaran, Professor of Soil Sci &Agrl. Chem, Faculty of Agriculture, AU
3.	Dr. K. Kanagasabapathy, Professor of Agrl.Extension , Faculty of Agriculture, AU
<b>External member - Academician of repute</b>	
1.	The Dean, PAJANCOA, Karaikkal
<b>External member - Academician of From Leading University</b>	
<b>Student Representative</b>	
1.	P. Arunkumar, Dept. of Genetics and Plant Breeding, Ph. D., Scholar
<b>Subject Expert</b>	
2.	Mr..K.Pugalendhi, Chairman, South India Pulvarising Mills, Trichy
<b>Industrialist of Repute</b>	
3.	Mr.R.Suresh Babu, GM, Sales and Marketting, Rasi seeds Ltd, Coimbatore
<b>Distinguished Alumni of Repute</b>	
4.	Mr.R.Manimaran, Chairman, Mount Park School, Thiyagadurgam, Kallakuruchi
5.	Mr.Subash Chandra Bose,Founder& CEO, Farm Al IndiaPvt.Ltd., Villupuram

## Syndicate

As per Amendments to the Annamalai University act, 2013 Tamil Nadu Universities Laws (Amendment & Repeal) Act, 2021 Published in TN Extraordinary Gazette No:470 and 471 dated 07.10.2021, G.O.Ms. No. 189, dated 07.10.2021)

### Members

S. No.	Category and Section	Name and Address
<b>Class I Ex-Officio Member</b>		
1.	Ex-Officio Chairperson of the Syndicate	<b>Prof. RM. Kathiresan, Ph.D., D.Sc., Vice-Chancellor, Annamalai University, Annamalainagar - 608 002.</b>
2	Class I Ex-Officio Member The Secretary to Government, <i>in-charge of Higher Education</i>	<b>Dr. D. Karthikeyan, I.A.S., Principal Secretary to Government, Higher Education Department, Secretariat, Chennai - 600 009.</b>
3	Class I Ex-Officio Member The Secretary to Government, <i>in-charge of Law</i>	<b>Thiru. B. Karthikeyan, B.L., Secretary to Government (Legal Affairs), Law Department, Secretariat, Chennai - 600 009. (Resi: Flat No. B12K, Asta AVM Apartments P.V.Rajamannar Salai, K.K.Nagar, Chennai - 600 078)</b>
4	Class I Ex-Officio Member The Director of <i>Collegiate Education</i>	<b>Dr. M. Eswaramoorthy, Director(FAC), Director of Collegiate Education, 9<sup>th</sup> floor, EVK Sampath Building, College Road, Chennai -600 006.</b>
5	Class I Ex-Officio Member The Director of <i>Technical Education</i>	<b>Tmt. G. Laxmi Priya, I.A.S., Director, Technical Education, Sardar Patel Road, Guindy, Chennai - 600 025.</b>
6	<b>AU Act 2013 Section 19 (2) (a)</b> Two eminent persons to be nominated by the Chancellor on the recommendation of the Government, who will guide the Vice-Chancellor in administrative, academic and financial matters including any issues connected with social justice and policies of the Government	<b>Vacant</b> (To be nominated) Request letter sent on 13.01.2022
7	<b>AU Act 2013 Section 19 (2) (b)</b> Two members elected by the Principals of the affiliated colleges from among themselves in accordance with the system of proportional representation by means of the single transferable vote	<b>Vacant</b> (To be nominated by Election)
8	<b>AU Act 2013 Section 19 (2) (c)</b> Two members elected by the teachers of the affiliated colleges, other than Principals, from among themselves who are members of the academic council, in accordance with the system of proportional representation by means of the single transferable vote. <b>(Explanation: For the purpose of this clause, "teachers" shall mean those teachers elected to the Academic Council by the teachers of the affiliated colleges from among themselves.)</b>	<b>Vacant</b> (To be nominated by Election)
9	<b>AU Act 2013 Section 19 (2) (d)</b> One Dean or Director nominated by the Chancellor on the recommendation of the Vice-Chancellor	<b>Dr. A. Murugappan, M.E., Ph.D., Dean, Faculty of Engineering &amp; Technology, Annamalai University, Annamalainagar - 608 002.</b>

10	<b>AU Act 2013 Section 19 (2) (e)</b> One University Professor nominated by the Chancellor on the recommendation of the Vice-Chancellor.	<b>Dr. R. Gnanadevan, M.Sc.,M.Ed., Ph.D., Professor,</b> Department of Education, Annamalai University, Annamalai Nagar – 608 002.
11	<b>AU Act 2013 Section 19 (2) (f)</b> One University Associate Professor nominated by the Vice-Chancellor by rotation according to seniority.	<b>Dr. A. Pannirselvam, Associate Professor,</b> Dept. of Mechanical Engg., Annamalai University, Annamalai Nagar – 608 002.
12	<b>AU Act 2013 Section 19 (2) (g)</b> One University Assistant Professor nominated by the Vice-Chancellor by rotation according to seniority; and	<b>Dr. V.L.V. Sudharsan, Assistant Professor,</b> Department of Music, Annamalai University, Annamalai Nagar – 608 002.
13	<b>AU Act 2013 Section 19 (2) (h)</b> One member elected by the Legislative Assembly, from among its members, representing any of the constituency in the University area.";	<b>Thiru.M. Sinthanai Selvan D.M.E.,M.L.A.,</b> (Kattumannarkoil Constituency), # 1 Tamilosai, Chennai Main Road, Koliyanur, Villupuram Tk & Dt. – 605 103.
<b>Ex-Officio Secretary</b>		
	<b>Dr.K. Seetharaman M.Tech., Ph.D.,</b> Registrar i/c, Annamalai University, Annamalai Nagar	

### Academic Council

As per Amendments to the Annamalai University act, 2013 Tamil Nadu Universities Laws (Amendment & Repeal) Act, 2021 Published in TN Extraordinary Gazette No:470 and 471 dated 07.10.2021, (G.O.Ms. No. 189, dated 07.10.2021)

### Members

S. No.	Name and Address	Category
<b>Class I - Ex-Officio Members</b>		
1.	<b>Ex-Officio Chairperson of the Academic Council</b>	<b>Prof. RM. Kathiresan, Ph.D., D.Sc., Vice-Chancellor,</b> Annamalai University, Annamalai Nagar - 608 002.
2.	<b>Deans of Faculties</b>	1 <b>Dr. K. Vijayarani., M.Com., Ph.D., Dean,</b> Faculty of Arts, Annamalai University, Annamalai Nagar – 608 002.
3.		2 <b>Dr. V.Ramaswamy M.Sc., Ph.D., Dean,</b> Faculty of Science, Annamalai University, Annamalai Nagar – 608 002.
4.	<b>Deans of Faculties</b>	3 <b>Dr. P. Anantharaman M.Sc., Ph.D., Dean</b> Faculty of Marine Sciences, Annamalai University, Annamalai Nagar – 608 002.
5.		4 <b>Dr. K. Muthuraman M.A., Ph.D., Dean</b> Faculty of Indian Languages, Annamalai University, Annamalai Nagar – 608 002.

6.		5	<b>Dr. A. Murugappan M.E., Ph.D., Dean,</b> Faculty of Engg. and Technology, Annamalai University, Annamalai Nagar - 608 002.
7.		6	<b>Dr. P.V.Shelvam M.P.Ed., Ph.D., Dean,</b> Faculty of Education, Annamalai University, Annamalai Nagar - 608 002.
8.		7	<b>Dr. T. Arutselvi M.Music., Ph.D., Dean</b> Faculty of Fine Arts, Annamalai University, Annamalai Nagar - 608 002.
9.		8	<b>Dr. A. Angayarkanni M.Sc., (Agri.) Ph.D., Dean,</b> Faculty of Agriculture, Annamalai University, Annamalai Nagar - 608 002.
10.	<b>Ex-Officio Member</b>		<b>The Librarian</b> Annamalai University, Annamalai Nagar - 608 002.
11.	<b>Ex-Officio Member</b>		<b>The Physical Education Director,</b> Annamalai University, Annamalai Nagar - 608 002.
<b>Class - II Other members</b>			
12.	<b>Class - II Other members Section 22 (a)</b> Five Principals of Government Colleges to be nominated by the Chancellor by rotation on the recommendation of the Vice- Chancellor		<b>Vacant (To be nominated)</b> Request letter sent to the Principal Secretary to Governor with panel on 25.05.2022 and email sent on 27.06.2022
13.	<b>Class - II Other members Section 22 (b)</b> Fifteen members from among the Professors, Heads of Departments and other teachers of the University, nominated by the Chancellor on the recommendation of the Vice-Chancellor;		<b>Vacant (To be nominated)</b> Request letter sent to the Principal Secretary to Governor with panel on 25.05.2022 and email sent on 27.06.2022
14.	<b>Class - II Other members Section 22 (c)</b> Not more than ten Principals of the affiliated colleges elected from among themselves in accordance with the system of proportional representation by means of the single transferable vote;		<b>Vacant (To be nominated by Election)</b>
15.	<b>Class - II Other members Section 22 (d)</b> Not more than ten teachers of the affiliated colleges and approved colleges, other than Principals of affiliated colleges, elected from among themselves, in accordance with the system of proportional representation by means of the single transferable vote		<b>Vacant (To be nominated by Election)</b>
16.	<b>Class - II Other members Section 22 (e)</b> Not more than ten Chairmen of Boards of Studies to be nominated by rotation by the Vice-Chancellor,	1	<b>Dr. P. Ravichandran,</b> Professor and Head, Department of Library and Information Science, Annamalai University, Annamalainagar. Mobile: 94435 68717 Email: drrvschool@yahoo.com

		2	<b>Dr. C. Santhosh Kumar,</b> Professor and Head, Department of English, Annamalai University, Annamalainagar. Mobile: 80727 77497 Email: santhoshc2008@yahoo.com
		3	<b>Dr. C. Rakkappan,</b> Professor and Head, Department of Physics, Annamalai University, Annamalainagar. Mobile: 99942 14666 Email: crkcdm@gmail.com
		4	<b>Dr. S. Kothainayaki,</b> Professor and Head, Department of Chemistry, Annamalai University, Annamalainagar. Mobile: 94864 56733, 88256 00818 Email: kothaichemish@gmail.com
		5	<b>Dr. B. Vidivelli,</b> Professor and Head, Department of Civil and Structural Engineering, Annamalai University, Annamalainagar. Mobile: 94434 88394, Email: vidivellibk@yahoo.com
		6	<b>Dr. K. Selvakumar,</b> Professor and Head, Department of Information Technology, Annamalai University, Annamalainagar. Mobile: 94431 85363, Email: kskaucse@gmail.com
		7	<b>Dr. S. Arivudainambi,</b> Professor and Head, Department of Entomology, Annamalai University, Annamalainagar. Mobile: 94435 15406, Email: drnambi@gmail.com
		8	<b>Dr. S. Padmavathi,</b> Professor and Head, Department of Genetics and Plant Breeding, Annamalai University, Annamalainagar. Mobile: 94430 87959, Email: padmakams@gmail.com
		9	<b>Dr. V. Usha,</b> Associate Professor, Department of Commerce, Jawahar Science College, Block - 14, Neveli - 607 803. Mobile: 84898 88433 Email: usha270566@gmail.com
		10	<b>Dr. S. Joseph Christian Daniel</b> Associate Professor and Head, Department of Microbiology, St. Josephs College of Arts and Science (Auto), St. Joseph College Road, Manjakuppam, Cuddalore - 607 001. Mobile: 94433 61929, Email: josephcdaniel@yahoo.com
17.	<b>Class - II Other members Section 22 (f)</b> Five persons to be nominated by the Chancellor,	1	<b>Prof. Dr. S. Sundar,</b> Director, NIT Mizoram, Department of Mathematics, Indian Institute of Technology, Chennai - 600 036.
		2	<b>Dr. P. Shanmugam,</b> Chief Scientist, Head & Professor,

		Environmental Science Lab, CSIR – Central Leather Research Institute, Adyar, Chennai – 600 020.
		<b>3</b> <b>Dr. S. Jayaram,</b> Head – Research and Development Centre, Rajashree Sugars and Chemicals Limited, Mundiyampakkam, Villupuram Dt – 605 601.
		<b>4</b> <b>Dr. M.L. Raja,</b> Teaching Faculty, Department of Ophthalmology, Trichy SRM Medical College, Doctor’s Quarters, “A” Block, Trichy SRM Medical College, Near Samayapuram, Irungalur P.O., Trichirappalli – 621 105.
		<b>5</b> <b>Prof. Dr. V. Gopal,</b> Registrar Academic, Principal, College of Pharmacy, Head of the Department of Pharmacognosy, Mother Theresa Post Graduate and Research Institute of Health Sciences, Indira Nagar, Gorimedu, Pondicherry – 605 006.
18.	<b>Class - II Other members Section 22 (g)</b> Five persons to be nominated by the Pro-Chancellor	<b>Vacant (To be nominated)</b> Request letter sent to the Pro-Chancellor Office on 25.05.2022 for nomination
19.	<b>Class - II Other members Section 22 (h)</b> Two members of the Legislative Assembly to be elected, from among its members, representing any of the constituency in the University area,	<b>Vacant (To be nominated)</b> Request letter sent to the Under Secretary, TNLAS on 05.07.2022 for nomination
20.	<b>Class - II Other members Section 22 (i)</b> Two Secretaries of private colleges to be elected, from among themselves, in accordance with the system of proportional representation by means of the single transferable vote;	<b>Vacant (To be nominated by Election)</b>
21.	<b>Class - II Other members Section 22 (j)</b> Two local body members in the University area to be nominated by the Pro-Chancellor	<b>Vacant (To be nominated)</b> Request letter sent to the Pro-Chancellor Office on 25.05.2022 for nomination
22.	<b>Class - II Other members Section 22 (k)</b> Four members from private industries, research organizations and public sector undertakings to be nominated by the Chancellor on the recommendation of the Government;	<b>Vacant (To be nominated)</b> Request letter sent to the Principal Secretary to Govt., Higher Education Dept., on 25.05.2022 for nomination
23.	<b>Class - II Other members Section 22 (l)</b> Four persons from professional societies or institutions or bodies or associations to be nominated by the Chancellor on the recommendation of the Government;	<b>Vacant (To be nominated)</b> Request letter sent to the Principal Secretary to Govt., Higher Education Dept., on 25.05.2022 for nomination
24.	<b>Class - II Other members Section 22 (m)</b> Two alumni nominated by the Pro-Chancellor on the recommendation of the Vice-Chancellor; and	<b>Vacant (To be nominated)</b> Request letter with panel sent to the Pro-Chancellor Office on 19.05.2022 for nomination
25.	<b>Class - II Other members Section 22 (n)</b> Members of the Syndicate who are not otherwise members of the Academic Council:	<b>Vacant (To be nominated)</b>
26.	<b>Dr.K. Seetharaman Ph.D.,</b> Registrar i/c, Annamalai University, Annamalainagar	<b>Ex-Officio-Secretary</b>

### Finance Committee - Members

S.No.	Name and Address	Category
1.	<b>Prof. RM. Kathiresan, M.Sc. (Agri.), Ph.D., D.Sc., Vice-Chancellor, Annamalai University, Annamalainagar - 608 002</b>	Ex-Officio Chairperson of the Finance Committee
2.	<b>Dr. D. Karthikeyan, I.A.S., Principal Secretary to Government, Higher Education Department Government of Tamil Nadu</b>	Ex-Officio Member of the Finance Committee
3.	<b>Thiru. N. Muruganandam, I.A.S., Addl. Chief Secretary to Government, Finance Department, Government of Tamil Nadu.</b>	Ex - Officio Member of the Finance Committee
4.	<b>Finance Officer, Annamalai University.</b>	Ex-Officio Secretary
5.	<b>Two members from the Syndicate</b>	<b>Vacant</b> (After Syndicate composition is over to be filled)

#### 6.5.1.4. Anti Ragging Cell

*In pursuance to the Judgment of the Hon'ble Supreme Court of India dated 08.05.2009 in Civil Appeal No. 887/2009, the University Grants Commission has framed "UGC Regulations on curbing the menace of ragging in higher educational institutions, 2009" which have been notified on July, 2009 in the Gazette of India. Does the Faculty follow this regulation and subsequent guidelines issued in the matter in letter and spirit? Give details.*

Yes. The Faculty of Agriculture, Annamalai University adopts UGC Regulations on curbing the menace of ragging in higher education institutions 2009 in letter and spirit.

#### Monitoring and Control Measures Implemented

1. Anti-ragging committee is constituted under the headship of the Dean, Faculty of Agriculture, Annamalai University including the Nodal officer and Heads of various departments as members.
2. A Nodal Officer is appointed exclusively for the Faculty of Agriculture.
3. This committee takes all possible efforts to make the campus a ragging free one.
4. Anti-ragging squads involving all the teaching staff of the Faculty of Agriculture monitor the students in the hostel during the first three months of new admission. Roaster is followed to ensure that the students get the moral support and guidance from the anti-ragging squad.
5. Parents and students are sensitized about the anti-ragging issues and its serious consequences on the commencement day and in subsequent orientation classes.
6. A letter of undertaking is obtained from students and parents to abide by the rules.
7. The year coordinators and section coordinators are instructed by Dean to address students on the psychological issues involved in the ragging menace.
8. The rules and regulations including the punishments for ragging are mentioned in the prospectus and displayed at many places in the campus.
9. CCTV camera located at various places in the campus help in continuous surveillance.
10. Anti-ragging banners at different locations are displayed with the contact numbers of the Nodal Officer, year coordinators and section coordinators for lodging complaints.
11. A separate cell for Student Welfare is created in the Faculty of Agriculture to address any grievances.

S.No.	Name of the Nodal Officers for Agriculture	Year
1	Dr. R. Venkataraman, Associate Professor	2017-18
2	Dr. S. Ravichandran, Assistant Professor	2018-19 Till Date

### 6.5.1.5 Biological waste disposal facility

*Whether wastes (chemical, biological, radioactive, universal, and recyclable) are generated by a variety of research, clinical, service, maintenance, and cleaning operations at the Faculty level? If yes, then mention the disposal mechanism being adopted as per the government guidelines.*

At the University level, an effective biomedical waste disposal procedure is standardized and implemented. **Every ladies hostel in the university is provided with insenerators to dispose off biological waste.** Apart from this a 200 kg/hour capacity incinerator is used to dispose biomedical waste in the health centre. **The Sewage Treatment Plant treats (1.5 lakh of liters per day) is supplying treated water to grow fodder grass by the Department of Agronomy.**

#### **Solid Waste Management**

Use of non-recyclable plastics has been completely banned in the campus. Refusing as well as reducing the use of paper has been implemented by switching to paperless, electronic modes of communication. Reusing of one-side-printed paper is adopted for internal purposes. Examination answer scripts, kept for a statutory period after evaluation, are sold along with other waste papers, old records, and paper cuttings in the Press to TNPL for recycling. Campus cleaning and sorting of degradable and non-degradable waste material is done on a daily basis.

Regular auctions are conducted to dispose recyclable scraps through MSTC Limited. Effective management of degradable solid waste in collaboration with the Municipal Panchayat of Annamalainagar: a resource recovery park in Annamalainagar has been set up at an area of 4650 m<sup>2</sup> with an objective to recover the beneficial material from the solid waste through compost making: (Windrow composting and Vermi-composting). These practices are considered as the environmentally and economically sustainable solution for municipal solid waste.

#### **Liquid Waste Management**

Liquid waste from the points of generation (canteens, hostels, toilets, etc.) is let out through proper drainage facility. Treated liquid effluent is used for irrigating sewage farm maintained by the Faculty of Agriculture. Used Water from wash basins and bathrooms is used for gardens, landscaping and vegetation to keep the campus green.

#### **Biomedical Solid Waste (BMW) Management**

The University Hospital (RMMC&H) disposes the BMW through an approved Common Facility as mandated by Tamil Nadu Pollution Control Board. Almost 500-1000 Kg of segregated BMW collected in the color-coded bags, as recommended by Biomedical Waste Management (BMW) Rules, 2018. Exclusively trained manpower to collect BMW waste from all source points in color-coded bags and send them to M/s. Tamil Nadu Waste Management Limited, Chennai, for safe disposal.

#### **E-waste Management**

Functional parts of old electronic gadgets like resistors, capacitors, inductors, diodes, transistors, thermistors, etc. Are removed for reuse in practical/projects. Very old, defunct computers and other accessories, after scrutiny by a committee, are condemned and transferred to the UWD store as e-waste. All the miscellaneous e-waste such as CDs, batteries, fluorescent bulbs, PCBs and electronic items are collected from every department and kept in the UWD store and later sold to certified vendors. Obtaining an undertaking certificate from the vendor to the effect that the e-waste will be disposed as per prevailing norms without harming the environment.

## **Waste Water Management**

The University operates two Wastewater Treatment Plants, a 1000 KLD plant for treating wastewater from University premises and another 250 KLD plant, with disinfection at the end, for treating wastewater from the RMMC&H. The treated water from the plants is reused in the 6 Hectare fodder farm of the University. The plants have been given 'Consent For Operation' (CTO) by the Tamil Nadu Pollution Control Board under Water Act and Air Act.

### **6.5.1.6. Institutional Ethics Committee for experiment on Animals**

*Whether the institute/Faculty is following CPCSEA guidelines and constituted an Institutional Animal Ethics Committee (IAEC), get their animals house facilities inspected and get their project cleared by CPCSEA and IAEC before commencing them? The Faculty should make statement that it is adhering all guidelines in the matter.*

Yes. The Central Animal House comes under the purview of Institutional Animal Ethics Committee, formed by Committee for the Purpose of Control and Supervision of Experiments on Animals, Govt. of India. Research scholars carrying out animal experiments have to submit their proposals and maintenance records to IAEC. A separate team of Veterinarians and Technical Assistants maintain it as per the guidelines of CPCSEA.

Central Animal House, the centralized experimental animal facility of Annamalai University located in an area of 1674 Sq.M with buildings occupying 494.53 Sq.M inside the premises of Rajah Muthiah Medical College since 1988 and is playing a key role for the bio-medical research of staff and students of Annamalai University. Many high impact scientific publications of Annamalai University are based on the animal experimental studies conducted in this facility.

#### **Uniqueness**

1. The Central Animal House is a centralized facility for bio-medical research by the staff and research scholars of Pharmacology, Pharmacy, Medicine, Dentistry, Biochemistry & Biotechnology, Marine Biology, Zoology and Agriculture.
2. As per the approval granted by the Institutional Animal Ethics Committee the animal experimental studies will be carried out in this facility. Basic facilities for rearing the animals are provided in-house.
3. The Central Animal House is a mandatory requirement for the affiliations of Medical Council of India (MCI), Pharmacy Council of India (PCI) and Indian Council of Agricultural Research (ICAR)
4. The experimental animals are bred in the breeding unit and the experiments are conducted in the experimental unit of the Central Animal House.
5. After the completion of experiments, the carcass will be disposed as per the norms of Tamil Nadu Waste Management Ltd.
6. Suitable animal handling trainings are given by veterinarians to the research scholars before commencing the experiments.

The Central Animal House is functioning under the direct supervision of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), Ministry of Fisheries, Animal Husbandry and Dairying, Department of Animal Husbandry and Dairying, Government of India. The facility is presently functioning with a registration number 160 / PO / ReBi / S / 1999 /

CPCSEA for Research for Education purpose and Breeding in house use of small animals. The registration is renewed on 3.5.2020 for a period of five years (renewal order enclosed).

Central Animal House comes under the purview of Institutional Animal Ethics Committee (IAEC) which is formed by CPCSEA, Govt. of India for approval and supervision of experiments on laboratory animals such as Rats, Mice, Guinea Pigs, hamsters and Rabbits for research scholars and staff members of Annamalai University.

### **Animal Health Monitoring**

A team of three veterinarians and three supporting staff of Central Animal House take care of the breeding of animals, general health monitoring, supervision and monitoring of animal experiments as per CPCSEA guidelines. The veterinarians are trained by appropriate competing agencies like CPCSEA and FELASA (Federation of European Laboratory Animal Sciences Association). Training programmes are conducted in the Central Animal house so as to train the research scholars in the handling of experimental animals.

### **Facilities of Central Animal House**

1. Breeding of experimental animals
2. Experimental facility for the staff and research scholars
3. Separate quarantine facility
4. Poly carbonate animal cages
5. Animal restraining devices
6. Animal health monitoring devices
7. Horizontal rectangular type autoclave for sterilization purpose
8. Biological waste disposal facility

### **6.5.1.7. Committee for prevention of sexual harassment of women at work places**

*Does the institution is adhering the sexual harassment of women at workplace (Prevention, Prohibition and Redressal Act, 2013) in letter and spirit. Mention the constitution of sexual harassment committees and date of proceedings conducted in last five years in tabular form.*

The university has constituted complaints Committee against sexual harassment at work pace (CCSHAU) with a vision to provide awareness about sexual harassment, nurturing a decent, safe environment on campus and ensuring nondiscriminatory and judicious resolution of complaints about sexual harassment. The objective of the committee is “to maintain congenial working environment for women employees and students of Annamalai University in accordance with the guidelines provided by the Supreme Court of India”. The committee members and activities of the complaints committee against sexual harassment at workplace for the past five years are detailed below.

### **Members:**

Period	Committee Members
<b>2017-18 &amp; 2018-19</b>	Dr. S. Poongothai, Chair Person Dr. Arumugam Shakila, Member Dr. C. Subramanian, Member Dr. A. Sylvia Santhakumari, Member Dr. M. Jeyakumaran, Member Dr. C.S. Rathinasabapathy, Member Dr. L. Vennila, Member Ms. Seetha, Member Ms. K. Muthumanikam, Member
<b>2019-20 to till date</b>	Dr. P.Mullai, Chair Person Dr. D.Geetha, Member Dr. J.Thirumal, Member

Period	Committee Members
	Mr.C.K.Parimalam, Member Mrs.E.Kalyani, Member Dr. R.Elancheran, Member Mis,E.SherliPushpam Member Mis. S.Abarna, Member Dr.V.Nadanasabapathy, Member

### Major activities of Committee for Prevention of Sexual Harassment of Women at Work Places

Year	Activity	Details
2017-18	Date of Proceedings conducted and Recommendations	21.08.2017, 10.01.2018, 20.01.2018, 22.01.2018 Complaint 1: Nil
	Date of awareness campaign for UG and PG Students	05.02.2018, 06.02.2018, 12.02.2018, 20.02.2018, 21.02.2018, 22.02.2018
2018-19	Date of Proceedings conducted and Recommendations	05.01.2018,01.02.2018,12.03.2018,10.07.2018,19.09.2018,11.01.2019,22.04.2019,25.07.2019,04.12.2019 Complaint 1: Nil
	Date of awareness campaign for UG and PG Students	05.02.2018,06.02.2018,12.02.2018,20.02.2018,21.02.2018, 22.02.2018
2019-20	Date of Proceedings conducted and Recommendations	05.01.2018,01.02.2018,10.07.2018,19.09.2018,11.01.2019, 22.04.2019,25.07.2019,04.12.2019,22.01.2020,27.02.2020, 12.03.2020 Complaint 1: Nil
	Date of awareness campaign for UG and PG Students	03.03.2020, 11.03.2020
2020-21	Date of Proceedings conducted and Recommendations	22.01.2020,27.02.2020,12.03.2020,12.10.2021,15.02.2021,22.02.2021,22.07.2021,22.07.2021,15.09.2021,12.10.2021,30.11.2021,15.12.2021,17.12.2021 Complaint 1.Allotment of P.G and Ph.D. girl students may be stopped 2.An yearly increment may be ceased for two years.
	Date of awareness campaign for UG and PG Students	27.01.2021,17.02.2021,01.03.2021,17.12.2021
2021-22	Date of Proceedings conducted and Recommendations	27.01.2021,17.02.2021,17.12.2021,11.01.2022,04.02.2022,23.02.2022,14.03.2022,11.04.2022,12.04.2022,13.04.2022,11.05.2022, 12.05.2022,08.08.2022 Complaint 1: Recommended for suspension of respondent Complaint 2: Minor punishment
	Date of awareness campaign for UG and PG Students	03.03.2020,11.03.2020,27.01.2021,17.02.2021,01.03.2021,17.12.2021

### Student Counseling

Mentor-Mentee system was adopted to offer counseling to the students. Students admitted in the first year are allotted to teaching staff who will act as the mentor for the group till they complete the respective programme. Each mentor will collect the each mentee's detail and offer counseling to specific grievances through one to one interactions. At postgraduate level, the head of the department will allot students to the teaching staff based on the area of their specialization, who will act as Mentor-Mentee and the chairman of the advisory committee. The advisory committee guides the student on his/her academic, research and personal aspects. The faculty provides all-round counseling to its students and helps them find suitable jobs through the placement cell, which is headed by a senior professor and ably assisted by a team of nominated staff from each department. Teacher to student ratio is narrow in our system. Slow learners are invited separately

by the mentors/faculty and provided with additional study material and guidance. Beyond this, the institute offers 'Tutorial' classes in English to help many students with rural background.

### The Students Club

The "Agricultural Association" run by the students and for the students provides a platform to showcase the inherent and hidden potential of students and provide an opportunity for inter agricultural student interactions. Nominated student secretaries are ably supported by separate staff advisors for literary, cultural and sports activities. They together plan and execute various activities of the association. Annual Cultural, Literary and Sports and Games events are organized every year. In addition State-level Inter-agricultural sports meet (SPORAG) is also organized to facilitate inter-college student interaction. Apart from this, the association also sponsors and encourages students' participation in sports meet and Inter-collegiate tournaments and cultural competitions. Last year, the students celebrated the PONGAL festival in a unique and grand manner for the first time in the history of the university.

## 6.5.2. FACULTY

### 6.5.2.1. Faculty Strength

*Mention the Faculty position (both in sanctioned and in-position) at the College.*

The faculty position includes Professors, Associate Professors and Assistant Professors. To fulfill the mandates of education, research and extension, these positions are filled-up based on the vacancy as per the University procedure.

There are 237 permanent teachers in the faculty of Agriculture. These staff members are from different core disciplines of Agriculture viz., Agronomy, Agricultural Economics, Agricultural Extension, Entomology, Genetics and Plant Breeding, Agricultural Microbiology, Horticulture, Soil Science and Agricultural Chemistry, Plant Pathology and Animal Husbandry. To teach allied and supporting courses like Agricultural Engineering, Basic science and Humanities (Statistics, Business management, English, Tamil and Computer science), physical education and yoga, 59 staff members are drafted from various departments of Faculty of Engineering, Arts, Science, Indian languages and Education of the University.

The strength of teaching staff is detailed below:

Designation	Sanctioned	Filled	Vacant	Total
Professors	49*	49	-	49
Associate Professors	68	68	-	68
Assistant Professors	120	120	-	120
<b>TOTAL</b>				<b>237</b>

\*4 Professors retired from services as on 30.06.2022

### 6.5.2.2. Faculty Profile (Department-wise)

*Mention department-wise faculty profile in tabular form and mention whether present profile is sufficient to meet the academic requirement of the College.*

The strength of teaching staff in various departments of the Faculty of Agriculture is furnished below. Every teaching staff in the faculty is directly involved in teaching, research and extension and is sufficient to meet the academic requirement of the faculty.

Details of the Departments of Study	Faculty in Place				Vacant Position				Faculty recommended by ICAR			
	Professors	Associate professors	Asst. professors	Total	Professors	Associate professors	Asst. professors	Total	Professors	Associate professors	Asst. professors	Total
Agronomy	6	12	21	38	-	-	-	-	1	1	4+1	7
Horticulture	6	5	24	35	-	-	-	-	1	1	2+1	5
Genetics and Plant Breeding	10	10	12	31	-	-	-	-	1	1	2+1	5
Agrl. Extension	4	9	11	23	-	-	-	-	0	1	1+1*	3
Agrl. Economics	5	5	3	13	-	-	-	-	0	1	2+1*	4
Entomology	3	6	11	19	-	-	-	-	0	1	2	3
Plant Pathology	3	6	13	22	-	-	-	-	0	1	2	3
Agrl. Microbiology	5	9	10	24	-	-	-	-	-	-	1	1
Soil Science & Agrl. Chemistry	6	4	9	19	-	-	-	-	0	1	2+3*	6
Animal Husbandry	1	1	4	6	-	-	-	-	0	0	2+1	3
<b>Sub-Total (Agriculture)</b>	<b>49*</b>	<b>67</b>	<b>118</b>	<b>237</b>	-	-	-	-	<b>3</b>	<b>8</b>	<b>19+8</b>	<b>40</b>

\*4 Professors retired from services as on 30.06.2022

#### Faculties drafted from other Departments from the University for allied and supporting courses

Agrl. Engineering	2	22	-	24	-	-	-	-	0	0	2	2
Statistics	6	2	-	8	-	-	-	-	0	0	1	1
English	-	-	13	13	-	-	-	-	0	0	1	1
Tamil	-	7	3	10	-	-	-	-	-	-	-	-
Yoga studies	-	-	1	1	-	-	-	-	-	-	-	-
Computer Science	-	-	2	2	-	-	-	-	-	-	1	1
Physical Education	-	1	-	1	-	-	-	-	-	-	-	-
<b>Sub-Total (Other Departments)</b>	<b>8</b>	<b>32</b>	<b>19</b>	<b>59</b>	-	-	-	-	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>
<b>Grand Total</b>	<b>57</b>	<b>99</b>	<b>137</b>	<b>296</b>					<b>3</b>	<b>8</b>	<b>32</b>	<b>45</b>

#### 6.5.2.3. Credentials of the Faculty

Whether the institution has employed competent faculty members qualified to accomplish the mission and goals of the institution? Give the highest qualification received by each faculty, related work experience in the field, professional licensure and certifications, honors and award, continuous documented excellence in teaching, or other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes.

Each department of study under the Faculty of Agriculture has well qualified staff members to fulfil the objectives of quality teaching and research. Adequate emphasis is placed on upgradation of skills and knowledge. Staff are encouraged to participate in refresher courses, workshops, seminars, conferences and training both in India and Abroad. Additional knowledge gained from such faculty development programmes are given due weightage in career advancement programmes. The qualifications and competencies of the staff members are presented in tabular form below.

**Accomplishments of the Departments, Faculty of Agriculture**

<b>Category</b>	<b>Period (Upto 2016)</b>	<b>Period (2017-2022)</b>	<b>Total</b>
Number of publications (Journalarticles)	5736	2489	8225
Number of publications Seminars/Conferences/Symposia)	3003	1055	4058
Number of Books and Book chapters	853	763	1616
Number of Funded Projects	567	398	965
Grantmobilization (Rs. in Lakhs)	4970	2671	7641
Number of D.Sc., Produced	1	0	1
Number of Ph.Ds. Produced	478	64	542
Number of PGs. Produced	2829	949	3778
Number of Seminars/Conferences/Workshops/Trai nings Organized	149	112	261
Number of Award sreceived by the Faculty	528	355	883
Number of Professional visits to abroad	119	42	161

**Department of Agronomy**

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications		Number of Publications (2017-2022)	
				PG	Ph.D.	Journals	Others*	Journals	Others*
1.	Dr. V. Imayavaramban, Professor & Head	29	Agroforestry, Oil Seeds	15	1	40	1	7	-
2.	Dr. M. Ganapathy (Retd.), Professor	35	Climatology, Agroforestry	21	5	75	28	8	7
3.	Dr. S. Natarajan, Professor	32	SRI, Organic Agriculture and Irrigation management	18	3	40	15	5	2
4.	Dr. (Mrs.) A. Sundari, Professor	28	Weed management and Irrigation management	20	6	42	4	2	1
5.	Dr. R. Raman, Professor	28	Post-harvest Technology, Organic farming, Pulses	5	-	25	18	6	2
6.	Dr. S. Kandasamy, Professor	23	Post-Harvest Technology, Cropping System	11	-	24	8	4	-
7.	Dr. M. Meyyappan Associate Professor	22	Water management, Forestry, Weed management and Cropping system	9	-	22	19	11	10
8.	Dr. S. Manimaran, Associate Professor	20	Nutrient management, Weed management, Sugarcane production	9	1	19	10	10	3
9.	Dr. M. Thirupathi, Associate Professor	20	Cropping system and Irrigation Agronomy	9	-	54	14	12	10
10.	Dr. P. Sudhakar Associate Professor	20	Soil fertility, Cropping system and Agri. Meteorology	9	-	15	10	5	1
11.	Dr. C. Kalaiyaran Associate Professor	20	Nutrient management, Dry farming and weed management	8	-	65	18	33	11
12.	Dr. G. Baradhan, Associate Professor	19	Nutrient management, Agrometeorology	7	1	64	22	17	7
13.	Dr. S. Babu, Associate Professor	18	Soil fertility and Weed Management	9	1	32	6	9	-
14.	Dr. N. Ramesh, Associate Professor	19	Agrometeorology and Irrigation management	7	0	27	21	5	1
15.	Dr. S. Ramesh, Associate Professor	20	Cropping system, Soil fertility and Nutrient management	9	0	79	13	24	5
16.	Dr. S. M. Suresh Kumar, Associate Professor	16	Weed management and Agricultural meteorology	6	1	60	20	9	5
17.	Dr. S. Elankavi, Associate Professor	17	Agronomy-Nutrient Management	8	-	45	14	8	2
18.	Dr. J. Nambi, Associate Professor	17	Weed science	6	-	13	2	8	-
19.	Dr. (Mrs.) D. Kumari Manimuthu Veeral, Assistant Professor	20	Organic Agriculture, Nutrient management	9	1	59	21	21	5
20.	Dr. K. Suseendran, Assistant Professor	20	Nutrient management and Integrated weed management	6	-	34	10	17	1

21.	Dr.R.Krishnamoorthy,AssistantProfessor	20	Organic Agriculture,Commercialcrop	5	-	10	-	1	1
22.	Dr.S.KrishnaPrabu, AssistantProfessor	19	Nutrient management	6	-	84	10	52	9
23.	Dr.M.Saravana Perumal, AssistantProfessor	19	Irrigationmanagementandcropproduction	8	-	21	2	8	-
24.	Mr.S.R.VinodKumar, AssistantProfessor	19	Soilfertility,Croppingsystem	7	-	18	-	6	-
25.	Dr.G.Murugan, AssistantProfessor	19	Weedscience,Farm mechanization	7	-	16	2	11	1
26.	Dr. R.Rex Immanuel, AssistantProfessor	19	Naturalresourcemanagement(degraded agro-ecosystem Rehabilitation), Farmingsystemsresearch	7	-	42	14	30	2
27.	Dr.P.Stalin, AssistantProfessor	19	Croppingsystemand integratednutrientmanagement	7	-	34	6	2	1
28.	Dr.P.Anandan, AssistantProfessor	18	Nutrientmanagement	8	-	20	7	2	2
29.	Mr. K.P. Senthilkumar, AssistantProfessor	18	SystemofRiceIntensification	9	-	-	2	-	-
30.	Dr.K.Arivukkarasu, AssistantProfessor	17	Weedscience	8	-	5	2	6	1
31.	Dr.C.Ravikumar, AssistantProfessor	16	Nutrientmanagement	2	-	40	5	23	3
32.	Dr.S.Jawahar, AssistantProfessor	16	Nutrientmanagement	8	-	146	21	28	6
33.	Dr.R.Gobi, AssistantProfessor	16	CropproductionandAgriculturalmeteorology	9	-	23	3	13	-
34.	Dr.A.Balasubramanian, AssistantProfessor	16	Cropproduction,Nutrient management	8	-	22	3	13	-
35.	Dr.S. Kalaisudarson, AssistantProfessor	16	Weedmanagement	6	-	12	-	13	2
36.	Dr.G.Sivakumar, AssistantProfessor	20	Drylandfarming,Organic farming	8	-	13	2	11	3
37.	Dr.A.P.SrinivasaPerumal, AssistantProfessor	16	Weedmanagement,crop cultivation	7	-	12	3	10	-
38.	Dr.A.Karthikeyan, AssistantProfessor	14	Weed management,NutrientManagement,Sugarcanepr oductiontechnology	5	-	11	26	3	2
39.	Dr.G.B.SudhagarRao, AssistantProfessor	14	NutrientManagement, cropproduction	6	-	46	10	13	8

**Department of Agricultural Microbiology**

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total Number of Publications (2017 to 2022)
				PG	Ph.D.		
1	Dr.V.Muralikrishnan Professor and Head	28	Microbial inoculant Consortium for sugarcane, biofuel production.	18	07	12	-
2	Dr.D.Stella Professor	28	Stress tolerant inoculant development	17	07	40	-
3	Dr.P.K.Sivakumaar Professor	26	Plant Growth Promoting Rhizobacteria Induced Systemic Resistance	15	07	11	-
4	Dr.S.Kalaiarasu Professor	26	Bioremediation of xenobiotics.	16	08	42	7
5	Dr.D.Reetha, Professor	22	New formulations and shelf life improvement of Biofertilizer	16	08	30	4
6	Dr.R.Elango, Associate Professor	21	Composting Techniques	16	06	31	7
7	Dr.D.Kanchana , Associate Professor	21	Food Preservation Techniques	19	04	35	5
8	Dr.M.Jayanthi, Associate Professor	21	Bioinoculant AM fungi	17	04	19	-
9	Dr.G.Usharani , Associate Professor	21	Plant Growth Promoting Rhizobacteria - Biocontrol	7	06	45	-
10	Dr.B.Karthikeyan, Associate Professor	21	Microbial interactions- medicinal plant	15	04	35	3
11	Dr.K.Muthuselvam Associate Professor	20	Vermi biotechnology	15	04	11	-
12	Dr.J.Sriman Narayanan, Associate Professor	20	Bio ethanol and Enzymology	10	04	17	4
13	Dr.V.Prabudoss Associate Professor	19	<i>Glucanoacetobacter</i> - Sugarcane	16	03	27	4
14	Dr.J.Divakaran, Associate Professor	19	Management of municipal solid waste	05	01	12	-

15	Dr.S.Mahalakshmi, Asst. Professor	18	Plant Growth Promoting Rhizobacteria - formulation	15	02	43	4
16	Dr.R.Parthasarathi , Asst. Professor	16	Biosurfactants and nanoscience	13	04	33	10
17	Dr.S.Bharathiraja , Asst. Professor	16	AM fungal Symbiosis- Floriculture	13	01	10	4
18	Dr.S.Dinakar Asst. Professor	16	Bioflocculation studies	06	02	15	6
19	Dr.N.Pandeeswari Asst. Professor	16	Halophiles in coastal agriculture.	03	-	25	9
20	Dr.M.Vijayapriya, Asst. Professor	16	Silicate Solubilizing bacteria	01	-	30	7
21	Dr.G.Kumaresan Asst. Professor	16	Single cell protein Technology	04	-	33	12
22	Mrs.J.Jayachitra, Asst. Professor	16	Human Probiotics	03	-	25	8
23	Mr.K.Sivakumar Asst. Professor	15	AM fungal Symbiosis- Horticulture	04	-	34	12
24	Dr.P.Sivasakthivelan Asst. Professor	14	Agriculturally Beneficial Microbial consortium development	04	-	60	16

### Department of Agricultural Economics

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided (2017-2022)		Total number of publications (Till Date)	Total number of Publications (2017 to 2022)
				PG	Ph.D.		
1.	Dr. G. Ramanathan, M.Sc. (Ag.), Ph.D. Professor & Head	28	Production Economics and Econometrics	6	-	12	2
2.	Dr.K.R.Sundaravaradarajan, M.Sc. (Ag.), M.B.A., Ph.D. Professor	35	Natural Resource Economics, Agri business Management & Trade	6	1	47	3
3.	Dr. K. Sita Devi, M.Sc. (Ag.), Ph.D. Professor	30	Development and Policy & Women Studies	6	1	58	24
4.	Dr. V. Banumathy, M.Sc. (Ag.), Ph.D. Professor	29	Agricultural Marketing & Supply Chain Management	4	1	26	5

5.	Dr. R. Venkataraman, M.Sc. (Ag.), Ph.D. Professor	28	Natural Resource and Environmental Economics	6	3	24	6
6.	Dr. S. Ravichandran, M.Sc. (Ag.), Ph.D. Associate Professor	22	Agricultural Marketing and Resource Economics	5	-	17	6
7.	Dr. G. Srinivasan, M.Sc. (Ag.), M.B.A., Ph.D. Associate Professor	20	Agricultural Finance and Agribusiness Management	5	-	15	5
8.	Dr. T. Ponnarasi, M.Sc. (Ag.), Ph.D. Associate Professor	21	Development and Policy & Women Studies	5	-	30	16
9.	Dr. C. Prabakar, M.Sc. (Ag.), Ph.D. Associate Professor	19	Macro Economics	7	2	30	20
10.	Dr. D. Velmurugan, M.Sc. (Ag.), Ph.D. Associate Professor	18	Environmental Economics	7	-	12	4
11.	Dr. R. Rengaraju, M.Sc. (Ag.), Ph.D. Assistant Professor	21	Agricultural Marketing	3	-	12	2
12.	Dr. L.K. Velayutham, M.Sc. (Ag.), Ph.D. Assistant Professor	18	Production Economics	6	-	14	4
13.	Dr.R.Selvakumar, M.Sc. (Ag.), Ph.D. Assistant Professor	15	Natural Resource and Environmental Economics	7	-	16	4

### Department of Agricultural Extension

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
1.	Dr. Santha Govind (Retired on 30.06.2020)	35	Gender studies, ICT, Rural Development	28	8	140	2	5
2.	Dr. K. Kanagasabapathi, Professor (Retired on 30.06.2022)	33	Indigenous knowledge system and climate change	25	9	117	12	19
3.	Dr.M.Vetriselvan, Professor & Head	29	Agricultural Training , HRD	15	2	12	2	1
4.	Dr.G.Tamilselvi, Professor	27	Entrepreneurship development, ICT	13	-	22	6	-
5.	Dr.P.Jeyaseelan, Professor	28	Human Resource Management, ICT& Cyber Extension	14	-	31	0	-

6.	Dr.J.Meenambigai, Associate Professor	20	ICT, HRD, Nutrition Extension	9	1	69	21	16
7.	Dr.D.Vengatesan, Associate Professor	20	Women studies, Technological Development	7	1	65	4	1
8.	Dr.P.Shanmugaraja, Associate Professor	19	Communication behavior, ITK.	6	1	58	29	7
9.	Dr.V.Sakthivel, Associate Professor	18	Training and Adoption studies	5	-	86	28	27
10.	Dr.M.Kavaskar, Associate Professor	18	ICT, Media Studies, Transfer of Technology , Climate Change	6	3	109	21	21
11.	Dr.T.Kalidasan, Associate Professor	20	Communication, Information Management, Learning Experience	5	--	30	9	5
12.	Dr.R.Jayasankar, Associate Professor	19	Information Technology	5	-	64	1	15
13.	Dr.T.Raj Pravin, Associate Professor	16	Transfer of Technology, Farm Journalism, ICT	4	-	-	4	2
14.	Dr.R.Jeya, Associate Professor	20	Yield Gap and Adoption Studies	6	-	30	5	6
15.	Mr.S.Durairaj, Assistant Professor	21	Transfer of Agricultural Technology	2	-	10	0	-
16.	Dr.V.Balamurugan, Assistant Professor	20	Communication, Information Management, Learning Experience	6	-	40	40	20
17.	Dr.M.Natarajan, Assistant Professor	20	ITK, Gender Analysis, ICT, Adoption Behaviour, Training & Impact Studies.	8	-	45	1	4
18.	Dr.I.Isaac Devanand, Assistant Professor	19	Indigenous Knowledge and Farming Practices	4	-	-	4	-
19.	Dr. T. Balakrishnan, Assistant Professor	19	Agricultural Training	4	-	45	12	16
20.	Dr.P.Ramesh, Assistant Professor	19	Transfer of Sustainable Technologies	5	-	40	5	1
21.	Dr.B.Sudhakar, Assistant Professor	19	Yield Gap Analysis	5	-	20	0	4
22.	Dr.R.Muthukumar, Assistant Professor	19	Agricultural Training, Marketing Behaviour	5	-	40	0	5
23.	Dr.V.Kalirajan, Assistant Professor	18	Organic Farming, Indigenous Agricultural Practices &Eco Friendly Technologies.	5	-	15	2	5
24.	Dr.T.Sujaivelu, Assistant Professor	17	Marketing Behaviour, Value Adoption	4	-	18	5	4

25.	Dr. Darling B. Suji, Assistant Professor	17	Adoption Studies	4	-	46	6	23
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### Department of Entomology

S. No.	Name & Designation	Total Service	Field of Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journal	*Others
1.	Dr.V.Selvanarayanan, Professor	29	Host Plant Resistance	22	10	178	8	20
2.	Dr.S.Manickavasagam, Professor (Retired on June 30, 2022)	29	Parasitoid Taxonomy	31	13	200	42	7
3.	Dr.S.Arivudainambi, Professor and Head & Director, IQAC	28	Phyto-insecticides & Insecticide Toxicology	23	13	147	34	19
4.	Dr.T.Selvamuthukumar, Associate Professor & Deputy Director, IQAC	21	Phyto-insecticides	12	1	71	17	29
5.	Dr.C. Kathirvelu, Associate Professor	20	Storage Entomology	11	1	169	34	49
6.	Caption Dr.R. Kanagarajan, Associate Professor & Director, Security and Patrolling & warden	19	Parasitoid Taxonomy	11	3	83	19	17
7.	Dr.R. Ayyasamy, Associate Professor	17	Insecticide Toxicology	8	1	76	16	18
8.	Dr.R.Kannan, Associate Professor	21	Phyto-insecticides	13	1	109	24	39
9.	Dr.V.Sathyaseelan, Associate Professor	17	Acarology	9	Nil	32	10	17
10.	Dr.B.Anandaganesaraja, Assistant Professor	20	Biological control	12	1	38	6	42
11.	Mrs.S.Pushpalatha, Assistant Professor	20	Apiculture	Nil	Nil	25	8	10
12.	Dr.Chand Asaf, Assistant Professor	18	Host Plant Resistance	9	1	128	24	50
13.	Dr.A.M.A. Amala Hyacinth, Assistant Professor	18	Apiculture	1	Nil	10	3	3
14.	Dr.M.Ramanan, Assistant Professor	18	Phyto-insecticides	3	Nil	19	8	7

15.	Dr.N. Muthukumaran, Assistant Professor	17	Host Plant Resistance	10	1	106	26	34
16.	Dr.T.Rani, Assistant Professor	16	IPM	4	1	9	2	2
17.	Dr.M.Senthilkumar, Assistant Professor	15	Myco-insecticides	6	Nil	57	30	10
18.	Dr.T.Nalini, Assistant Professor	15	Myrmecology	8	1	55	19	22
19.	Dr.M.Pazhanisamy, Assistant Professor	15	IPM	6	1	72	40	17
20.	Mr.A.Sivaraman, Assistant Professor	14	Host Plant Resistance	Nil	Nil	Nil	Nil	Nil

### Department of Genetics and Plant Breeding

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-20 22)	
				PG	PhD		Journal	Others
1.	Dr. S. Padmavathi Professor and Head	26	Hybrid seed production, Seed Treatment techniques	19	3	20	3	1
2.	Dr. M. Prakash Professor	26	Stress Physiology and plant Molecular Biology	25	8	72	15	6
3.	Dr. S. Murugan Professor	26	Cytogenetics, Heterosis Breeding, Molecular Plant Breeding, Molecular marker technology	15	3	50	9	2
4.	Dr.S.Thirugnanakumar Professor (Retired on 30.06.2022)	26	Molecular genetics, Biotechnology, Mutation Breeding, Recombination breeding	28	7	90	5	2
5.	Dr. P. Senthil Kumar Professor	24	Heterosis Breeding, Sesame Breeding, Musk melon breeding, Molecular marker technology	22	3	31	-	2
6.	Dr. Y. Anbuselvam Professor	26	Genetics and Cytogenetics, Biometrics, Biotechnology	23	6	56	10	2
7.	Dr. P. Thangavel Professor	25	Biometrics, Genetics and Pulse Breeding	18	1	57	3	1
8.	Dr. K. Saravanan Professor	24	Quantitative Genetics, Biometric analysis	18	4	98	4	3

9.	Dr. N. Senthil Kumar Associate Professor	22	Heterosis Breeding in Vegetables	15	3	72	19	9
10.	Dr. Y. Anitha Vasline Associate Professor	22	Mutation Breeding, Cytogenetics	15	1	29	8	4
11.	Dr. B. Sunil Kumar Associate Professor	20	Physiological and Molecular genetics in Pulses	11	1	61	6	4
12.	Dr. J. Gokulakrishnan Associate Professor	21	Heterosis Breeding in Rice & Maize	13	2	43	10	6
13.	Dr. R. Elangaimannan Associate Professor	21	Heterosis Breeding, Biometrics, physiology & Plant Biotechnology	13	1	43	10	3
14.	Dr. T. Sabesan Associate Professor	20	Heterosis breeding, and Molecular Plant Breeding for Abiotic stress.	11	-	61	18	8
15.	Dr. V. Anbanandan Associate Professor	18	Sugarcane Breeding, Rice Breeding	7	-	33	9	2
16.	Dr. GSathiyarayanan Associate Professor	19	Seed Halogenation. Hybrid seed production	16	-	90	29	2
17.	Dr. S. Ezhil Kumar Associate Professor	19	Molecular Varietal identification, Seed Production and Seed Testing.	15	-	21	5	2
18.	Dr. P. Karthikeyan Associate Professor	17	Rice Saline Tolerant	7	-	46	9	3
19.	Dr. M. Venkatesan Associate Professor	17	Rice Breeding, Innovative Breeding, Hybrid rice	10	-	57	9	2
20.	Dr. R. Ebneezar Baburajan Associate Professor	19	Heterosis Breeding, Resistance Breeding	6	-	34	19	4
21.	Dr. R. Eswaran Assistant Professor	19	Heterosis Breeding, Molecular Breeding	12	-	63	22	5
22.	Dr. C. Praveen Sampath Kumar Assistant Professor	18	Heterosis Breeding in Bhendi	10	-	73	19	3
23.	Dr. J.L. Joshi Assistant Professor	16	Heterosis Breeding in Bhendi	8	-	43	11	2
24.	Dr. R. Anandan Assistant Professor	16	Plant Molecular Biology and Biotechnology	8	-	33	5	1
25.	Dr. K.R. Saravanan Assistant Professor	16	Screening genotypes for saline Ecosystem	12	-	72	21	4
26.	Dr. S. Vennila Assistant Professor	16	Mutation Breeding, Cytogenetics	8	-	43	27	5
27.	Dr. S. Suganthi Assistant Professor	16	Recombination Breeding, Crop Diversity Analysis	8	-	41	26	4

28	Dr. S. RanjithRajaram Assistant Professor	14	Rice and Sesame Breeding	8	-	31	24	3
29.	Dr. A. Kamaraj Assistant Professor	13	Pre sowing seed enhancement treatment, Seed testing	7	-	34	18	2
30.	Dr. P. Satheesh Kumar Assistant Professor	13	Heterosis Breeding, Mutation Breeding.	7	-	50	18	4
31.	Mr. V. Arivoli* Assistant Professor	12	Recombination Breeding	-	-	0	-	-
32.	Dr. R. Narayanan Assistant Professor	12	Recombination breeding, Mutation Breeding	7	-	15	8	2

### Department of Horticulture

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
				PG	Ph.D.		Journals	Others
1.	Dr. K. Haripriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
2.	Dr.ArumugamShakila Professor	30	Fruit Science	46	3	115	4	6
3.	Dr. A. Anburani, Professor	28	Vegetable Science	28	3	61	14	10
4.	Dr. P. Karuppaiah, Professor	28	Floriculture and Landscaping	26	7	110	15	8
5.	Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11
6.	Dr.S.Rameshkumar Professor	23	Fruit Science	14	6	52	20	16
7.	Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
8.	Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
9.	Dr. S. Kamalakannan Assoc. Professor	19	Vegetable Science	9	-	86	32	25
10.	Dr. R. Sudhagar Associate professor	20	Floriculture and Landscaping	12	1	46	40	
11.	Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	- 37	22	9

12.	Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
13.	Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	-	10	-
14.	Dr. C. Muruganandam Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	10	1	35	17	16
15.	Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	06	-	54	18	-
16.	Dr. R. Sendhilmathan, Assistant Professor	20	Floriculture and Landscaping	8	1	39	13	18
17.	Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
18.	Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28
19.	Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
20.	Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	31	11	-
21.	Dr. K. Sha Assistant Professor	20	Vegetable Science	09	-	32	-	24
22.	Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	8	-	16	13	11
23.	Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10
24.	Dr. T. Uma Maheswari Assistant Professor	19	Fruit Science	8	1	60	42	62
25.	Dr. D. Dhanasekaran Assistant Professor	19	Floriculture and Landscaping	8	1	47	38	-
26.	Dr. A. R. Lenin Assistant Professor	17	Floriculture and Landscaping	5	-	14	4	6
27.	Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22
28.	Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
29.	Mr. S. Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
30.	Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7

31.	Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	13	12
32.	Dr.G.SamlindSujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
33.	Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
34.	Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	3	-	31	6	5
35.	Dr. S. Sivasankar Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	20	4

### Department of Plant Pathology

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
1.	Dr. D. John Christopher, Professor & Head	24	Eco-friendly Management of Plant Diseases	17	05	37	05	03
2.	Dr. A. Eswaran ,Professor	29	Edible Mushroom and disease identification	33	11	50	05	00
3.	Dr. S. Usha Rani,Professor	29	Biological control of Plant Diseases	25	05	40	03	00
4.	Dr. P. Balabaskar, Associate Professor	22	Biological management of crop diseases	16	04	56	08	00
5.	Dr. P. Renganathan, Associate Professor	20	Post-Harvest disease management, Mushroom Technology.	09	01	75	36	16
6.	Dr. K. Sanjeevkumar, Associate Professor	19	Biological Management of Crop diseases and Mushroom	11	01	96	35	22
7.	Dr. A. Muthukumar; Associate Professor	18	Biological control of soil and foliar borne plant pathogens	08	01	158	38	55
8.	Dr. T. Sivakumar, Associate professor	18	Biological control, IDM, Antimicrobial activity of medicinal plants against plant pathogen	10	01	42	23	00
9.	Dr. L. Darwin Christdhas Henry Associate Professor	22	Mushrooms	10	01	46	21	07
10.	Dr. J. Raja, Assistant Professor	22	Diagnosis of plant pathogens	03	00	05	01	00
11.	Dr. C. Kannan, Assistant professor	17	Biological control of Plant diseases	07	00	90	51	39
12.	Dr. T. Suthin Raj, Assistant Professor	17	Plant disease management using seaweeds	08	02	84	24	08
13.	Dr. K. Rajamohan, Assistant Professor	17	Biological control for soil borne diseases	06	01	21	14	04
14.	Mr. R. Kannan, Assistant professor	17	Biotechnology and disease management	04	00	83	52	23
15.	Dr. M. Thamarai Selvi, Assistant Professor	17	Biological disease management	05	00	18	08	04

16.	Dr. R. Sutha Raja Kumar Assistant Professor	17	Edible mushroom cultivation	05	00	45	30	05
17.	Mrs. S. Sudhasha, Assistant Professor	16	Biological control, Botanicals in plant disease management	04	00	29	12	14
18.	Dr. V. Jaiganesh, Assistant Professor	16	Rice Pathology	02	00	125	69	49
19.	Dr. S. Sanjaygandhi Assistant Professor	16	Biological control of plant disease management	05	01	54	31	21
20.	Dr. R. Udhayakumar Assistant Professor	16	Post harvest Pathology & Bio control	5	00	103	48	27
21.	Dr. L. Vengadeshkumar Assistant Professor	15	Nano science in Plant Pathology, Biopesticides in plant disease management	05	01	45	41	23
22.	Dr. S. Sundaramoorthy Assistant Professor	13	Plant Quarantine; Pl. Protection; Mycology	Nil	Nil	15	02	Nil

### Department of Soil Science and Agricultural Chemistry

S. No.	Name & Designation	Total service (Years)	Field of Specialization	Total Number of students guided		Total number of publications	Total number of Publications (2017- 2022)	
				PG	Ph.D.		Journals	others
1	Dr. M.V. Sriramachandrasekharan Professor and Head	27	Soil Fertility & Analytical Chemistry	11	3	171	48	5
2	Dr. A.Angayrakanni, Professor	33	Soil Fertility & Soil Ecology	8	3	78	10	1
3	Dr.K.Arivazhagan, Professor	30	Soil Fertility and Soil Physics	9	1	25	3	....
4	Dr. P.Poonkodi, Professor	29	Soil Fertility and Pedology	8	1	47	14	10
5	Dr. R.Singaravel, Professor	24	Soil Fertility&plant nutrition	4	4	86	3	1
6	Dr. K.Dhanasekaran, Professor	24	SoilFertility,Humus Chemistry	7	3	54	14	3
7	Dr. D.Venkatakrishnan Associate Professor	21	Soil Fertility& Environment	5	Nil	20	10	----
8	Dr. S. Srinivasan, Associate Professor	21	Soil Fertility	7	Nil	55	22	8
9	Dr. N. Senthilkumar Associate Professor	18	Soil Fertility & Environmental pollution & pesticide	6	Nil	38	18	6
10.	Dr. D. Elayaraja Associate Professor	18	Soil Fertility and Soil Biology	7	Nil	89	40	7
11	Mr. M. Rasavel, Asst. Professor	19	Soil Fertility	-	Nil	3	----	-----
12.	Dr. P. K. Karthikeyan Asst. Professor	18	Soil Fertility	6	Nil	32	22	1

13	Dr. R. Manivannan ,Asst. Professor	16	Soil Fertility& Plant nutrition	2	Nil	46	32	4
14	Dr. S. Sathiyamurthi Asst. Professor	16	Soil Fertility and GIS	3	Nil	34	19	1
15	Dr. P. Kamalakannan Asst. Professor	16	Soil Fertility	3	Nil	35	24	2
16	Dr. R. Bhuvaneshwari Asst. Professor	16	Soil Chemistry& Soil Fertility	4	Nil	43	21	3
17	Dr. T. Muthukumararaja Asst. Professor	16	Soil Fertility & plant nutrition	4	Nil	28	20	4
18.	Dr. P. Senthilvalavan Asst. Professor	15	Soil Fertility & Radioisotopes	1	Nil	72	55	15
19	Dr. K. Suhathiya, Asst. Professor	13	Soil Fertility	Nil	Nil	8	4	---

### Division of Animal Husbandry

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students Guided		*Total number of Publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
1.	Dr.R.Vijayalakshmi Professor and Head	25	Dairy Science	-	4	45	4	-
2.	Dr.R.John Christy Associate Professor	22	Animal husbandry Economics	-	-	28	13	6
3.	Dr.S.VigilAnbiah Associate Professor	22	Veterinary Pathology	-	-	77	11	1
4.	Dr.A.Varadharajan Assistant Professor	21	Veterinary Parasitology	-	-	65	35	15
5.	Dr.R.Gnanasejkar Assistant Professor	19	Veterinary Surgery	-	-	59	37	15
6.	Dr.S.Kothandaraman Assistant Professor	19	Veterinary Obstetrics &Gynaecology	-	-	49	39	14
7.	Dr.L.Murali Krishnan Assistant Professor	19	Veterinary Physiology	-	-	35	15	20

## Awards/ Recognitions & Abroad visits of the Faculty members

### Department of Agronomy

Sl. No.	Name of the Faculty	Awards/Recognitions	Countries visited & purpose
1.	Dr.Rm.Kathiresan	<ul style="list-style-type: none"> <li>• Heroes of Indian Agriculture (MSIAA 2017) Award</li> <li>• AIASA Harit Puraskar Award, 2018</li> </ul>	<ul style="list-style-type: none"> <li>• Nepal(2018)-Project discussion</li> </ul>
2.	Dr. R. Raman	<ul style="list-style-type: none"> <li>• Academic Excellence Awards 2021</li> </ul>	<ul style="list-style-type: none"> <li>• Japan (2019) - International conference</li> <li>• Srilanka (2019) - Expert member visit</li> </ul>
3.	Dr.S.Manimaran	<ul style="list-style-type: none"> <li>• Outstanding Agronomist Award by Green Agri Professional Society, Dhanbad, 2019</li> <li>• Star performer, Career college, Bhopal, MP 2021</li> <li>• Best Researcher - Weed Management, 2021</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka(2018)- International conference</li> </ul>
4.	Dr.M.Thirupathi	<ul style="list-style-type: none"> <li>• Young Scientist Award, 2019</li> <li>• Distinguished Scientist Award, 2021</li> </ul>	<ul style="list-style-type: none"> <li>• Thailand (2019) - International conference</li> </ul>
5.	Dr.P.Sudhakar	<ul style="list-style-type: none"> <li>• First price for Best poster presentation, 2017</li> <li>• Excellence in research award by Green Agri Professional Society, Dhanbad, 2019</li> <li>• Recognition Award for the services rendered in release of AU1- GSR Variety, 2021</li> <li>• National Best Scientist Award 2021 in Agronomy</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka(2018)- International conference</li> </ul>
6.	C. Kalaiyarasan	<ul style="list-style-type: none"> <li>• Best Teacher Award, 2022</li> </ul>	
7.	Dr.G.Baradan	<ul style="list-style-type: none"> <li>• Best Scientist Award 2018</li> <li>• Distinguished Scientist Award, 2019</li> <li>• Best researcher award by ICEACBS-2020</li> <li>• Best oral presentation in international e-conference, 2021</li> <li>• National Best Researcher Award 2021</li> <li>• Catch of the Day Competition Winner, 2021</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka(2018)- International conference</li> </ul>
8.	Dr.S.Babu	<ul style="list-style-type: none"> <li>• Best oral presentation award, 2019</li> <li>• Best Paper Award, 2020</li> <li>• Best Paper Award, 2020</li> </ul>	

9.	Dr.N. Ramesh	<ul style="list-style-type: none"> <li>• Best Scientist Award by PEARL foundation, 2020</li> <li>• Dr.AP.J. Abdul kalam Research excellence Award, 2021</li> </ul>	
10.	Dr. S. Ramesh	<ul style="list-style-type: none"> <li>• Outstanding Scientist award,2019</li> <li>• Best Researcher Award, 2021</li> <li>• National Best Researcher Award - 2021</li> <li>• Outstanding Agronomist Award, 2021</li> <li>• Best Scientist Award, 2022</li> </ul>	
11.	DrS.M.SureshKumar	<ul style="list-style-type: none"> <li>• Scientist of the year award, 2019</li> <li>• Best Scientist award, 2019</li> <li>• Best Scientist award, 2020</li> <li>• Best oral presentation award, 2021</li> <li>• Certificate of Star Performer, 2021</li> <li>• Best Researcher award, 2021</li> </ul>	<ul style="list-style-type: none"> <li>• SriLanka(2018)-Internationalconference</li> </ul>
12.	Dr.S. Elankavi	<ul style="list-style-type: none"> <li>• Best Researcher Award, 2020</li> </ul>	
13.	Dr. J.Nambi	<ul style="list-style-type: none"> <li>• Distinguished Scientist Award, 2018</li> <li>• Best Associate Professor Award, 2020</li> <li>• Award of Recognition, 2020</li> <li>• Scientist of the year Award, 2021</li> <li>• Best Oral Presentation Award, 2021</li> </ul>	
14.	Dr. D.KumariManimuthuVeeral	<ul style="list-style-type: none"> <li>• Best researcher Award, 2018</li> <li>• Best scientist Award, 2019</li> </ul>	
15.	Dr. K. Suseendran	<ul style="list-style-type: none"> <li>• Excellence in Research Award, 2019</li> <li>• Best Researcher Award, 2019.</li> <li>• Special Recognition under Outstanding Scientist by AIRF, 2019</li> </ul>	
16.	Dr.M. Saravanaperumal	<ul style="list-style-type: none"> <li>• Best Scientist Award, 2020</li> </ul>	
17.	Dr. R. Rex Immanuel	<ul style="list-style-type: none"> <li>• Outstanding Agronomist Award by Green Agri Professional Society, Dhanbad, 2019</li> <li>• Excellence in Research Award, Puducherry, 2020</li> </ul>	
18.	Dr. P.Stalin	<ul style="list-style-type: none"> <li>• Distinguished Scientist Award, 2019</li> <li>• Excellence in Teaching Award, 2019</li> <li>• Best Oral Presentation Award, 2019</li> <li>• Best Researcher Award, 2020</li> </ul>	
19.	Dr. P.Anandan	<ul style="list-style-type: none"> <li>• Best mentor award, 2020</li> <li>• Best oral presentation, 2020</li> </ul>	

20.	Dr. K. Arivukkarasu	<ul style="list-style-type: none"> <li>• Outstanding Scientist, 2019</li> <li>• Adarsh Vidya Saraswathi Rastriya Puraskar (National Award of Excellence 2019)</li> <li>• Best scientist Award, 2020</li> <li>• Young professional Award, 2020</li> <li>• Best Young Scientist Award, 2021</li> <li>• Best oral presentation award, 2021</li> <li>• Nation Builder Award-2021</li> <li>• National Education Excellence Acheivers Award 2022</li> <li>• Fellow- Bose science society, 2022</li> </ul>	
21.	Dr. C. Ravikumar	<ul style="list-style-type: none"> <li>• Best oral presentation, 2019</li> <li>• Best Paper Award, 2021</li> <li>• Best Faculty Award, 2022</li> </ul>	
22.	Dr.S.Jawahar	<ul style="list-style-type: none"> <li>• Best Researcher Award, 2018</li> <li>• Outstanding Scientist Award - Arunai International Research Foundation, 2019</li> <li>• International Highest Publication for the year, 2020</li> <li>• Dr. CV Raman International Innovative Research Award</li> </ul>	
23.	Dr.R.Gobi	<ul style="list-style-type: none"> <li>• Young Scientist Award by Madhumitha foundation, 2019</li> </ul>	
24.	Dr.A. Balasubramaniam	<ul style="list-style-type: none"> <li>• Excellence research Award by Madhumitha foundation, 2019</li> <li>• Best poster presentation Award, Annamalai University, 2020</li> </ul>	
25.	Dr. S. Kalaisudarson	<ul style="list-style-type: none"> <li>• Best Researcher State Award, 2019</li> <li>• Best researcher Award - Puducherry, 2020</li> </ul>	
26.	Dr. G. Siva Kumar	<ul style="list-style-type: none"> <li>• Excellence in Teaching Award, 2019</li> <li>• Best Researcher, 2021</li> </ul>	
27.	Dr.AP. Srinivasa Perumal	<ul style="list-style-type: none"> <li>• Excellence in teaching award by SIRI Society, 2019</li> <li>• Best researcher state award by Bahujana Sahitya Academy, 2019</li> <li>• Excellence in Research Award, Puducherry, 2020</li> </ul>	
28.	Dr. A. Karthikeyan	<ul style="list-style-type: none"> <li>• Best oral presentation Award - Life Science Society of Hyderabad, 2019</li> </ul>	
29.	Dr. GB. Sudhagar Rao	<ul style="list-style-type: none"> <li>• Best paper award, 2019</li> <li>• Indo Asian best agronomist award, 2020</li> </ul>	

### Department of Agricultural Microbiology

Sl.No.	Name of the Faculty	Awards/Recognitions	Countries visited
1	Dr. V.Muralikrishnan Professor&head	<ul style="list-style-type: none"> <li>Akshaya Vignan Mitra Award</li> </ul>	-
2	Dr. P.Tholkappian Former Professor&head		<ul style="list-style-type: none"> <li>Kuala Lumpur, Malaysia, International conference</li> </ul>
3	Dr.D.Stella Professor	<ul style="list-style-type: none"> <li>Best Motivator National Award</li> </ul>	-
4	Dr.S.Kalaiarasu Professor	<ul style="list-style-type: none"> <li>Award for excellence</li> <li>Outstanding biotechnologist award</li> <li>Best krishishak Award</li> </ul>	-
5	Dr.R.Elango, Professor		<ul style="list-style-type: none"> <li>University of Ulster, UK - 2022, For signing research MoU</li> </ul>
6	Dr.D.Kanchana, Associate Professor	<ul style="list-style-type: none"> <li>Women Researcher Award</li> <li>Dr. Radha Krishnan</li> <li>Best Teacher State Award</li> </ul>	-
7	Dr.G.Usharani, Associate Professor	<ul style="list-style-type: none"> <li>Excellence Service Award</li> <li>Indo Asian Distinguished Women Microbiologist Award</li> </ul>	-
8	Dr.B.Karthikeyan, Associate Professor	<ul style="list-style-type: none"> <li>Outstanding Scientist</li> </ul>	-
9	Dr.V.Prabudoss Associate Professor	<ul style="list-style-type: none"> <li>Best Educational list National Award</li> <li>Dr. B. R. Ambedkar National Award</li> <li>Dr. A. P. J. Abdul Kalam National Award</li> </ul>	-
10	Dr.S.Mahalakshmi, Asst. Professor	<ul style="list-style-type: none"> <li>Excellence in Research Award</li> </ul>	-
11	Dr.R.Parthasarathi , Asst. Professor	<ul style="list-style-type: none"> <li>PEARL- Foundation Excellent Researcher Award</li> <li>National education excellence achievers award Best book contribution award</li> </ul>	<ul style="list-style-type: none"> <li>Kuala Lumpur, Malaysia, International conference</li> <li>University of Ulster, UK - 2022, For signing research MoU</li> </ul>
12	Dr.S.Bharathiraja , Asst. Professor	<ul style="list-style-type: none"> <li>Excellence In Teaching Award</li> </ul>	-

13	Dr.S.Dinakar Asst. Professor	<ul style="list-style-type: none"> <li>Outstanding Microbiologist Award</li> <li>Young Scientist Award</li> </ul>	-
14	Dr.N.Pandeeswari Asst. Professor	<ul style="list-style-type: none"> <li>Excellence In Research Award</li> <li>Excellent Researcher in Biological Nitrogen Fixation - Salt Tolerant Rhizobium</li> </ul>	-
15	Dr.M.Vijayapriya, Asst. Professor	<ul style="list-style-type: none"> <li>Out Standing Women Scientist Award</li> <li>Dr. A. P. J. Abdul Kalam National Award</li> </ul>	-
16	Dr.G.Kumaresan Asst. Professor	<ul style="list-style-type: none"> <li>Outstanding Microbiologist Award</li> <li>Dr. A. P. J. Abdul Kalam Award for Teaching Excellence 2020</li> <li>Excellence in Teaching Award</li> </ul>	-
17	Mrs.J.Jayachitra, Asst. Professor	<ul style="list-style-type: none"> <li>Dr. A. P. J. Abdul Kalam Award for Teaching Excellence</li> <li>Best Researcher in Agricultural Microbiology</li> </ul>	-
18	Mr.K.Sivakumar Asst. Professor	<ul style="list-style-type: none"> <li>Young scientist award</li> </ul>	-
19	Dr.P.Sivasakthivelan Asst. Professor	<ul style="list-style-type: none"> <li>Young Scientist Award - 2019</li> <li>Best Young Scientist Award 2020</li> <li>Best Technical Consultant Award 2020</li> <li>Award of Appreciation- 2020</li> <li>Best Scientist Award - 2020</li> <li>Teacher Innovation Award</li> <li>Nation Builder Award 2021</li> <li>Young scientist award - 2021</li> <li>National education excellence achiever award-2022</li> <li>International research excellence award-2022</li> <li>Best oral presentation award-2022</li> </ul>	<ul style="list-style-type: none"> <li>Kuala Lumpur, Malaysia, International conference</li> </ul>

### Department of Agricultural Extension

S.No	Year of Award	Name of the Faculty	Awards/Recognitions
1	2017	Dr.P.Shanmugaraja	Best Doctoral Thesis Award
2	2017	Dr.T. Raj Pravin	Best Paper Presentation Award
3	2017	Dr.T.Raj Pravin	First prize in the state level seminar on recent trends in microbial technology
4	2017	Dr.V. Balamurugan	Best YRC Programme Office Award
5	2017	Dr.V.Balamurugan	Best YRC Programme Officer Award
6	2017	Dr.R.Muthukumar	Popular Extension Worker Award

7	2018	Dr.Santha Govind	Out Standing Achievement Award
8	2018	Dr.D.Vengatesan	Excellence in Extension Award
9	2018	Dr.P. Shanmugaraja	Best Researcher Award
10	2018	Dr.V.Sakthivel	Popular Extension Worker
11	2018	Dr.V. Sakthivel	Best Poster Award
12	2018	Dr.M. Kavaskar	Best Young scientist Award
13	2018	Dr.M.Kavaskar	Best Young scientist Award
14	2018	Dr.T. Kalidasan	Dr.Sir.C.V Raman Best Scientist Award
15	2018	Dr.R.Jayasankar	Best Oral Presentation Award
16	2018	Dr.R.Jayasankar	Best Oral Presentation Award
17	2018	Dr.R.Jayasankar	Excellence in Teaching Award
18	2018	Dr.R.Jayasankar	Excellence in Extension Award
19	2018	Dr.T. RajPravin	Best Oral Presentation
20	2018	Dr.T.RajPravin	Best Oral Paper Presentation Award
21	2018	Dr.V. Balamurugan	Scientist of the Year Award
22	2018	Dr.V. Balamurugan	Best Researcher Award
23	2018	Dr.V.Balamurugan	Scientist of the Year Award
24	2018	Dr. P. Ramesh	Best Teacher Award
25	2018	Dr.R.Muthukumar	Best Young Scientist Award
26	2018	Dr.R.Muthukumar	Best Poster Presentation Award
27	2018	Dr.R.Muthukumar	Excellence in Extension Award
28	2018	Dr.V.Kalirajan	Best Young Extension worker
29	2019	Dr. J. Meenambigai	Outstanding Women Scientist Award
30	2019	Dr.D. Vengatesan	Best Oral Presentation Award
31	2019	Dr.D.Vengatesan	Young Scientist Award
32	2019	Dr.P.Shanmugaraja	Best Oral Presentation
33	2019	Dr.P.Shanmugaraja	Excellence in Teaching Award
34	2019	Dr.V.Sakthivel	Excellence in Teaching Award
35	2019	Dr.M.Kavaskar	Outstanding Extension Worker Award
36	2019	Dr. T. Kalidasan	Excellence in Research Award
37	2019	Dr. T. Kalidasan	Dr. A.P.J. Abdul Kalam National Award
38	2019	Dr.R.Jayasankar	Outstanding Extension Worker Award
39	2019	Dr.R.Jayasankar	Best Oral Presentation
40	2019	Dr.R.Jayasankar	Best Oral Presentation
41	2019	Dr.R.Jayasankar	Outstanding Faculty in Agricultural Sciences

42	2019	Dr.V.Balamurugan	Best Researcher National Award
43	2019	Dr.V.Balamurugan	Excellence in Teaching Award
44	2019	Dr. T. Balakrishnan	Best Young Scientist Award
45	2019	Dr. P. Ramesh	Popular Extension Worker
46	2019	Dr. P. Ramesh	Excellence in Extension Award
47	2019	Dr. P. Ramesh	Dr.B.R.Ambedkar National
48	2019	Dr. B. Sudhakar	Best Paper Award
49	2019	Dr. B. Sudhakar	Excellence in Teaching Award
50	2019	Dr.R.Muthukumar	Popular Extension Worker Award
51	2019	Dr.R.Muthukumar	Best Poster Presentation Award
52	2019	Dr.R.Muthukumar	Popular Extension Worker Award
53	2019	Dr.V.Kalirajan	Excellence in Teaching Award
54	2019	Dr.V.Kalirajan	Young Scientist Award
55	2019	Dr. T. Sujaivelu	Excellence in Extension Award
56	2019	Dr.Darling B. Suji	Best Oral Presentation Award
57	2019	Dr. Darling B.Suji	Popular Extension Worker Award
58	2020	Dr. J. Meenambigai	Distinguished Women in Agricultural Sciences
59	2020	Dr.T. Kalidasan	Best Oral Presentation Award
60	2020	Dr.Darling B. Suji	Best Young Scientist Award
61	2021	Dr.V.Sakthivel	Best Extension Scientist Award
62	2021	Dr.V.Sakthivel	Dr. APJ. Abdul Kalam Research Excellence Award
63	2021	Dr.M.Kavaskar	Dr. M.S. Swaminathan Research Excellence Award
64	2021	Dr.M.Kavaskar	Distinguished Scientist Award
65	2021	Dr.M.Kavaskar	Publication of Proceedings
66	2021	Dr.R. Jayasankar	Best Oral Paper
67	2021	Dr.V. Balamurugan	Dr. M.S. Swaminathan Research Excellence Award
68	2021	Dr.V. Balamurugan	Best Teacher Award
69	2021	Dr.DarlingB.Suji	Young scientist
70	2022	Dr. J. Meenambigai	Best Oral Presentation Award
71	2022	Dr. J. Meenambigai	Best Women Academician of the Year Award
72	2022	Dr.V.Sakthivel	Best Paper Award
73	2022	Dr.V. Balamurugan	Best Oral Presentation Award

### Department of Agricultural Economics

Sl. No.	Name of the Faculty	Awards / Recognitions
1.	Dr. K.R. Sundaravardarajan	Best Agricultural Trainer, 2019
2.	Dr. K.R. Sundaravardarajan	Doctor Issac Award, 2019
3.	Dr. C. Prabakar	World Intellectual Property Accreditation Ingenious Award, 2021

### Department of Entomology

Sl. No.	Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
1.	Dr.V.Selvanarayanan, Professor	<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Fellow of Plant Protection Association of India since 2010</li> <li>• Active member of the Group on Plant Resistance to Pests, Kansas, U.S.A. since 2012</li> </ul>	
2.	Dr.S.Manickavasagam, Professor (Retired on June 30, 2022)	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Researcher award - 2017-18</b> by Annamalai University</li> <li>• <b>Rao Sahib Dr. T. V. Ramakrishna Ayyar memorial award 2021</b> for contribution in the field "Taxonomy of Parasitic Hymenoptera"</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Visiting Scientist, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing, Republic of China, Nov.2003 to January, 2004</li> <li>• Common Wealth Academic Staff Fellowship, 2007- 2008 at Natural History Museum, London</li> <li>• Commonwealth Academic Staff Fellowship-2007 from 3<sup>rd</sup> Sep.2007 to 2<sup>nd</sup> March 2008 (At Natural History Museum, London, UK)</li> <li>• Fellow of the Royal Entomological Society (<b>FRES</b>) UK - since 2008</li> <li>• Fellow of The Entomological society of India (<b>FESI</b>) - since 2009</li> <li>• Fellow of the Plant Protection of Association of India (<b>FPPAI</b>) since 2010</li> <li>• Chair Person, Twenty Second Annual Congress, 2010 University of</li> </ul>	<ul style="list-style-type: none"> <li>• Attended 5<sup>th</sup> International Entomophagous insects Conference held at Kyoto, <b>Japan</b>, 16-20 October 2017</li> </ul>

Sl. No.	Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
		Peradeniya, Sri Lanka <ul style="list-style-type: none"> <li>• Best Poster Award at National Conference held at Arunachal Pradesh, 2014</li> </ul>	
3.	Dr.S.Arivudainambi, Professor and Head	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>SrilochaniVaradarajalu Endowment Incentive Award</b> (publication), 2010 by Annamalai University.</li> <li>• <b>Best Faculty Award</b>, 2014 by EET CRS Academic Brilliance rating Agency, New Delhi.</li> <li>• <b>Best Researcher Award</b> (grants), 2018 by Annamalai University</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Expert member, 2006 -2010 -ETC- COMPAS (Partners- Bolivia, Guatemala, Nicaragua, Peru, Colombia and Chile; Ghana, South Africa, Zimbabwe, Tanzania, Uganda, Togo, Benin; India, Sri Lanka, Netherlands and Switzerland).</li> </ul>	<ul style="list-style-type: none"> <li>• Nepal, 2018- DBT, BIRAC - meeting</li> </ul>
4.	Dr.T.Selvamuthukumaran, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Researcher Award</b> (grants), 2021 by Annamalai University</li> </ul>	<ul style="list-style-type: none"> <li>• Hungary, 2018 - Annual meeting &amp; Chemical Ecology conference</li> </ul>
5.	Dr. C. Kathirvelu, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Young Scientist Award</b> 2018- In-recognition of service to the field of Entomology by The Society of Tropical Agriculture, New Delhi</li> <li>• <b>Outstanding Entomologist Award</b> 2019 -In appreciation to the contribution to the field of Entomology by Madhumitha Foundation, Telangana State</li> </ul>	
6.	Dr.R. Kanagarajan, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Young scientist award</b>, The society of Tropical Agriculture 29<sup>th</sup> June 2018</li> <li>• <b>Excellence in Research Award</b>, Science&amp; Tech. Society for integrated rural improvement 24<sup>th</sup> February 2019</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Associate NCC Officer Award, 2014 &amp; 2015</li> <li>• Best presentation (III Prize) in Refresher course in "organic pest control" held at Dept of Entomology Annamalai university</li> </ul>	

Sl. No.	Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
		during Jan 21st to Feb, 10th 2008 <ul style="list-style-type: none"> <li>Best oral presentation award - Contemporary approaches in biological science for food, health, nutrition security and conservation of biodiversity 26 and 28 Jan 2021</li> </ul>	
7.	Dr.R. Ayyasamy, Associate Professor	<b>Awards</b> <ul style="list-style-type: none"> <li><b>Outstanding Scientist Award</b>, The Society of Tropical Agriculture, New Delhi, 28/Jun/2019</li> <li><b>Scientist Award</b>, B.Vasantharaj David Foundation, Chennai, 17Nov. 2019</li> </ul> <b>Recognition</b> <ul style="list-style-type: none"> <li>Best Poster Presentation, 2018 - Indian Institute of Natural Resins and Gums, Ranchi</li> </ul>	<ul style="list-style-type: none"> <li>U.S.A.-5-8/Nov/2017-To attend 65<sup>th</sup> Annual meeting of Entomological Society of America</li> </ul>
8.	Dr.R.Kannan, Associate Professor	<b>Recognition</b> <ul style="list-style-type: none"> <li>I Prize – Poster Presentation-In: National Seminar on “Advances In Plant Science Research” (Apsr-2019). Held in Department of Botany, AnnamalaiUniversity, February 27 &amp; 28, 2019</li> <li>Best Poster Award - II Position for Poster Presentation in the Session - IPM1) -In: XIX International Plant Protection Congress (IPPC 2019) on “Crop Protection to Outsmart Climate Change for Food Security &amp; Environmental Conservation” held in Hyderabad, Telengana, November 10 and 14, 2019</li> </ul>	
9.	Dr.V.Sathyaseelan, Associate Professor	<b>Awards</b> <ul style="list-style-type: none"> <li><b>Gold medal</b> on World 2000 Millennium Summit organized by International Association of educators for world peace (IAEWP)- Eight International Environment Congress- New Delhi</li> <li><b>Young Scientist award</b>, 2006 by National Environmental Society and Academy</li> <li><b>Gold Medal &amp; Junior Scientist Award</b> for the year 2006</li> <li><b>Distinguished Scientist Award</b> – 2018 received from Science &amp; Tech Society for Integrated Rural Improvement, Warangal, Telenganaa</li> <li><b>Outstanding Entomologist Award</b> -2019 received from United Lightning Vision Association, Bengaluru, Karnataka</li> </ul>	<ul style="list-style-type: none"> <li>First International Conference on Food,Agriculture&amp; Innovations June 19th-23rd, 2019, Bangkok, Thailand</li> </ul>

Sl. No.	Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
		<b>Recognition</b> <ul style="list-style-type: none"> <li>Best Poster Presentation Award – 2018, national conference on Doubling farmers income for sustainable and Harmonious Agriculture - IINRG, IIAB, ICAR RCER , Ranchi, Jharkhand.</li> </ul>	
10.	Dr.Chand Asaf, Assistant Professor	<b>Awards</b> <ul style="list-style-type: none"> <li><b>Best Scientist Award</b> -Murray State University, Kentucky, USA &amp;Centre for Environment and Agricultural Development, Pondicherry. 2020</li> <li><b>Best Researcher Award</b> - United Lightning Vision Association - 2019</li> <li><b>Scientist of the year Award</b>, Astha Foundation. 2019</li> </ul> <b>Recognition</b> <ul style="list-style-type: none"> <li>Best group teacher, 2008 by Faculty of Agriculture Best presentation award, Centre of Advanced Studies in Marine Biology and GOI, ICSSR &amp; DBT, New Delhi. 2019</li> <li>Best poster presentation, ULV Association@ ICFAI, Thailand. 2019</li> <li>Best oral presentation award - AIASA - Tamil Nadu and Faculty of Agriculture, Annamalai University. 2019</li> <li>Keynote Speaker Award - Green Agri Professional Society, Dubai, United Arab Emirates. 2020</li> </ul>	<ul style="list-style-type: none"> <li><b>Thailand</b> - ULV Association@ ICFAI<i>International Conference</i>”, Bangkok-Pattaya,Thailand, 19-23 Jun 2019</li> <li><b>Dubai</b> -<i>International conference on Food, Health, Agriculture innovations</i>”, Dubai, UAE, 5-9 Mar 2020</li> </ul>
11.	Dr.N. Muthukumaran, Assistant Professor	<b>Awards</b> <ul style="list-style-type: none"> <li><b>Srilochanivaradarajulu endowment prize</b> 2018 - Annamalai University</li> <li><b>Young scientist award</b> -2018-7<sup>th</sup> International conference on Agriculture, Horticulture and Plant science held at shimla</li> <li><b>Excellence in Research Award</b> - 2019 -National conference on Farmers orientation towards climate change and up gradation to sustainable agriculture held at National college Trichy</li> <li><b>Best young teacher award</b> - 2019- 6<sup>th</sup> Biopesticide international conference, BIOCICON 2019 Organised by Amity University</li> <li><b>Agricultural Scientist Award</b> - 2021- Significant contribution to Agricultural Entomology with focus on Insect Plant Interactions</li> </ul>	

Sl. No.	Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
		<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best oral presentation award – 2020 -International conference on Recent trends in Agriculture towards food security and rural livelihood</li> <li>• Best Oral Presentation Award – 2022 -National Seminar on Revitalizing soil health through natural resource management in a climate change Era</li> </ul>	
12.	Dr.M.Senthilkumar, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Outstanding Achievement Award</b>-in the field of Insect mycology from Asthafoundation,Meerut , 2019</li> </ul>	
13.	Dr.T.Nalini, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Women Young Scientist Award</b> in Entomology - 2019 PEARL Foundation for Educational Excellence</li> <li>• <b>Scientist Award</b>- 2020 in appreciation of contributions to Agricultural Entomology and Higher Education - 2020 Dr. B. Vasantharaj David Foundation</li> <li>• <b>Best Researcher Award</b> -2021 Research Grants Generated Through Sponsored Research Projects during 1 Jan - 31 Dec from Annamalai University</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Certificate of Completion of module on Impact Factor and bibliometric indicators - 2018 Researcheracademy.com , Elsevier</li> <li>• Fellow of Society for Biocontrol Advancement - 2019 Society for Biocontrol Advancement</li> <li>• Certificate of appreciation in recognition of significant contribution as peer reviewer - 2019 Biodiversitas, Journal of Biological Diversity</li> <li>• Elsevier Advisory Panel - 2019 ELSEVIER   Research Networks</li> <li>• Chairperson in International conference on Current Immunological tools for biodiversity and status of environmental health - 2019 CAS, GOI, ICSSR, DBT</li> <li>• Certificate of excellence in reviewing - 2020 Asian Journal of Research in Crop Science</li> </ul>	

Sl. No.	Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
		<ul style="list-style-type: none"> <li>• Peer reviewer - 2020 Indian Journal of Experimental Biology</li> <li>• Top reviewers on publons (manuscripts reviewed in last 12 months)- 2020 Indian Journal of Experimental Biology</li> <li>• Peer reviewer expert- 2021 Planta (Springer)</li> <li>• Editor-In-Chief-International Journal of Agriculture Science (VITP-IJAGS) (from 19.10.2021)</li> <li>• Editor-In-Chief -International Journal of Agricultural Biotechnology (VITP-IJAB) (from 19.10.2021)</li> <li>• Editorial Member- International journal of Vegetable Science (VITP-IJVSC) (from 19.10.2021)</li> <li>• Editorial Member- International Journal of Plant Biology (VITP-IJPB) (from 19.10.2021)</li> <li>• Editorial Member- International Journal of Agricultural Development and Policy (VITP-IJADP) (from 19.10.2021)</li> <li>• Certificate of excellence in reviewing - 2021 from Asian journal of agricultural and horticultural research</li> <li>• Certificate of excellence in peer-reviewing - 2021 from Uttar Pradesh journal of zoology</li> <li>• Certificate of excellence in reviewing - 2021 from South Asian Journal of Parasitology</li> <li>• Reviewer Excellence Award- in Agricultural Science Digest-Agricultural Research Communication Center (ARCC) journals (29.11.2021)</li> <li>• Certificate of appreciation for Reviewer in International Journal of Agricultural sciences 20.2.2021</li> <li>• Certificate of excellence in reviewing - 2021 from International journal of plant and soil science</li> <li>• Certificate of excellence in peer-reviewing from Journal of Basic and Applied Research International - 28.5 .2021</li> <li>• Reviewer in Agricultural Research Communication Center (ARCC) journals (19.5. 2021)</li> </ul>	
14.	Dr. M. Pazhanisamy, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Distinguished Scientist Award</b> - 2018 received from Science</li> </ul>	<ul style="list-style-type: none"> <li>• Bangkok, Thailand -Paper presentation, June 19th-23rd,</li> </ul>

Sl. No.	Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
		&Tech Society for Integrated Rural Improvement, Warangal, Telenganaa <ul style="list-style-type: none"> <li>• <b>Young scientist Award</b> - 2019 received from united lightning Vision Association, Karnataka</li> </ul> <b>Recognition</b> <ul style="list-style-type: none"> <li>• Best Oral Presentation Award - 2018 received from national conference on Doubling farmers income for sustainable and Harmonious Agriculture organised by IINRG, IIAB, ICAR RCER, Ranchi, Jharkhand.</li> <li>• Best Oral Presentation Award-2022 received from national conference on Revitalizing Soil Health Through <i>Natural Resource Management in a climate change era</i> (RSHNRM,21) organized by Department of Soil science Agricultural Chemistry, Faculty of Agriculture, Annamalai University.</li> <li>• Best Oral Presentation Award-2022 received from national conference on <i>Transforming Agricultural Extension Systems towards Achieving Food and Nutritional Security</i> organised by Department of Agricultural Extensions, Faculty of Agriculture, Annamalai University.</li> </ul>	2019

### Department of Genetics and Plant Breeding

Sl. No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
1	Dr.S.Murugan	Visiting Professor, North Carolina State University (2017) Fellow of Indian Society of Genetics and Plant Breeding, New Delhi	U.S.A , Water melon and cucumber breeding, North Carolina State University, U.S.A
2	Dr. G. Sathyanarayanan	Excellence in Research Award (2017)	S & T SIRI, Telangana
3	Dr. M. Prakash	Best research publications award, 2012-2017. J J Chinoy Gold Medal Award- Indian Society of Plant Physiology, 2017. Fellow - Indian Society of Plant Physiology, New Delhi, 2015. (FISPP). Fellow - National Academy of Biological Sciences, Chennai. 2016 (FNABS).	
4	Dr.S.Thirugnanakumar	Fellow of Indian Society of Oil Seed Research, Fellow of HIND AGRI-HORT Society. ICAR Citation for best Thesis award 2007	

Sl. No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
		Dr.Kannaiyan endowment – Best researcher award -2018	
5	Dr.R. Anandan	Best oral presentation award (2017)	National Conference on Innovations in Biotechnology at Madurai Kamaraj University during 14 <sup>th</sup> & 15 <sup>th</sup> Dec., 2017.
6	Dr. T. Sabesan	Editorial Board Member (2017 onwards)	Journal of Innovative Agriculture (eISSN: 2394-5389)
7	Dr. R.Eswaran	Summer course on “Modern Breeding Techniques for the Improvement of leguminous plants” (2017).	Institute of plant biotechnology for developing countries , Ghent University , Belgium
8	Dr. K.R. Saravanan	Scientist of the year award (2018)	ICFA, Jharkand
9	Dr. K.R. Saravanan	Outstanding Breeder Award (2019)	PRAGATI, Jharkand
10	Dr. S. Murugan	Member, Panel of Examiners, TamilNadu Public Service Commission (TNPSC) ( 2019)	
11	Dr. T. Sabesan	Confidential work at TamilNadu Public Service Commission (TNPSC), Chennai (2019)	(TNPSC), Chennai
12	Dr. M. Venkatesan	Best Oral Presentation award (2019)	University of Hyderabad
13	Dr. S. RanjithRajaram	Best Oral Presentation (2019)	PRAGATI, Jharkhand
14	Dr.T.Sabesan	Best paper Award (First Place) in the session Genetics (2020)	In the 6 <sup>th</sup> National Conference in Agricultural Scientific Tamil held International Institute of Tamil Studies, Chennai during Dec 21-22, 2020.
15	Dr.B. SunilKumar	Outstanding Scientist Award (2018)	Conferred by the Society of Tropical Agriculture, New Delhi
16	Dr. G. Sathyanarayanan	Best Researcher Award (2020)	ICEACBS, Puducherry
17	Dr. M. Venkatesan	Best Scientist Award (2020)	ICEAACBS, Puducherry
18	Dr. S. Thirugnanakumar	Editorial member for the journal “Advances in Plant Sciences”	
19	Dr. T. Sabesan	Reviewer Excellence Certificate (2020)	<i>ActaEcologicaSinica</i> (Elsevier), (ARCC)
22	Dr. S. RanjithRajaram	Academic Excellence Award (2021)	Institute of Researchers, Wayanad, Kerala
23	Dr. M. Venkatesan	Best Teacher Award (2021)	Global Management Council, Ahmadebad
24	Dr. Y. Anbuselvam	Reviewer Excellence Award (2021)	ARCC Journal
25	Dr. T. Sabesan	Excellence in Reviewing (2022)	International Journal of Plant & Soil Science
26.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Asian Journal of Biotechnology and Genetic Engineering
27.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Current Journal of Applied Science and Technology
28.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	International Journal of Environment and Climate Change
29.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	Annual Research and Review in Biology

Sl. No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
30.	Dr. S. Vennila	Best Oral Presentation (2018)	Dept. of Genetics and Plant Breeding, Faculty of Agriculture, Annamalai University
31.	Dr. S. Vennila	Best Oral Presentation (2020)	Dept. of Plant Pathology, Faculty of Agriculture, Annamalai University
32.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University
33.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Agrl. Extension, Faculty of Agriculture, Annamalai University
34.	Dr. G. Sathiyarayanan	Best Poster Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University

### Department of Horticulture

S. No	Name of the faculty	Awards
1.	Dr. K. Haripriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	1. Subject matter Specialist in selection committee, ICAR- National Research Centre for Banana 2. Trichirapalli. 09.04.2021 3. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 22.06.2021 4. External expert member, expert committee for re-structuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021 5. Board of studies in Agriculture - (GRI), Gandhigram Rural Institute, Gandhigram, Dindigul. 2021-2024 6. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019
3	Dr. A. Anburani	1. APSI Honours award by Academy in Plant Sciences, India. 2. Best oral presentation award at international symposia, Hyderabad.
4	Dr. S. Anuja	1. Received best paper award, Annamalai University. 2. Received certificate of achievement award.
5	Dr. S. Rameshkumar	Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu
6	Dr. J. Samruban	1 <sup>st</sup> poster presentation award in 9 <sup>th</sup> Indian Horticulture congress 2021, Kanpur
7	Dr. R. Kandasamy	Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry
8	Dr. CT. Sathappan	Fellow of National Gladiolus Trust.

9	Dr. S. Venkatesan	<ol style="list-style-type: none"> <li>1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Utterpredesh, India. On the occasion of International Conference on GRISAAS- 2019</li> <li>2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Utterpredesh, India. On the occasion of International Conference on GRISAAS- 2019.</li> <li>3. Best Horticulturalist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</li> <li>4. Best oral presentation Award- 3<sup>rd</sup> National Conference on Promoting &amp; Reinvigorating Agri – Horti, Technological Innovations (24<sup>th</sup>&amp; 25<sup>th</sup> December, 2019) held at Danbad Jharkhand, India.</li> <li>5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment(VOICE) &amp; Pondicherry Institute of Agricultural Sciences( PIAS ) in Association with Murray State University, USA. Supported by Centre for Environment &amp; Agricultural Development(CEAD)- 2020</li> <li>6. Excellence in Research award-3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup>ICFAI ), December 26 – 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</li> <li>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup>ICFAI ), December 26 – 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</li> <li>8. Best Horticulturist Award- Agricultural&amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> InternationalConferenceOnGlobal Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</li> <li>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</li> <li>10. Best Poster Award- Two days DST PURSE – II Sponsored National conference on “Transforming Agricultural Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 &amp; 22, 2022.</li> </ol>
10	Dr. R. Sendhilmathan	<ol style="list-style-type: none"> <li>1. Awarded Best poster presentation. in 21<sup>st</sup>centuary (NSPOFED –in 21<sup>st</sup>centuary. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of8agriculture and animal sciences, Gandhigram Rural In9titute, Dindigul.</li> <li>2. Excellence in Research award for outstanding contribution in the field of “Floriculture and landscape gardening” at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019</b>at ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India.</li> <li>3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.</li> </ol>
11	Dr. S. Madhavan	Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources
12	Dr.P.Madhana Kumari	<ol style="list-style-type: none"> <li>1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry</li> <li>2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.</li> </ol>
13	Dr. T. Uma Maheswari	1. Best oral presentation award- AIASA, 2020

		2. Best women scientist award- ICEACBS, Puducherry, 2020
14	Dr. D. Dhanasekarn	1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018) 2. Best Oral Presentation IInd Prize, NABS Conference, Pondicherry (2019) 3. Young Scientist Award, National Gladiolus Trust (2020) 4. Best Oral Presentation, IIIrd Prize, First NABS (2021) 5. Best Oral Presentation IInd Prize, 7th National Youth Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA, TNAU & ICAR, Coimbatore, 24-25 March, 2022
15	Dr. S. Kumar	1. Best oral presentation award- 3 <sup>rd</sup> ICFAI, Jharkhand. 2. Excellence in teaching award- ICEACBS, Puducherry, 2020
16	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
17	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry
18	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy - 2019. Thangavur. 2. Best faculty award in horticulture - CNRTSPA 2019- William research award, Kanyakumari

### Department of Plant Pathology

Sl.No	Name of the faculty	Year	Awards	Venue	National/ International
1.	Dr. A. Muthukumar	2017	Best Researcher Award	IRDP Group of Journals, Uttar Pradesh	National
2.	Dr. A. Muthukumar	2017	Excellence in Research Scientist Award	International Conference on ABCD, Advances in Agricultural and Bio- diversity conservation for sustainable development, Uttar Pradesh	International
3.	Dr. A. Muthukumar	2017	Best poster presentation Award	Annamalai University	National
4.	Dr. S. Sundaramoorthy	2017	Member in Expert Committee on Invasive Alien Species	National Biodiversity Authority, Chennai	National
5.	Dr. P. Renganathan	2018	Excellence in Research Award	Endling conferences society & ICFA, Jhanbad, Jharkhand	International
6.	Dr. L. Darwin Christdhas Henry	2018	Outstanding Pathologist Award	International conference on interdisciplinary research Technology, Thailand	International
7.	Dr. S. Sundaramoorthy	2018	Member in Expert Committee on Invasive Alien Species	National Biodiversity Authority (NBA), Chennai	National
8.	Dr. S. Sundaramoorthy	2018	In charge of Ramanad District, Krishi Kalyan Abhiyan (KKA) accomplishment	Krishi Kalyan Abhiyan (KKA) accomplishment, Ramnad, Tamil Nadu	National
9.	Dr. C. Kannan	2019	Outstanding Pathologist Award	National College, Trichy	National
10.	Dr. P. Balabaskar	2019	Best researcher award for Grant Generation	Annamalai University	National
11.	Dr. P. Renganathan	2019	Distinguished Scientist Award	ASTHA foundation	International

12.	Dr. T. Suthinraj	2019	Excellence in Teaching Award	& ICAR- (GRISAAS) 3 <sup>rd</sup> International conference on GIASE-2019, Tribhuvan University, NEPAL	International
13.	Dr. T. Suthinraj	2019	Best Presentation Award	International conference on current immunological tools for biodiversity and status, CAS in Marine Biology, Annamalai University	International
14.	Dr. V. Jaiganesh	2019	Excellence in Research Award	Award- National college, Trichy	National
15.	Dr. V. Jaiganesh	2019	Best Young Teacher Award	AMITY University, Raipur	National
16.	Dr. L. Vengadeshkumar	2019	Best oral presentation award	Amity University, Raipur	International
17.	Dr. S. Sundaramoorthy	2019 - 2020	Successfully accomplished the Locust Control Operation in Scheduled Desert Area (SDA) in Rajasthan and Gujarat	Desert Area (SDA) in Rajasthan and Gujarat, Jodhpur	National
18.	Dr. K. Sanjeevkumar	2020	Best Scientist Award	National conference on SUMMIT-2020 (Science, Medicine, Agriculture, Research and Technology) Bangalore, India	National
19.	Dr. L. Vengadeshkumar	2020	Best oral presentation award	Periyar University	National
20.	Dr. T. Suthinraj	2021	Innovative Article Award	Agriculture and Food e- Newsletter, New Delhi	National
21.	Dr. V. Jaiganesh	2021	Young Agricultural scientist Award	Dr. B. Vasantharaj David Foundation, Chennai.	National

### Division of Animal Husbandry

Sl.No	Year of Award	Name of the staff	Award
1.	2018	Dr.S.Kothandaraman	Best oral presentation award
2.	2019	Dr.S.Kothandaraman	Best paper award
3.	2019	Dr.L.Murali Krishnan	Best oral presentation award
4.	2019	Dr.L.Murali Krishnan	Eminent Faculty Award
5.	2019	Dr.L.Murali Krishnan	Best Paper Award,

6.	2020	Dr.L.Murali Krishnan	Best Oral Presentation Award
7.	2020	Dr.L.Murali Krishnan	Best Scientist Award
8.	2020	Dr.L.Murali Krishnan	Best Oral Presentation Award
9.	2020	Dr.S.Kothandaraman	Best oral presentation award
10.	2022	Dr.S.Kothandaraman	Best oral presentation award

### 6.5.2.4 Technical and Supporting Staff

Department	Number of Staff			
	Supporting staff	Technical staff	Field staff (Farm workers/ Gardeners)	Total
Deans office	11	23	65	99
<b>Departments of study</b>				
Agronomy	2	13	77	92
Agricultural Economics	1	0	2	3
Agricultural Extension	1	0	2	3
Agricultural Microbiology	3	4	5	12
Entomology	2	2	7	11
Genetics & Plant Breeding	3	4	3	10
Horticulture	3	4	41	48
Plant Pathology	1	2	5	8
Soil Science & Agrl. Chem.	1	5	7	13
Animal Husbandry	1	2	15	18
<b>Administrative staff</b>				
Establishment (Personnel Dept)	4	0	2	6
Hostels	31	5	53	89
Examinations	8	3	2	13
Directorate of Academic Research (DARE)	1	0	0	1
Directorate of Research (DRD)	1	0	0	1
B Section	1	0	0	1
D1 section(Accounts)	1	0	1	2
E Section	1	0	0	1
H section (Scholarships)	1	0	0	1
Directorate of Admissions	1	0	1	2
<b>Total</b>	<b>79</b>	<b>67</b>	<b>288</b>	<b>427</b>

### 6.5.3. LEARNING RESOURCES

#### 6.5.3.1.College Library (Digital)

##### Central Library

Sir C.P.Ramasamy Aiyar Library, the Central Library of Annamalai University, with its hoary past dating back to 1920s and its housing, in 1959, in the present iconic building designed by internationally reputed architects namely Messers. Prynne, Abbot, and Davis, is the hear and soul of the University. The system in the library is dynamic and progressive accommodating changes even as its traditional riches are kept intact. The library facilities and services are regularly updated to keep pace with the changing needs and emerging trends. Integrated Library Management System (ILMS) The central library has been automated through an ILMS- the NIRMALS from as early as 2005-06. The software was developed by the NICE - Nirmal Institute of Computer Expertise, Tiruchirappalli. The NIRMALS- Network Information Resources Management of Academic Library System - is a complete Library Management Software capable of managing all the functionalities of the library and dissemination of information. It is used to manage stock taking, circulation of their collections and other traditional housekeeping operations. It works on Client/Server windows-

based RDBMS software. The following are some of the salient features: 1.The NIRMALS supports Multi-Users Environment and Multi-Location Web Interface 1.It follows and allows to standards such as MARC 21, ISBD/ISDS, AACR2, ISBN, Language Codes ISO 639:1988, Country Codes ISO 3166, ISO 2709 format for data input. 1.It represents 140 universally recognized languages through Unicode UTF- 8 without giving room for language barriers. 1.It supports all standard search features including user interactive module for Boolean Search 1.Selective Dissemination of Information (SDI) Service, In-built Barcode software and printing various kinds of reports, which covers all the reporting parts of a library administration and management, are available.

### Faculty Library

The Faculty Library provides quick and easily accessible learning resources. It has a reading section to meet the demands of users preparing for civil service examinations and other entrance examinations such as CAT, ICAR, AIIEA, ASRB, AO and Banking Exams. Four computers with internet connectivity are provided to students and faculties who avail library services during working hours Facilities are.

- (1) Circulation Service (Issue, Return & Nil arrears)
- (2) Wi-Fi Access
- (3) INFLIBNET (e-journal)
- (4) AGRICOLA - online database access
- (5) Web OPAC through LAN based
- (6) Institutional Repository Service through main library
- (7) Orientation/ user education Programmes
- (8) CeRA- Consortium for e-Resources in *Agriculture* (CeRA)
- (9) AGORA - Access to Global Online Research in Agriculture

### RFID Library Management System

At present, the Faculty Library has entirely digitized the library management by adopting RFID (Radio Frequency Identification) technology. Cataloguing, issue and return of books are made easier through this modern, need-of-the-hour technology. Further, scholars can check the availability of books and other resources through the Digital Touch Screen Kiosk system available. MyLOFT Remote Access The e resources available in the library can remotely be accessed through MyLOFT (My Library on Finger Tips) application

Name of the ILMS software	Nature of automation (fully or partially)	Version	Year of automation
Nirmals	Fully	3.1.5	2005-06
RFID	Fully	2cqr	2019-20
MyLOFT	Fully	-	2019-20

Digitization Process Sir. C.P Ramasami Aiyar Library has been digitizing 782 bundles of palm leaf collections, with 1,37,548 individual leaves, and they are to be uploaded in the university website for free access and download by the stakeholders. With the support of Directorate of Public Libraries, Tamil Nadu, the Central Library has initiated the digitization of 5524 rare works available

in the library (that were published before 1930) in Tamil and English. The digitized version of rare volumes and palm leaves will be made available for open access in the University Website and in Tamil Nadu Digital Library website.

Sl. No.	Details	University Library	Faculty Library
1.	Total area (sq. m.)	4515	97.54
2.	Total Seating capacity	1000	50
3.	<b>Working hours</b>		
	Week days	8.00 am to 8.00 pm	8.30 am to 8.30 pm
	Holidays and Sundays	9.30 am and 5.00 pm	9.30 am and 1.00 pm
4.	Books and monographs	243268	17,659
5.	Bound volumes of Journals and Bulletins	16032	920
6.	PG and Ph.Dtheses	10976	2880
7.	Reports and other reference materials	14,666	National -15 International- 04
8.	Average number of books added during last five years	7138	466
9.	<i>Electronic Resources (e-books, e-journals, e-abstracts, e-databases and e-theses and video/CD library)</i>	5496	Intra net facility
10.	Magazines and Newsletters		20

#### Learning Resources in Different Departments in the Faculty of Agriculture

Department	Books	Journals	CDs	Charts/ software	Videos	Thesis PG/PhD	Wi-Fi / Internet connections
Agronomy	1477	27	91	-	-	614/76 DSc.1	8
Agricultural Economics	311	4	132	-	-	201/19	3
Agricultural Extension	149	4	10	-	4	256/39	25
Agricultural Microbiology	924	10	5	5	48	200/60	12
Entomology	547	20	9	28	32	371/33	12
Genetics and Plant Breeding	623	94	-	-	-	503/66	11
Horticulture	216	12	-	4	5	368/43	10
Plant Pathology	418	12	-	-	-	308/35	6
Soil Science & Agrl. Chemistry	909	15	45	50	5	147/26 4	12
Animal Husbandry	54	3	5	-	-	3	2

Computers in each department have been connected with intranet and provided with high-speed internet facility. These networked computers are facilitated to access UGC inflibnet e journal portal and other portals of UGC.

#### 6.5.3.2. Laboratories, Instructional farm, Workshops, Dairy Plant, Veterinary Clinic, Hatchery, Ponds etc.

The faculty has adequate laboratories and field facilities to offer practical exposure. The farm unit including field, orchard and gardens are used for field based practical demonstrations and crop production. The engineering departments provide practical exposure on survey, hydraulics', farm machinery and post-harvest technology.

### Land resources available in the faculty of Agriculture

Land resources	Area (ac)
Wetland	137.35
Sewage farm	9.32
Garden land	38.25
Orchard, OP orchard, Floriculture and Medicinal Plant unit, New area	63.07
Gardens, Tree Plantations, Play grounds, Hostels, Buildings	59.73
<b>Total</b>	<b>307.72</b>

All the laboratories have sufficient space, infrastructural facilities and consumables. There are farm land, orchards, poly-houses, shade-net house, apiary, sericulture unit, insectary, bio-pesticide production unit, potculture yard, mushroom shed, glass house and dairy unit.

### Divisions/Departments/Sections - Requirements (UG)

S. No.	Details	ICAR Requirement		No. of Rooms	Available	
		No. of Rooms	Dimensions (in ft.)		Dimensions (in ft.)	
1	Laboratories (UG)	12	30 x 60 Larger department will have two	Agronomy	11	19' X 18' 30' X 20' 30' X 20' 18' X 14' 34' X 19'- 4nos 40' X 30' 18' X 15' 21' X 18'
				Agricultural Economics	1	39' X 29'
				Agricultural Extension	1	30' X 42'
				Agricultural Microbiology		19' X 49'-1 20' X 30'-1
				Entomology	2	38' X 30' 37' X 31'
				Genetics & Plant Breeding	3	30' X 36' 30' X 21' 30' X 21'
				Horticulture	4	40' X 30' 34' X 19'-3nos
				Plant Pathology	3	42' X 25' 36' X 25' 42' X 30'
				Soil Science and Agricultural Chemistry	4	19' X 33' 31' X 67' 30' X 29' 38' X 24'
				Animal Husbandary (Division)	2	30' X 22' 47' X 28'

2	Field Lab. /Stores	5	1. Agronomy 2. Gen.&Pl. Breeding 3. Soil Science 4. Horticulture	Agronomy	7 field lab	34' X 20'-4nos 40' X 30' 18' X 15' 18' X 21'
				Agricultural		

			5. Pests & Chemicals	Microbiology		9' X 10'
				Entomology	1 store	28' X 6'
				Genetics & Plant Breeding	1 field lab	30' X 20'
				Horticulture	1 store	20'x12'
				Soil Science and Agricultural Chemistry	1	19'x22

3	Green house / Poly house / Nursery facilities (Hort.)	½ acre	Agronomy	2	0.03 ac& 0.5 ac-potculture yard
			Agricultural Microbiology	1	0.5 ac& 0.012 ac
			Entomology	3	0.25 ac
			Genetics & Plant Breeding	3	0.07 ac
			Horticulture	6	Orchard Nursery-3634 Shade house-2-1071&150 Mist chamber- 216 Poly house- 418
			Plant Pathology	1	0.014 ac
			Soil Science and Agricultural Chemistry	1	33 X 20

### 1. Agronomy + (Agroforestry)

S. No.	Facilities	ICAR Requirement	Available
1	Crop cafeteria	½ acre land, Small implements like spade, hoe, khurpi, darati, etc.	½ ac land, 404 implements
2	Museum for identification of seeds, fertilizer, weeds, commonly used agro-chemical and medicinal and aromatic plants etc.	Storage bottle, Herbarium posting material	206 storage bottles 120 herbarium
3	Field of sowing method, fertilizer application, irrigation and soil productivity and yield estimation	Small equipment / implement	Seed dressing drum-2 Manual seed drill, fertigation unit-2, Tensiometer- 3
4	Irrigation water measurement, bulk density etc.	-	Irrigation measurement device
5	Vermicompost unit	-	Production of 300 Kgs of vermicompost / 3 months
6	Biogas Unit	-	60 Cu. m. Capacity

7	Poly house	-	300 Sq. ft
8	Wet Land	-	137.35 ac
9	Garden land	-	38.25 ac
10	Grass farm	-	9.32 ac
11	<b>Equipment</b>		
	Hot air oven	2	3
1.	Moisture box	30	60
2.	Moisture meter	5	5
3.	Tube Auger	10	20
4.	Bucket Auger	10	20
5.	Weighing Banalce	1	2
6.	Seed Germinator	2	2
7.	Conductivity Meter	1	2
8.	pH meter	2	4
9.	Water Bath	1	2
10.	Shaker	1	1
11.	Chlorophyl Meter	1	1
12.	Drip and Sprinkler System	3	5
13.	Sprayer	3	10
14.	Spring Balance 50 Kg	5	5
15.	Spring Balance 10 Kg	5	5
16.	Top Pan Balance 1 Kg capacity	5	5
17.	Top Pan Balance 2 Kg capacity	5	5
18.	Meter scale	10	20
19.	Tape	5	10
20.	Brix Meter	2	4

### Other Equipments Available

Tissue analyzer (1), Plant growth chamber(1), Laser guided land leveler(1), Combined harvester(1), Paddy transplanter (1), Micro-kjeldahl (3), Macro-kjeldahl (3), Soxhlet apparatus (1), Automatic nitrogen/ Protein estimation system (1), Centrifuge (1), pHmeter (1), ECmeter (1), Atomic Adsorption Spectrophotometer (1),

Maximum and minimum thermometer (3), Wet and dry thermometer (2), Soil thermometer (3), Grass minimum thermometer (1), Whirling psychrometer (1), Dew Gauge (1), USWB open pan evaporimeter (1), Hygrometer (1), Thermo hygrograph (1), Sunshine recorder (1), Wind vane (1), Anemometer and Model observatory (1).

### 2. Agricultural Economics + (Basic Economics, Maths & Computer Science and Statistics)

S. No.	Facilities	ICAR Requirement	Available
1	Computers	15	30+4
2	Camera	1	2
3	Software	As per requirement	SPSS, STRATA, R-Programming and E-views

### 3. Agriculture Extension & Communication + (Sociology and Psychology, English) Audio-visual Lab.

S. No.	Facilities	ICAR Requirement	Available
1.	LCD Projector	1	5
2.	Camers (SLR) with zoom, wide angle, tele-	1	2

	photo lens		
3.	Video camers with tripod, lighting accessories and editing facility	1	2
4.	Computers (work station) with editing softwares	1	2
5.	Digital voice recorders	5	7
6.	Audio recording-mixing consoles	1	2
7.	Computation softwares for Statistics	1	2

#### 4. Entomology

S. No.	Facilities	ICAR Requirement	Available
1.	Binocular Microscope	20	30
2.	Insect Box	60	1214
3.	Insect Collection Nets	60	150
4.	Collection Bottles	60	150
5.	Insect Collection Big Boxes for Museum (1 for each order)	29	9 big boxes 110 museum boxes
6.	Insecticides for showing students/ Representative for each group	As per requirement	100 containers
7.	Stereomicroscope	1	10
8.	Electronic Balance	1	4
9.	Soxhlet Extraction Apparatus	1	15 set
10.	Bee keeping equipment	1 set	87 set
11.	Oven	1	3
12.	Potters Tower	1	1
13.	Sprayers	1 of each type	3 in all types
14.	Light traps	1 set	5 set
15.	Fumigation chamber	1	3
16.	Slides / cover slipe	As per requirements	25 boxes each
17.	pH meter	1	5
18.	Computer with printer	1 set	4 set
19.	Apiculture Laboratory	-	1
20.	Pot culture yard	-	7
21.	Apiary	-	3
22.	Silkworm rearing units	-	3
23.	Sericulture Laboratory	-	1
24.	Skill Laboratory	-	1
25.	Insect Museum	-	1

#### Other Equipments Available

Trinocular stereo zoom with Montage software for capturing 3D image (1), Phase contrast trinocular stereo zoom microscope (3), Multiple gel casting unit (1), Submarine and vertical slab gel electrophoresis unit and power pack (1), Olfactometer (1), Volatile Collection Chamber and insect rearing cages (1), Micro applicator(1), Rotary flash vacuum evaporator (1), Leaf area meter (1), BOD Incubator (4), Double beam and single beam Spectrophotometers (1), Blender (1), Deep Freezer (1), Microtome (1), Rotary Shaker (1), Insect Suction Sampler (1), Refrigerated Centrifuge (1), Soxhlet extraction apparatus (10), Tissue homogenizer (1), pH meter(1), EC meter (1), Double distillation unit (2), Electronic weighing balance (2), Environmental test

chamber (1), Hot air Oven (3), Low temperature water circulator (1), Laminar Flow Chamber (1), Trinocular stereo Zoom microscope (1), Dissection microscopes (15)

### 5. Genetics & Plant Breeding + (Seed Science & Technology)

S. No.	Facilities	ICAR Requirement	Available
1.	Microscope	10	46
2.	Binocular Microscope	10	10
3.	Electronic Moisture Meter	2	5
4.	Electronic Balance	2	4
5.	Seed Germinator	2	2
6.	Automatic seed / grain counter	1	1
7.	Cytology & Cytogenetic Lab.	-	27x 20'
8.	Seed Technology Lab. 2	-	15x7', 15x7
9.	Molecular Lab.	-	30x12'
10.	Plant Tissue culture Laboratory	-	10x8'

### Biotechnology

S. No.	Facilities	ICAR Requirement	Available
1.	Hot Air Oven	1	1
2.	BOD Incubator	1	1
3.	Fluorescence microscope	1	1
4.	Centrifuge	1	3
5.	Growth Chamber	1	2
6.	Distillation Assembly	1	1
7.	PCR	-	3
8.	Gel Documentation	-	2
9.	pH meter	-	2
10.	Orbital Shaker	-	1

### Other Equipments Available

Monocular microscope (3), dissecting microscope(3), digital compound microscope (3), digital microscope (3), Binocular microscope with computer enabled, with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber), seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers, laminar air flow chamber, autoclave and incubator, mini thermocycler, electronic weighing balance, gel documentation chamber, BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-UV transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge, Agarose Gel electrophoresis with power pack, BOD incubator, Cyclo Mixer, Micro centrifuge, Orbital shaker, gel caster, Magnetic stirrer, Micro air oven, Spectrophotometer, BIORAD-30 wells, GENEI-gel rocker, Vacuum emasculator, ST 360 cyber ELISA, Water soil analysis kit and ELISA microplate washer.

### 6. Horticulture + (Food Science & Technology)

Name of the Instructional Unit	Dimension
Postharvest lab (UG)	40x30'
Orchard, OP Orchard, New area	63.07 ac
Shade house	60x30'
Nursery	0.5ac

Name of the Instructional Unit	Dimension
Field Instruction Lab I	34x19'
Field Instruction Lab II	34x19'
Field Instruction Lab III	34x19'
Implement shed	20x12'
Threshing yard	5540 Sq.ft.
NVP house 1 (EXP. Learning)	35x12'
NVP house 2 (EXP. Learning)	35x12'
NVP house 3 (EXP. Learning)	36x13'
Shade house	60x55'
Mist chamber (EXP. Learning)	15x10'
Poly house (EXP. Learning)	60x40'
Lake View garden, Shastri Hall garden, Statue garden, Tech Park garden, Medical College garden, Music College garden, Zoology garden, Education garden, Yoga garden, Guest house garden, Hospital Garden, Miyawaki garden, Oxygen Park, Entrance garden, Engineering garden, Agri garden	59.73 ac

#### a. Labs. (Post Harvest)

S. No.	Facilities	ICAR Requirement	Available
1.	Hand Refractometer	5	10
2.	Digital Refractometer	2	2
3.	Oven	1	2
4.	Refrigerator	1	3
5.	Electronic Weighing Balance	2	3
6.	Pan Balance (1 kg., & 10 kg. capacity each)	2	4
7.	Deep Freezer	1	1
8.	pH meter	1	4
9.	Fruit crusher	1	2
10.	Grinding and Mixing Machine	1	2
11.	Distillation Assembly	1	2

#### b. Lab (UG Lab)

S. No.	Facilities	ICAR Requirement	Available
1.	Seed Germinator	2	2
2.	Grafting and Budding knife	60	150
3.	Secateur	60	150
4.	Saw	5	10
5.	Loppers	5	10
6.	Mist Chamber	1	1
7.	Poly house with drip irrigation system	2	2
8.	Microscope	2	2

#### Other Equipments Available

Electronic Automatic Kel Plus 20L, Electronic Superior Automatic Distillation System with Display, Centrifuge, Circulating Thermostatic water bath, Double distillation water still, Hot air oven, , Plant Canopy

analyzer, Spectrophotometer. Available minor equipments PH Meter, Pocket Refractometer, Monocular microscope, Binocular Research Microscope, Trinocular Research Microscope, Dissecting microscope, Advanced student microscope, Digital Electrical conductivity meter, Hot Plate, Water bath, Digital PH meter, Electronic Weighing balance, Gel Documentation, Freeze Dryer, Deep Freezer, Automatic Microprocessor based 20 place Macro Block Nitrogen system, Automation Distillation System and Electronic Acid Neutralizer Scrubber, AM300 Portable Leaf Area Meter, Refrigerated Centrifuge, Automatic solvent extraction system, UV-VIS Spectro photometer, Chlorophyll content meter CCM 200, , Lux Meter, Laminar Air Flow Chamber, Refractometer, Dehydrator, Pulper, Humidity meter, Anemometer, Sachet Sealing Machine, Bottling and Packaging Machine, Research microscopes and Dissection microscopes, Infrared thermometer, refrigerator, Pan balance, grafting and budding knife, secature, hand saw, brush cutter, lawn mower, mechanical weeder, high pressure sprayers.

### 7. Soil Science and Agricultural Chemistry + (Microbiology, Agro-meteorology, Environmental Sciences)

S. No.	Facilities	ICAR Requirement	Available
1.	Electronic Top pan balance (0.1 g capacity)	2	2
2.	Electronic Top pan Balance (1 mg capacity)	2	2
3.	Hot air oven	2	3
4.	pH meter	5	6
5.	EC Meter	5	6
6.	Flame photometer	1	1
7.	Visible spectrophotometer	2	5
8.	Hot plate	2	3
9.	Distilled water unit	1	3
10.	Water bath	2	4
11.	Rotary shaker	2	2
12.	Digestion block	2	2
13.	Hydrometer	5	5
14.	Infiltrometer	2	1
15.	Hydraulic conductivity meter	1	1
16.	Atterberg's limits meter	5	-
17.	Nitrogen Analyzer	2	1

### Other Equipments Available

CN Analyzer, Pressur Plate Apparatus, T-27 FTIR Spectrometer System Tensor -27, Soil Grinding machine (2), Rotary Shaker, Soil Hydrometer, Grain size analyser, Hydrometer, Muffle Furnace (2Nos), centrifuge, Green House Analyzer, Sonicator, Scanning Visible Spectrophotometer, PC based UV-VIS Spectrophotometer, pH meter (2 Nos), Ground Truth Radio meter with 4 filter, Chlorophyll meter – Spade 502 (1), Water analyser, Digital conductivity meter (3Nos), Nephelometer, Flame photometer (1), Euro –cleaner, GPS equipment (2 Nos), Atomic Absorption Spectrophotometer (1), EC Meter (1) ,Electronic weighing balance (5 Nos), Rectangular Sand Heating Plate (2 Nos), Socs Plus Refrigerated Water cooling System, Deep freezer, Automatic Nitrogen/Protein Estimation System, Willey mill (2 Nos), Centrifuge (1), Mono Quartz Distill, Muffle Furnace, Vacuum Pump, Water Bath - 12 Holes (4Nos), Hot Air Oven (255 x 455 x 455 mm), Hot Air Oven (605 x 605 x 605 mm), Hot Air Oven (605 x 455 x 910 mm), Horizontal Shaker, Nitrogen Distillation Apparatus set, Konica Minolta Copier machine, Kjeltex N analyser, Soxhlet apparatus, Laminar flow chamber, Aggregate analyser, Mantle, Double beam Spectrophotometer, Double Distillation Unit, Bremner apparatus, Micro kjeldahl unit, Centrifuge, Environmental test chamber, Li-COR methane analyser, Fuel gas Generator

## 8. Agricultural Microbiology

S. No.	Facilities	ICAR Requirement	Available
1.	Pot culture yard	-	50 sq.ft.
2.	Biofertilizer production unit	-	50 sq.ft.
3.	Glass House / Shade net	-	50 sq.ft.
4.	Electronic Top pan balance (0.1 g capacity)	2	2
5.	Electronic Top pan Balance (1 mg capacity)	2	1
6.	Hot air oven	2	7
7.	pH meter	5	5
8.	EC Meter	5	5
9.	Flame photometer	1	1
10.	Visible spectrophotometer	2	1
11.	Hot plate	2	2
12.	Distilled water unit	1	2
13.	Water bath	2	2
14.	Rotary shaker	2	2
15.	Binocular Microscope	20	20
16.	BOD incubator	2	5
17.	Autoclave	2	5
18.	Laminar Air Flow	1	9
19.	Microwave oven	1	1

### Other Equipments Available

Autoclave (5), Hot air oven (7), BOD incubator (5) Electronic Balance (2), Distillation Unit (2), Light Microscope (12), Alcohol Unit (1), Hot plate (2), Laminar Flow chamber (9), Cooling centrifuge (1), phase contrast microscope (46), Fermentor with complete accessories (1), Spectrophotometer (1), HPLC (1), Gas Chromatography (1), Gel documentation unit (3), stereo zoom microscope (1), High resolution Microscope with image capturing system (1), ELISA Reader (1), Refrigerator (7), UV- Visible double beam (1), Flame photometer (2), PCR (1), Centrifuge (2), Nitrogen Analyser system (1), Vacuum Desiccators (1), pH Meter (2), Mechanical Shaker (1).

## 9. Plant Pathology

S. No.	Facilities	ICAR Requirement	Available
1.	Microscope compound with photo display arrangement	3	5
2.	Sample processing Board (Dry preservation of samples)	5	10
3.	Wet preservation jars	50	150
4.	Autoclave	4	5
5.	Oven	2	5
6.	Deep Freeze	1	2
7.	Centrifuge (3000 rpm)	1	2
8.	Refrigerator	1	5
9.	Water bath	2	2
10.	Electronic balance	2	2
11.	Weighing machine	1	2
12.	Incubator	1	5
13.	Ocular meter	5	10
14.	Stage Micrometer	5	10
15.	Camera Lucida	5	5
16.	Mushroom shed-1 (Experiential Learning)	-	31x15'

17.	Mushroom shed- 2 (Experiential Learning)	-	30x15'
18.	Glass house	-	38x15'
19.	Pot Culture Yard	-	0.4 ac

#### Other Equipments Available

PCR-Thermocycler, Gel Documentation System, Electrophoresis Unit, UV Transilluminator, Fermentor, Microscope with bright field Phase contrast and digital SLR Camera, ELISA Reader, Spectrophotometer, Cooling Centrifuge, Deep freezer, Micro centrifuge, Camera lucida, Bio safety cabinet, Laminar Air Flow, Hot Air Oven, BOD, Shaking incubator, Autoclave, Cooling orbital shaking incubator, RT-PCR, Western blot unit, Growth Chamber, Lyophilizer, -80 0C deep freezer, Fluorescent Phase contrast Microscope, Digital microscope, Fluorometer, Student microscope- 90 nos., Ocular Micrometer and Stage Micrometer.

#### 10. Animal Sciences including Fisheries

S. No.	Facilities	ICAR Requirement	Available
1.	5000/6500 Feed and Forage Analyser	01	-
2.	Hand and Electric Centrifuge	01	1
3.	Analytical Balance	01	-
4.	Hot air Oven	01	1
5.	Micro kjeldahl N digestion & distillation apparatus	01	-
6.	Soxhlet unit for fat estimation	01	-
7.	Hot plate, Fiber Tech	01	-
8.	Vacuum pump	01	-
9.	Willy Mill Grinder	01	-
10.	Platform balance (100 kg cap)	01	1
11.	Gerber Centrifuge Unit (for milk fat testing)	01	1
12.	Milk analyser (automatic)	01	1
13.	Crude fiber estimation unit	01	-
14.	Distilled water unit	01	-
15.	Incubator cum catcher	01	-
16.	Brooder machine	01	1
17.	Feeder	1	4
18.	waterer	1	4
19.	Egg candling machine	1	1
20.	Debeaker	1	1
21.	Vaccinator	1	1
22.	Milking machine	As per requirement	2
23.	Milking bucket	As per requirement	2
24.	Milking can	As per requirement	2
25.	Animal and bird identification tools	As per requirement	Ear tag, wind/leg bands
26.	Chaff cutter	1	1
27.	Lactometer	1	6
28.	Castrator	1	-
29.	Shearer	1	-
30.	Electric dehorner	1	1

31.	Artificial vagina	1	-
32.	Common Medication device	1	Syringes, 4 units, drencher
33.	Cattle crate	1	1

### Other equipments

Carton Digital Binocular, Model Feed Plant, Model Hatchery Unit, Electronic Weighing balance, Canon Scanner, Cream Separator

### 6.5.3.3. Student READY/In-plant training/Internship/Experiential learning programmes

#### Student READY (Rural and Entrepreneurship Awareness Development Yojana) to assure employability and to develop entrepreneurs

This will be undertaken by the students during the seventh and eighth semesters. Student READY shall be run for full year by making two groups and rotating activities of the final year in two groups. To get the eligibility for registering for the Student READY programme, the students should have completed all the courses successfully up to Sixth semester. No student should be allowed to take up the Student READY programme with backlog/repeat courses.

The students will be required to have registered for the three components listed below. The minimum attendance required for this programme is 85%. Any student in the event of recording shortage of attendance has to re-register the EL when offered next by paying the assigned fee.

1. Experiential Learning (EL)/Hands on Training (HOT) - 20 credits (24 weeks)
2. Rural Agricultural Work Experience (RAWEX) 10 credits (10 weeks)
3. In Plant Training/Industrial attachment - 10 credits (10 weeks)

#### The Experiential Learning (EL)/Hands on Training (HOT)

Experiential Learning/Hands on Training (HOT) helps the student to develop competence, capability, capacity building, acquiring skills, expertise, and confidence to start their own enterprise and turn job creators instead of job seekers. EL provides the students an excellent opportunity to develop analytical and entrepreneurial skills, and knowledge through meaningful hands on experience, confidence in their ability to design and execute project work.

The main objectives of EL are:

- To promote professional skills and knowledge through meaningful hands on experience
- To build confidence and to work in project mode
- To acquire enterprise management capabilities

Experiential Learning (EL) aims towards practical work experience in real life situation among the students and therefore it helps the student become “job provider rather job seeker”. EL provides students an excellent opportunity to develop entrepreneurial skills through meaningful hands-on experience and confidence. As the programme is enterprise oriented, students and faculty are to attend the activities of the enterprise even on institutional holidays with total commitment. Each EL unit shall have the organizational set-up as follows:

Chief Executive Officer	- HoD
Managing Director	- Senior Teacher in the group
Board of Directors	- Other teachers in the group

Manager	- Student representative from the group
Deputy Manager	- Another student from the group

The Experiential Learning (EL) shall be run for full year by making two groups and rotating activities of the final year in two groups.

The students will register for any of two modules, listed below, of 0+10 credit hours each. A separate certificate should be issued to the students after successful completion of EL. Allotment of EL amongst students to different modules should be done strictly on the basis of merit at the end of sixth semester.

S. No.	Course Code	EXP Activity	Department	Crcredit
1	ELAGR 401	Agriculture Waste Management	Agronomy	0+10
2	ELAGR 402	Organic Production Technology	Agronomy	0+10
3	ELGPB 401	Seed Production and Technology	Genetics and Plant Breeding	0+10
4	ELAGM 401	Production Technology for Bioagents and Biofertilizer	Agricultural Microbiology	0+10
5	ELPAT 401	Mushroom Cultivation Technology	Plant Pathology	0+10
6	ELSAC 401	Soil, Plant, Water and Seed Testing	Soil Science and Agricultural Chemistry	0+10
7	ELENT 401	Commercial Beekeeping	Entomology	0+10
8	ELENT 402	Commercial Sericulture	Entomology	0+10
9	ELAHS 401	Poultry Production Technology	Animal husbandry	0+10
10	ELHOR 401	Commercial Horticulture	Horticulture	0+10
11	ELHOR 402	Floriculture and Landscaping	Horticulture	0+10

Periodical evaluation of the above course will be done by the course teacher during different stages of work. Final evaluation of the above course will be done by the teacher in charge and another staff member appointed as examiner by the Head of the Department. The final examination will be conducted by the University before the commencement of regular final semester examinations.

S. No.	Parameters	Max. Marks
1.	Project Planning and Writing	10
2.	Presentation	10
3.	Regularity	10
4.	Monthly Assessment	10
5.	Output delivery	10
6.	Entrepreneurship Skills	10
7.	Technical Skill Development/ Business networking skills	20
8.	Report Writing Skills	10
9.	Final Presentation	10
	<b>Total</b>	<b>100</b>

### **Rural Agricultural Work Experience (RAWE) and Industrial Attachment (IA) (Village/ Industrial Attachment Training Programme)**

It shall be undertaken by the students during the seventh/eighth semesters for a total duration of 20 weeks with a weightage of 0+20 credit hours in two parts. The Rural Agricultural Work Experience (RAWE) helps the students primarily to understand the rural situations, status of agricultural technologies adopted by the farmers to prioritize the farmers problems and to develop skills & attitude of working with farm families for overall development in rural area. The timings for RAWE can be flexible for specific regions to coincide with the main cropping season.

It will consist of general orientation and on-campus training by different faculties followed by village attachment/unit attachment in university/college/KVK/estates or a research station. The students would be attached with the horti-industries to get an experience of the industrial environment and working. Due weightage in terms of credit hours will be given depending upon the duration of stay of students in villages/horti-industries. At the end of RHWE/IA, the students will be given one week for project report preparation, presentation and evaluation. The students would be required to record their observations in field and horti-industries on daily basis and will prepare their project report based on these observations.

#### **RAWE & IA - Rural Agricultural Work Experience and Industrial Attachment**

Activities	Department	No. of weeks	Credit Hours
General orientation & On campus training by different faculties	Agricultural Extension	1	9
Village attachment		8	
Unit attachment in Univ./College. KVK/ Estates/ Research Station / Financial Inst.	Agricultural Economics	5	9
Agri clinic/ Agri business center		4	
Agro-Industrial Attachment			
Project Report Preparation, Presentation and Evaluation	Agricultural Extension & Agricultural Economics	2	2
<b>Total weeks for RAWE &amp; AIA</b>		<b>20</b>	<b>20</b>
EXT 411 Educational Tour II	Agricultural Extension		1(0+1)

#### **RAWE Component-I**

##### **Village Attachment Training Programme**

Sl. No.	Activity	Duration
1.	Orientation and Survey of Village	1 week
2.	Agronomical Interventions	1 week
3.	Plant Protection Interventions	1 week
4.	Soil Improvement Interventions(Soil sampling and testing)	1 week
5.	Fruit and Vegetable production interventions	1 week
6.	Food Processing and Storage interventions	1 week
7.	Animal Production Interventions	1 week
8.	Extension and Transfer of Technology activities	1 week

#### **RAWE Component -II**

##### **Agri-Industrial Attachment**

- Students shall be placed in Agro and Cottage industries and Commodities Boards for 03 weeks.
- Industries include Seed/Sapling production, Pesticides-insecticides, Post harvest-processing value addition, Agri-finance institutions, etc

##### **Industrial Attachment:**

- The students would be attached with the Agro-Industries based industries for a period of 3 weeks to get an experience of the industrial environment and working.

##### **Activities and Tasks during Agro-Industrial Attachment Programme**

- Acquaintance with industry and staff

- Study of structure, functioning, objective and mandates of the industry
- Study of various processing units and hands-on training under supervision of industry staff
- Ethics of industry
- Employment generated by the industry
- Contribution of the industry promoting environment
- Learning business network including outlets of the industry
- Skill development in all crucial tasks of the industry
- Documentation of the activities and task performed by the students
- Performance evaluation, appraisal and ranking of students

The final examination will be conducted separately at the end of the semester by the University. The marks will be awarded as detailed below.

Particulars	Max marks	Evaluation by
Observation Note book	20	By Teacher in-charge
Skills learned	20	
<b>Final examination</b>		
Commendable activities	10	By the Examiners
Detailed project report presentation and Record	30	
<i>Viva Voce</i>	20	
<b>Total</b>	<b>100</b>	

#### 6.5.3.4. Curricula Delivery through IT (Smart class rooms/Interactive board etc.)

Annamalai University has a state of the art IT facility, a jewel in the crown of its overall infrastructure, including campus-wide intranet connection with an exclusive 1 GBPS bandwidth internet leased line. Among the theory class rooms, out of 26 classrooms, 20 classrooms in the faculty are ICT enabled with LCD projectors. In addition, all the departments has additional ICT enabled UG laboratories with LCD projectors/Interactive boards/ Smart TVs/Electronic podium etc.

#### ICT tools:

- Various state of the art, subject specific, ICT software, most of which are in-house developed, such as the following are in use:
- **ENVIS database** to access information on estuaries, mangroves, coral reefs and lagoons and other
- marine resources
- **3-D Montage software** for real time image capturing of minute insect structures and specimens
- Online resources like virtual labs and video contents are integrated as learning material
- Workplace Management Systems like Google Classroom, Zoom meeting, Go to meeting, Edmodo,
- Microsoft Karizala to deliver contents and review assignments
- Social media network groups for real time reporting, attendance and on site work progress for monitoring Hands-on training, Industrial visit, Rural Agricultural Work experience
- University website hosts online tutorial classes
- Exclusive Microsoft Teams ID for all the teachers and students have been created
- Specific virtual platforms created to handle and monitor online classes in defined schedules

#### Online and ICT Learning Resources:

- 24 x 7 remote access of University library resources through “Myloft” app
- Integration of the department and faculty libraries with the central library to facilitate remote access to resources in all the libraries from one point
- Web link for remote login for various resources including J-GATE, ProQuest database for Ejournal and books and Central Library are provided in university website

- Online resources like e-journals, e-books, Online databases, Statistical software, Mobile apps, CDROM,
- You tube videos, Carnatic.com, kutcheri buzz for delivering teaching material
- Link to e-learning resources like SWAYAM portal, e-PG Pathshala, etc., along with details of university level coordinators provided in the University website to facilitate easy enrolment of students
- E-content resources for the students are made available in the Student Portal under the header "Learning Resources."
- INFONET lab to facilitate the students to broaden and strengthen their knowledge

## 6.5.4. STUDENT DEVELOPMENT

### 6.5.4.1. Student Intake and Attrition

The details of students admitted into various UG & PG programs during the last five years along with attrition percentage is given below

Programmes	Year									
	2017-18		2018-19		2019-20		2020-21		2021-22	
	Intake	Attrition (%)								
<b>Under graduate programmes</b>										
B. Sc. (Agri.) / B.Sc (Hons) Agriculture	1081	16	1121	1.43	1086	4.23	600	8.5	600	4.70
B. Sc. (Hort.) / B.Sc (Hons)(Horticulture)	72	19.44	97	2.1	88	9.1	79	15.19	100	1
<b>Post graduate programmes</b>										
M.Sc. (Agri.) Agronomy	33	-	31	-	25	-	29	-	30	-
M.Sc. (Agri.) Agricultural Economics	15	-	19	-	20	5	15	-	14	-
M.B.A. (Agri- business Management)	6	-	10	-	9	-	5	-	3	-
M.Sc. (Ag.) Agricultural Extension	20	-	20	-	18	-	15	-	17	-
M.Sc. (Ag.) Agricultural Microbiology	15	-	15	-	15	-	8	-	14	-
M.Sc. (Ag.) Entomology	20	-	17	-	17	-	17	-	18	-
M.Sc. (Ag.) in Genetics & plant breeding	25	-	24	-	25	-	14	-	15	-
M.Sc. (Ag.) in Seed science & technology	5	-	11	-	6	-	10	-	8	-
M.Sc. (Ag.) Molecular Biology and Biotechnology	5	-	4	-	4	-	7	-	5	-
M.Sc. (Hort.) in Floriculture and Landscaping	10	-	10	-	9	-	8	-	9	11
M.Sc. (Hort.) in Fruit Science	10	-	10	--	6	-	10	-	10	10
M.Sc. (Hort.) in Vegetable Science	10	-	10	--	7	-	9	-	10	10
M.Sc. (Hort.) in Plantation, spices, Medicinal ans Aromatic crops	5	-	5	-	3	-	9	-	9	-
M.Sc. (Ag.) Plant Pathology	20	-	19	5	18	-	17	-	16	-
M.Sc. (Ag) Soil Science and Agricultural Chemistry	15	-	11	-	6	-	10	-	18	-
<b>Ph.D. programmes</b>										
Ph.D.Agronomy	5	-	5	-	14	-	10	-	4	-
Ph.D.Agricultural Economics	1	-	4	-	11	-	5	-	7	-
Ph.D (Agri business management)	1	-	-	-	2	-	6	-	-	-
Ph.D.Agricultural Extension	4	-	4	-	7	-	8	-	3	-
Ph.D.AgriculturalMicrobiology	3	-	5	-	5	-	1	-	5	-
Ph.D.Entomology	7	-	8	-	10	-	10	-	6	-
Ph.D.in Genetics & plant breeding	2	-	-	-	7	-	13	-	6	-
Ph.D. in Seed science & technology	2	-	1	-	6	-	2	-	2	-

Ph.D. Molecular Biology and Biotechnology	-	-	-	-	5	-	-	-	3	-
Ph.D. (Hort.) in Floriculture and Landscaping	0	-	1	-	3	-	2	-	2	-
Ph.D. (Hort.) in Fruit Science	0	-	0	-	0	-	1	-	1	-
Ph.D.(Hort.) in Vegetable Science	1	-	3	-	7	-	5	-	6	-
M.Sc. (Hort.) in Plantation, spices, Medicinal and Aromatic crops	0	-	0	-	0	-	1	-	1	-
Ph.D. Plant Pathology	0	-	2	-	8	-	4	-	2	-
Ph.D. Soil Science and Agricultural Chemistry	2	0	2	50	8	12.5	2		3	

#### 6.5.4.2. Average Number of students in Theory and Practical classes

The classes are divided into sections for theory and further sections were/are divided into two groups for practical as given below

Sl. No.	Name of the Degree Programme	Batch of students in	
		Theory classes	Practical classes
1.	B.Sc. (Hons.) Agriculture	60	30
2.	B.Sc. (Hons.) Horticulture	50	25
3.	M.Sc. (Ag.) Agronomy	30	15
4.	M.Sc. (Ag.) Agricultural Economics	20	20
5.	M.B.A. (Agri business)	10	10
6.	M.Sc. (Ag.) Agricultural Extension	20	20
7.	M.Sc. (Ag.) Agricultural Microbiology	20	20
8.	M.Sc. (Ag.) Entomology	20	20
9.	M.Sc. (Ag.) in Genetics & plant breeding	20	20
10.	M.Sc. (Ag.) in Seed science & technology	10	10
11.	M.Sc. (Ag.) Molecular Biology and Biotechnology	10	10
12.	M.Sc. (Hort.) in Floriculture and Landscaping	10	10
13.	M.Sc. (Hort.) in Fruit Science	10	10
14.	M.Sc. (Hort.) in Vegetable Science	10	10
15.	M.Sc. (Hort.) in Plantation, Spices, Medicinal and Aromatic crops	10	10
16.	M.Sc. (Ag.) Plant Pathology	20	20
17.	M.Sc. (Ag) Soil Science and Agricultural Chemistry	20	20
	<b>Ph.D Programmes</b>		
18.	Ph.D. Agronomy	15	15
19.	Ph.D. Agricultural Economics	10	10
20.	M.B.A. (Agri business)	10	10
21.	Ph.D. Agricultural Extension	10	10
22.	Ph.D. Agricultural Microbiology	10	10
23.	Ph.D. Entomology	10	10
24.	Ph.D. in Genetics & plant breeding	10	10
25.	Ph.D. in Seed science & technology	10	10
26.	Ph.D. Molecular Biology and Biotechnology	10	10
27.	Ph.D. (Hort.) in Floriculture and Landscaping	5	5
28.	Ph.D. (Hort.) in Fruit Science	5	5
29.	Ph.D. (Hort.) in Vegetable Science	5	5
30.	Ph.D. (Hort.) in Plantation, Spices, Medicinal and Aromatic crops	5	5
31.	Ph.D. Plant Pathology	10	10
32.	Ph.D. Soil Science and Agricultural Chemistry	10	10

### 6.5.4.3. Admission Process

Faculty of Agriculture admits students meeting the prescribed eligibility criteria based on merit. The admission notification is widely publicized in National/Regional News Papers, in addition to online advertisement on the Website ([www.annamalaiuniversity.ac.in](http://www.annamalaiuniversity.ac.in)) of Annamalai University. The on line prospectus provides information on seats, subjects, syllabus, academic requirements, fee structure, fellowships, awards and medals, hostel facilities etc. Students seeking admission have to apply on line and can download the call letter for counseling. The rule of reservation policy of Govt. of Tamil Nadu is strictly followed in allocation of seats.

Applications for admissions to B.Sc. (Hons.) Agriculture/Horticulture are received online. A Pass in the Higher Secondary Course (HSC) Academic stream or Vocational stream or its equivalent qualifying examination with 10+2 years of schooling with stipulated minimum percentage is considered to be eligible. Five per cent of the seats are set apart for the candidates who qualified under Vocational Stream (Biology with Agricultural Practices as vocational subject). Such candidates shall not be considered under the general merit list prepared for the candidates with Higher Secondary Course (HSC) (Academic) /Equivalent Examination.

Admission to B.Sc. (Hons.) in Agriculture and B.Sc. (Hons.) in Horticulture is based on the cut-off marks obtained in higher secondary examination. Admission to M.Sc. (Ag.)/M.Sc. (Hort.) and Ph.D. are made based on the marks obtained by the candidates in academic attainments, entrance examination and interview.

Sl. No.	Name of the Programme	Criteria of Admission
1.	B.Sc. (Hons.) Agriculture	Merit (Counseling)
2.	B.Sc. (Hons.) Horticulture	Merit (Counseling)
3.	M.Sc. (Ag.)/M.Sc. (Hort.) M.B.A. (Agri. Business)	Merit, Entrance test & Interview
4.	Ph.D. (Ag./Hort./ABM)	Merit, Entrance test & Interview

### Mechanism of Admission and Fee Payment for UG, PG, and Ph.D. Programmes

The overall rank and community wise rank lists are published in the university website (<http://www.annamalaiuniversity.ac.in>). Call letters are sent to the candidates through website, email, and SMS services. The tuition fee, hostel fee, and examination registration fee is accepted only through digital mode.

### 6.5.4.4. Conduct of Practical and Hands on Training

- ❖ Exposure field visits to are organized to provide hands on training to students for various courses
- ❖ Students are trained on basic laboratory techniques and applied aspects at field level.
- ❖ Students are trained on identification of weeds/plant species/insects/ diseased symptoms, nutrient deficiency symptoms, etc.
- ❖ Students are given hands-on training in collection of soil samples, plant propagation techniques, plant protection techniques, etc.

- ❖ Students cultivate crops by themselves and learn crop cultivation practically.
- ❖ Students are exposed to practical agriculture by field trips to meet progressive farmers at different villages.
- ❖ The students undergo Agro-Industrial tie-up programme in different agro-based industries, Rural Agricultural Work Experience programme in villages and Experiential Learning Programme.

#### Hands-on Training for B.Sc. (Hons.) Agriculture

S.No.	Name of the Department	Hands-on Training courses	
		B.Sc. (Hons.) Agriculture	Hands on training given to the students
1.	Agronomy	AGR 101 - Fundamentals of Agronomy	<ul style="list-style-type: none"> <li>• Identification of seeds and crops</li> <li>• Study of tillage implements</li> <li>• Study of seeding implements, inter-cultivation implements and practice</li> <li>• Different methods of sowing</li> <li>• Identification and study of manures and fertilizers</li> </ul>
		AGR 102 - Introductory Agro meteorology and Climate change	<ul style="list-style-type: none"> <li>• Site selection &amp; layout for observatory</li> <li>• Measurement of various weather parameters</li> <li>• Determination of vapor pressure, relative humidity and dew point temperature readings, hygrometric table.</li> </ul>
		AGR 103 - Irrigation Management	<ul style="list-style-type: none"> <li>• Estimation of soil moisture and crop water requirement</li> <li>• Measurement of irrigation water through water measuring devices like flumes, weirs and water meter</li> <li>• Measurement of field capacity, bulk density and infiltration rate</li> <li>• Acquiring skill in land shaping for different surface irrigation methods</li> <li>• Operation and economic of drip and sprinkler irrigation systems</li> <li>• Irrigation methods for various crops</li> </ul>
		AGR 201 - Weed Management	<ul style="list-style-type: none"> <li>• Identification of weeds</li> <li>• Survey of weeds in crop fields and other habitats</li> <li>• Preparation of herbarium of weeds; weed seed bank</li> <li>• Use of tools and implements</li> <li>• Study of herbicide application equipments and calibration</li> <li>• Methods of herbicide application</li> <li>• Preparation of list of commonly available herbicides</li> <li>• Designing integrated weed management practices for various crops.</li> </ul>
		AGR 202 - Introductory to Forestry	<ul style="list-style-type: none"> <li>• Identification of trees, Seeds and seedlings of important agroforestry species</li> <li>• Seed treatments</li> <li>• Forest nursery-types, Layout, bed preparation</li> <li>• Nursery technology of important tree species</li> <li>• Forest mensuration</li> <li>• Biomass estimation in Energy plantations</li> </ul>
		AGR 203- Crop Production Technology-I ( <i>Kharif</i> Crops)	<ul style="list-style-type: none"> <li>• Nursery preparation and transplanting of rice, pearl millet, and finger millet.</li> <li>• Sowing of various Kharif crops</li> <li>• Topdressing and foliar feeding of nutrients,</li> <li>• Study of crop varieties and important agronomic</li> </ul>

			experiments.
		AGR204 - Practical Crop Production – I	<ul style="list-style-type: none"> <li>• Acquiring skills in selection of nursery area, preparation of nursery, application of manures and fertilizer to nursery</li> <li>• Study and practice of green manuring and bio-fertilizer application in rice and acquiring skills in seed treatment, seed soaking and incubation, nursery sowing and management</li> <li>• Study and practice of main field preparation and puddling operations</li> <li>• Practicing of field preparatory operations</li> <li>• Practicing transplanting techniques in lowland rice/ exposure to mechanized transplanting</li> <li>• Estimation of plant population and acquiring skill in thinning and gap filling</li> <li>• Study of weeds and weed management in rice/ exposure to mechanized weeding</li> </ul>
		AGR 205-Crop Production Technology-II (Rabicrops}	<ul style="list-style-type: none"> <li>• Sowing methods of rabi field crops</li> <li>• Identification of weeds and Study of morphological characteristics in <i>rabiseason</i> crops.</li> <li>• Oil extraction from Oil seed crop</li> </ul>
		AGR 301 - Practical Crop Production – II	<ul style="list-style-type: none"> <li>• Acquiring skill in seed treatment practices</li> <li>• Study and practice of main field preparation for crop</li> <li>• Practicing of application of manures and fertilizers for crop</li> <li>• Practicing sowing of crop/ exposure to mechanized sowing</li> <li>• Acquiring skill in pre-emergence application of herbicides</li> <li>• Estimation of plant population and acquiring skill in gap filling and thinning</li> <li>• Observation on nutritional deficiency symptoms and corrective measures</li> </ul>
		AGR 302 -Rainfed Agriculture, Watershed Management And Secondary Agriculture	<ul style="list-style-type: none"> <li>• Preparation of Cropping pattern for different rain fed areas.</li> <li>• Interpretation of meteorological data and scheduling of supplemental irrigation on the basis of evapo-transpiration demand of crops.</li> <li>• Characterization and delineation of model watershed.</li> <li>• Field demonstration on soil and moisture conservation measures</li> <li>• Construction of water harvesting structures.</li> </ul>
		AGR 303 -Farming Systems And Organic Farming For Sustainable Agriculture	<ul style="list-style-type: none"> <li>• IFS model in different agro-climatic zones</li> <li>• To study the various components and their utilization.</li> <li>• Preparation of enrich compost, vermicompost, bio-fertilizers/bio-inoculants and their quality analysis.</li> <li>• Developing Indigenous technology knowledge (ITK) for nutrient, insect, pest disease and weed management.</li> <li>• Postharvest management-Quality aspect, grading, packaging and handling.</li> </ul>
2	Agricultural Economics	AEC 101 Fundamentals of Agricultural Economics	Assignments given to the students by the concerned teacher and evaluated at the end of the semester
		AEC 201 Farm Management, Production and Resource	Field visits to collect the actual data from farmers regarding cost of cultivation, cropping pattern, production details to understand production

		Economics	economics and farm management techniques
		AEC 202 Agricultural Marketing, Trade and Prices	Visits to various regulated and unregulated markets to know the objectives, functions and their role in agricultural development
		AEC 301 Agribusiness Management	Visits to various agro based industries to gain practical exposure to start a new business
		AEC 303 Agricultural Finance, Banking and Co-operation	Visits to various financial institutions to know the procedures to avail loans and government schemes
		AIA AEC 415 Agro Industrial Attachment	The students are exposed to the operations of agro based industries, commercial banks, NABARD, input industries, ACABCs, NGOs, regulated markets, FPOs, Cooperatives and farmers' clubs in order to get practical knowledge and to get an inspiration to become an entrepreneur
		ECAEC 203 Optional Course Project Management	Practical exercises to gain knowledge on project appraisal techniques in agro based projects
3.	Agricultural Extension	EXT - 102 Fundamentals Of Agricultural Extension Education (2+1)	<ul style="list-style-type: none"> <li>• Organization of group discussion and method demonstration in transfer of technology.</li> <li>• First-hand experience on activities of extension units.</li> <li>• Writing scripts for mass media along with the preparation of agricultural information materials.</li> <li>• Selection and preparation of projected and non-projected visual aids.</li> <li>• Handling of public address equipment, video camera and LCD Projector.</li> </ul>
		EXT - 301 Communications skills and personality Development (1+1)	<ul style="list-style-type: none"> <li>• Effective Presentations skills</li> <li>• Organization and participation in group discussions.</li> <li>• First hand experience on reading and comprehension skills.</li> <li>• Understanding of importance and insight into creativity skills.</li> </ul>
		EXT - 302 Entrepreneurship Development And Business Communication (1+1)	<ul style="list-style-type: none"> <li>• Develop project proposal through field visits.</li> <li>• Experience various functions and develop the managerial skills through simulated exercises.</li> <li>• Prepare and present project reports.</li> </ul>
		RAWE - Rural Agricultural Work Experience (0+10)	<ul style="list-style-type: none"> <li>• Conducting need based method demonstrations, campaigns and exhibitions in the villages.</li> <li>• Organization of field visits and group discussion with farmers.</li> <li>• Organization of farmers/ rural youth training programme.</li> <li>• Participation in village social service work.</li> <li>• Identification of communication media in the transfer of technologies.</li> <li>• Report preparations and presentation</li> </ul>
		EXT 411 -Educational Tour (0+1)	<ul style="list-style-type: none"> <li>• Preparation of tour schedule</li> <li>• Coordinating various tour related activities</li> <li>• Exposure about national level education, research and extension institution.</li> </ul>
4.	Agri. Microbiology	AGM101 Agricultural Microbiology (2+1)	<ul style="list-style-type: none"> <li>• Better understanding of students about the microscopic world.</li> <li>• Students acquire with the basic laboratory techniques and tools of microbiology.</li> <li>• Role of soil microorganisms in soil fertility and plant growth promotion.</li> </ul>

			<ul style="list-style-type: none"> <li>• Mass production of bio Inoculants</li> </ul>
		AGM - 201 Principles Of Food Science And Nutrition (1+1)	<ul style="list-style-type: none"> <li>• Students knowledge on microbes and their diversity, sources of contamination in food.</li> <li>• The students to know the principle underlying food preparation and preservation technologies.</li> <li>• Fermentation technologies of producing value-added foods by microbes and their spoilage.</li> <li>• Advanced techniques on food production, processing, packing and quality control.</li> </ul>
		AGM 202 -Environmental Studies And Disaster Management(2+1)	<ul style="list-style-type: none"> <li>• Students Gain knowledge about the environment and ecology.</li> <li>• Student will acquire potential role on the microorganisms employed in Bioremediation.</li> <li>• Students will acquire technology about solid waste management</li> <li>• Students will aware about current scenario of disaster Management.</li> </ul>
		EC AGM 301 Biopesticides And Biofertilizers (2+1)	<ul style="list-style-type: none"> <li>• The concepts and potential of biopesticides and biofertilizers</li> <li>• To acquire the basic knowledge about the biofertilizers and biopesticides.</li> <li>• Theoretical and practical aspects of biopesticides and biofertilizers production and usage.</li> <li>• Development skills about the production technology of biopesticides and biofertilizers</li> <li>• Awareness about the importance of biopesticides and biofertilizers in sustainable crop production.</li> </ul>
		ELAM 401 Production technology for Bio Agents and Biofertilizers (0+10)	<ul style="list-style-type: none"> <li>• Isolation of bacterial, fungal inoculants.</li> <li>• Selection and strain improvement of different type of inoculants.</li> <li>• Enhancing the skills on development of Mass Production.</li> </ul>
5	Entomology	ENT 101 Fundamentals of Entomology	<ul style="list-style-type: none"> <li>• Dissection of Mouthparts in insects</li> <li>• Field collection, preservation and mounting of insects</li> </ul>
		ENT 201 Management of beneficial insects and Introductory Nematology	<ul style="list-style-type: none"> <li>• Rearing of silkworm</li> <li>• Maintenance of bee colony</li> <li>• Extraction of honey</li> <li>• Making value added products with honey</li> <li>• Identification of Predators and Parasitoids</li> <li>• Diagnosing the symptoms of nematode attack</li> </ul>
		ENT 301 Pests of Crops and Stored Grain and their Management	<ul style="list-style-type: none"> <li>• Rearing of pest larvae</li> <li>• Identification of pests</li> <li>• Training on management practices</li> </ul>
		ENT 302 Insect Ecology & Integrated pest management	<ul style="list-style-type: none"> <li>• Ecosystem analysis –AESA</li> <li>• Mass production techniques of Trichogramma, Chrysopa, SI NPV</li> <li>• Preparation of traps</li> <li>• Formulation types</li> <li>• Spray equipments</li> <li>• IPM practices</li> </ul>
6	Genetics & Plant Breeding	GPB 101 Fundamentals of Crop Physiology	<ul style="list-style-type: none"> <li>• Measurement of leaf area</li> <li>• Measurement of stomatal index and frequency</li> <li>• Measurement of plant water potential</li> <li>• Growth analysis</li> <li>• Measurement of relative water content</li> </ul>

		GPB 102 Fundamentals of Genetics	<ul style="list-style-type: none"> <li>• Study of Cell structure</li> <li>• Stages of cell division - Mitosis</li> <li>• Stages of cell division - Meiosis</li> <li>• Phenomenon of Crossing over using colour clay</li> <li>• Phenomenon of dominance and recessivity</li> <li>• Problems on linkage and crossing over</li> </ul>
		GPB 201 Fundamentals of Plant Breeding	<ul style="list-style-type: none"> <li>• Plant breeding kit</li> <li>• Floral biology and emasculation in major crops</li> <li>• Male sterility and self incompatibility</li> <li>• Basic statistics-calculation of PCV, GCV, heritability and genetic advance</li> </ul>
		GPB 202 Principles of Seed Technology	<ul style="list-style-type: none"> <li>• Seed structure</li> <li>• Germination test using different media</li> <li>• Tetrazolium test</li> <li>• Paper piercing test</li> <li>• Brick gravel test</li> <li>• Physical purity test</li> <li>• Egg floatation technique</li> <li>• Acid delinting in cotton</li> </ul>
		GPB 301 Crop Improvement -I (Kharif Crops)	<ul style="list-style-type: none"> <li>• Floral biology for hybridization</li> <li>• Emasculation and pollination</li> <li>• Visit to seed production plot</li> </ul>
		GPB 302 Crop Improvement - II (Rabi Crops)	<ul style="list-style-type: none"> <li>• Floral biology for hybridization</li> <li>• Emasculation and pollination techniques</li> <li>• Layout of field experiments</li> </ul>
7	Horticulture	HOR 101 Fundamentals of Horticulture	<ul style="list-style-type: none"> <li>• Preparation of nursery bed</li> <li>• Practising asexual propagation by different methods of Cutting.</li> <li>• Practising asexual propagation by different methods of Layering.</li> <li>• Practising asexual propagation by different methods of Budding.</li> <li>• Practising asexual propagation by different methods of Grafting</li> </ul>
		HOR 102 Production technology of fruits and plantation crops	<ul style="list-style-type: none"> <li>• Propagation methods for fruits.</li> <li>• Application of manures and fertilizers to fruit crops.</li> <li>• Preparation of plant bio regulators and their applications.</li> <li>• Practicing harvesting offruit crops.</li> <li>• Practicing postharvest handling of Fruit crops</li> </ul>
		HOR 201 Production technology for vegetables, spices and protected cultivation	<ul style="list-style-type: none"> <li>• Raising vegetable seedlings inportrays.</li> <li>• Transplanting of vegetable crops.</li> <li>• Water management techniques for vegetable crops.</li> <li>• Fertilizers applications in vegetable crops.</li> <li>• Harvesting based on maturity indices of vegetable crops</li> </ul>
		HOR-202 Production technology for ornamental crops, MAP and landscaping	<ul style="list-style-type: none"> <li>• Practicing in lawn making.</li> <li>• Designing garden for Residence and community living</li> <li>• Designing garden for Institute and Industry</li> <li>• Designing garden for Public Park.</li> <li>• Horticultural crafts- Flower arrangements, Bouquet etc</li> </ul>
		HOR-302 Post-harvestmanagementandvalue additionoffruitsandvegetables	<ul style="list-style-type: none"> <li>• Preparation of jam.</li> <li>• Preparation of RTS &amp; squash.</li> <li>• Preparation of tomato products.</li> </ul>

			<ul style="list-style-type: none"> <li>• Preparation of pickles.</li> <li>• Preparation of osmotically dried products.</li> </ul>
		ECHOR 301 HI-Tech Horticulture	<ul style="list-style-type: none"> <li>• Modern techniques of nursery production.</li> <li>• Climate control in Poly- house.</li> <li>• Micro Irrigation Methods-Design, layout and installation methods.</li> <li>• Nutrient Deficiency symptoms -its cause and remedy</li> <li>• Weed management-weed mat.</li> </ul>
8	Plant Pathology	PAT 101- Fundamentals of Plant Pathology	<ul style="list-style-type: none"> <li>• Handling of Microscope</li> <li>• Cross section from disease specimens</li> <li>• Microscopic identification of fungal spores and fruiting bodies</li> <li>• Preparation of Mounting Slides from disease specimens</li> <li>• Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.</li> </ul>
		PAT 201- Diseases of field and horticultural crops and their management-I	<ul style="list-style-type: none"> <li>• Cross section from disease specimens</li> <li>• Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.</li> <li>• Preparation of Mounting Slides from disease specimens</li> </ul>
		PAT301- Diseases of field and horticultural crops and their management-II	<ul style="list-style-type: none"> <li>• Cross section from disease specimens</li> <li>• Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.</li> <li>• Preparation of Mounting Slides from disease specimens</li> </ul>
		PAT 303 - Principles of integrated disease management	<ul style="list-style-type: none"> <li>• Handling different types of sprayers</li> <li>• Different methods of application of fungicides and bio control agents</li> <li>• Integrated Disease management practices is taught to the UG students with an objective of gaining knowledge on various aspects on crop disease management.</li> <li>• Identification of bio agents, impact of natural products on crop disease management.</li> <li>• Bio-efficacy studies on new generation fungicides against crop diseases.</li> </ul>
		EC PAT 302 - Antagonistic Formulations	<ul style="list-style-type: none"> <li>• Identification and isolation of native bio-agents, plant pathogens and their impact on crop growth.</li> <li>• Mass multiplication of Biocontrol agents</li> </ul>
9	Soil Science & Agrl. Chemistry	SAC 112- Principles of Analytical Chemistry	<ul style="list-style-type: none"> <li>• Preparation of laboratory reagents</li> <li>• preparation of primary and secondary standards</li> <li>• Gravimetric analysis</li> <li>• Instrumental analysis-potentiometry, conductometry, colorimetry, spectrophotometry</li> <li>• Radioactivity - radiation decay, detection and measurements</li> </ul>
		SAC 124 - Fundamentals of Biochemistry	<ul style="list-style-type: none"> <li>• Qualitative tests for Glucose, Fructose</li> <li>• Qualitative tests for Sucrose, Lactose, Maltose, Starch and Dextrin</li> <li>• Quantitative estimation of Carbohydrates</li> <li>• Analysis proteins, lipids- various</li> <li>• chemical constants</li> <li>• assay of Vitamins</li> </ul>

		SAC 213 Fundamentals of Soil Science	<ul style="list-style-type: none"> <li>• Identification of rocks and minerals</li> <li>• soil profile study</li> <li>• collection and processing of soil samples</li> <li>• Analysis of soil physical and chemical properties</li> <li>• Analysis of exchangeable cations in soil, buffering capacity of soil</li> </ul>
		SAC 224 - Soil Resource Inventory and Problem Soils	<ul style="list-style-type: none"> <li>• Profile description, Nomenclature - Soil Taxonomy</li> <li>• Soil survey - Soil mapping</li> <li>• Remote Sensing and its application in Agriculture</li> <li>• Analysis of problem soils</li> <li>• Analysis of quality of irrigation water</li> </ul>
		SAC 315 Soil Fertility, Fertilizers and Manures	<ul style="list-style-type: none"> <li>• Identification of deficiency and toxicity symptoms</li> <li>• Manufacturing technology of urea, ammonium sulphate, SSP, DAP, MOP and SOP. Complex, mixed fertilizers, customized / Specialty fertilizers</li> <li>• Manures analysis, Composting techniques.</li> <li>• Soil health study</li> <li>• Establishment of soil testing laboratories</li> </ul>
		SAC 324 Crops And Pesticide Chemistry and Nanotechnology	<ul style="list-style-type: none"> <li>• Determination of reducing and non-reducing sugars in jaggery.</li> <li>• Estimation of total solids, ascorbic acid, titratable acidity in fruits</li> <li>• Analysis of pesticides</li> <li>• Estimation of pesticide residues in soil</li> <li>• Pesticide Testing Laboratory and Nanotechnology Laboratory</li> </ul>
		SAC 421- Soil, Water and Plant Analysis	<ul style="list-style-type: none"> <li>• Collection and preparation of soil sample and analysis of soil nutrients availability</li> <li>• Collection of irrigation water sample and analysis</li> <li>• Tissue test, plant analysis – visual identification of nutrient deficiency symptoms</li> <li>• Collection and preparation of plant sample, preparation of Di/Tri acid extract</li> <li>• Analysis of plant sample for total their nutrient content and uptake</li> </ul>
		SAC 422- Soil Constraints and Its Management for Sustainable Crop Productivity	<ul style="list-style-type: none"> <li>• Field diagnosis (visual) and Laboratory diagnosis (Soil analysis)</li> <li>• Assessment of soil physical health – LOIC, STORIE index, productivity rating index</li> <li>• Methods of reclamation measures of problem soils</li> <li>• Integrated soil fertility management for higher crop productivity, SSNM, decision support system.</li> <li>• Assessment of irrigation water quality- its profitable use.</li> </ul>
10	Division of Animal Husbandry	AHS -201 Livestock Management	<ul style="list-style-type: none"> <li>• Restraint and handling of Dairy Cattle</li> <li>• Identification of Different Breeds</li> <li>• Deworming, Ageing and Vaccination in cattle</li> <li>• Selection of Dairy Cattle</li> <li>• Identification of Feeds and Fodders</li> </ul>
		AHS - 202 Poultry and Fisheries Management	<ul style="list-style-type: none"> <li>• Handling of Broilers and Layers</li> <li>• Deworming, Debeaking and Vaccination in Broilers and Layers</li> <li>• Identification of Feeds and Feed ingredients</li> <li>• Slaughtering and Processing of chicken meat</li> </ul>

			<ul style="list-style-type: none"> <li>• Processing of Fish Meal and its inclusion level in poultry</li> </ul>
		ECAHS - 301 Caprine and Ovine Management	<ul style="list-style-type: none"> <li>• Restraint and handling of Sheep and Goat</li> <li>• Identification of Different Breeds</li> <li>• Deworming ,Ageing and Vaccination in Sheep and Goat</li> <li>• Castration and demonstration of Artificial Insemination in Does</li> <li>• Identification of Feeds and Fodders</li> </ul>
		ELAHS- 401- Poultry Products Technology	<ul style="list-style-type: none"> <li>• Slaughtering and Processing of chicken meat</li> <li>• Dressing percentage</li> <li>• Value addition of Chicken Meat</li> <li>• Value addition of egg</li> <li>• Grading of Eggs</li> </ul>
		RAWE Component 1- Animal Production interventions	<ul style="list-style-type: none"> <li>• Scientific feeding of Dairy Cattle</li> <li>• Vaccination and Deworming</li> <li>• Production enhancement</li> <li>• Dry cow Therapy</li> </ul>

### Hands-on Training for B.Sc. (Hons.) Horticulture

S.No.	Name of the Department	Hands-on Training courses	
		B.Sc. (Hort.) Course	Hands on training given to students
1.	Agronomy	AGR - 101 Introductory Agrometeorology And Climate Change	<ul style="list-style-type: none"> <li>• Acquiring skill in the use of different instruments and recording data on rainfall / precipitation temperature, pressure, humidity, wind direction and velocity, solar radiation, sunshine hours, evaporation, evapotranspiration, automatic weather station,</li> <li>• Preparation of synoptic charts</li> <li>• Preparation of crop weather calendars,</li> </ul>
		AGR - 102 Weed And Water Management In Horticultural Crops	<ul style="list-style-type: none"> <li>• Determination of soil moisture, field capacity and wilting point</li> <li>• Measurement of irrigation water - units - moisture extraction pattern</li> <li>• Acquiring skill in different surface and sub surface irrigation</li> <li>• Design and operation of sprinkler and drip irrigation</li> <li>• Agronomic method of weed management</li> <li>• Herbicides - Classification</li> <li>• Herbicides - Formulations</li> </ul>
		AGR- 201 Introduction to Major Field Crops	<ul style="list-style-type: none"> <li>• Identification of crops and crop varieties</li> <li>• Nursery preparation, mainfield preparation for field crops.</li> <li>• Seed treatment techniques</li> <li>• Sowing and manuring</li> <li>• Seeding implements</li> <li>• Practical training of farm operations in raising fodder crops, Hay and silage making.</li> </ul>
		AGR - 202 Introductory to Agroforestry	<ul style="list-style-type: none"> <li>• Identification of trees- Seeds and seedlings of important agroforestry species</li> <li>• Seed treatments</li> <li>• Forest nursery types Layout, bed preparation</li> </ul>

			<ul style="list-style-type: none"> <li>• Forest mensuration</li> <li>• Biomass estimation in Energy plantations</li> <li>• Forest plantations and their management</li> </ul>
		AGR- 301 Organic Farming	<ul style="list-style-type: none"> <li>• Raising of vegetable crops organically through nutrient, diseases and pest management</li> <li>• Experiencing organic farming practices</li> <li>• Hands on experience on bio composting, vermicomposting, ITK based biological preparations, bio-inoculants</li> <li>• Grading, packaging, post-harvest management</li> </ul>
2	Agricultural Economics	AEC- 101 Economics and Marketing	Assignments given to the students by the concerned teacher and evaluated at the end of the semester
		AEC 301 Horti-Business Management	Visits to various horticulture based industries to gain practical exposure to start a new business
		AEC 302 Entrepreneurship Development And Business Management	Visits to various agri- business incubators to acquire the technical skills and get acclimatised with the Government policies on Small and Medium Enterprises
3.	Agricultural Extension	EXT - 101 Fundamentals Of Extension Education (1+1)	<ul style="list-style-type: none"> <li>• Organization of group discussion and method demonstration in transfer of technology.</li> <li>• First-hand experience on activities of extension units.</li> <li>• Writing scripts for mass media along with the preparation of agricultural information materials.</li> <li>• Selection and preparation of projected and non-projected visual aids.</li> <li>• Handling of public address equipment, video camera and LCD Projector.</li> </ul>
		EXT -301 Communications skills and personality Development (1+1)	<ul style="list-style-type: none"> <li>• Effective Presentations skills</li> <li>• Organization and participation in group discussions.</li> <li>• Firsthand experience on reading and comprehension skills.</li> <li>• Understanding of importance and insight into creativity skills.</li> </ul>
		RHWE - Rural Horticultural Work Experience (0+10)	<ul style="list-style-type: none"> <li>• Conducting need based method demonstrations, campaigns and exhibitions in the villages.</li> <li>• Organization of field visits and group discussion with farmers.</li> <li>• Organization of farmers/ rural youth training programme.</li> <li>• Participation in village social service work.</li> <li>• Identification of communication media in the transfer of technologies.</li> <li>• Report preparations and presentation</li> </ul>
		EXT 411 -Educational Tour (0+1)	<ul style="list-style-type: none"> <li>• Preparation of tour schedule</li> <li>• Coordinating various tour related activities</li> <li>• Exposure about national level education, research and extension institution.</li> </ul>
4.	Agrl. Microbiology	AGM 101 Introductory Microbiology (1+1)	<ul style="list-style-type: none"> <li>• Better understanding of students about the microscopic world</li> <li>• Students acquire with the basic laboratory techniques and tools of microbiology</li> <li>• Gain knowledge about the role of microorganisms in soil fertility, food and industries.</li> </ul>

		AGM - 201 Fundamentals Of Food Technology (1+1)	<ul style="list-style-type: none"> <li>• Students to know food principles underlying food and Energy.</li> <li>• Knowledge on cereals, pulser, Lipids and oils.</li> <li>• Learn about the composition and spoil of meat, fish and poultry</li> </ul>
		AGM 202 -Environmental Studies And Disaster Management(2+1)	<ul style="list-style-type: none"> <li>• Development of positive attitude of Concern for the surrounding.</li> <li>• Student will acquire potential role on the microorganisms employed in Bioremediation.</li> <li>• Students will acquire technology about solid waste management</li> <li>• Students will aware about current scenario of disaster Management.</li> </ul>
5	Entomology	ENT 101 Fundamentals of Entomology	<ul style="list-style-type: none"> <li>• Dissection of Mouthparts in insects</li> <li>• Field collection, preservation and mounting of insects</li> </ul>
		ENT 202 Insect Pests of Fruit, Plantation, Medicinal and Aromatic Crops	<ul style="list-style-type: none"> <li>• Rearing of pest larvae</li> <li>• Identification of pests</li> <li>• Training on management practices</li> </ul>
		ENT 301 Insect Pests of Vegetable, Ornamental and Spice Crops	<ul style="list-style-type: none"> <li>• Rearing of pest larvae</li> <li>• Identification of pests</li> <li>• Training on management practices</li> </ul>
		ENT 302 Apiculture, Sericulture and Lac Culture	<ul style="list-style-type: none"> <li>• Rearing of silkworm</li> <li>• Maintenance of bee colony</li> <li>• Extraction of honey</li> <li>• Making value added products with honey</li> </ul>
6	Genetics & Plant Breeding	GPB 101 Introductory Crop Physiology	<ul style="list-style-type: none"> <li>• Measurement of leaf area</li> <li>• Measurement of stomatal index and frequency</li> <li>• Measurement of plant water potential</li> <li>• Growth analysis</li> <li>• Measurement of relative water content</li> </ul>
		GPB 102 Fundamentals of Genetics and Cytogenetics	<ul style="list-style-type: none"> <li>• Study of microscopes</li> <li>• Stages of cell division - Mitosis</li> <li>• Stages of cell division - Meiosis</li> <li>• Phenomenon of Crossing over using colour clay.</li> <li>• Phenomenon of dominance and recessivity.</li> <li>• Problems on linkage and crossing over.</li> </ul>
		GPB 201 Fundamentals of Plant Breeding	<ul style="list-style-type: none"> <li>• Plant breeding kit</li> <li>• Floral biology and emasculation in major crops</li> <li>• Male sterility and self incompatibility</li> <li>• Basic statistics-calculation of PCV, GCV, heritability and genetic advance</li> </ul>
		GPB 301 Seed production of vegetables, tuber and spices crops	<ul style="list-style-type: none"> <li>• Seed structure</li> <li>• Germination test using different media</li> <li>• Tetrazolium test</li> <li>• Paper piercing test</li> <li>• Brick gravel test</li> <li>• Physical purity test</li> <li>• Seed extraction in vegetables</li> </ul>
7	Horticulture	HOR 101 Fundamentals of Horticulture	<ul style="list-style-type: none"> <li>• Planning, layout and planting of fruit trees</li> <li>• Identification and use of tools and implements in orchard</li> <li>• Preparation of different media used for horticultural crops</li> <li>• Practicing training and pruning methods in</li> </ul>

			<ul style="list-style-type: none"> <li>horticultural crops</li> <li>Field application of plant growth regulators and fertilizers in fruit and vegetable crops</li> </ul>
		HOR 102 Plant Propagation and Nursery Management	<ul style="list-style-type: none"> <li>Preparation of different nursery beds and seed sowing</li> <li>Practicing seed treatment methods in horticultural crops</li> <li>Practicing vegetative propagation techniques – hard wood cutting and air layering</li> <li>Practicing vegetative propagation techniques – approach grafting and T-budding</li> <li>Acquiring hands on training in micropropagation</li> </ul>
		HOR 103 Tropical and Sub Tropical Fruits	<ul style="list-style-type: none"> <li>Identification of varieties of mango and banana</li> <li>Identification of varieties of sapota and guava</li> <li>Sucker treatment in banana</li> <li>Visiting commercial orchards to learn propagation and planting of fruit trees</li> <li>Preparation and foliar application of plant growth regulators</li> </ul>
		HOR 104 Tropical and Sub Tropical Vegetable Crops	<ul style="list-style-type: none"> <li>Practicing to establish a kitchen garden</li> <li>Preparation of field and sowing of direct sown vegetable crops</li> <li>Practicing transplanting of vegetable crops</li> <li>Identification of nutrient deficiency and physiological disorders in vegetable crops under field condition</li> <li>Visit to commercial vegetable growing area and markets</li> </ul>
		HOR 105 Potato and Tuber Crops	<ul style="list-style-type: none"> <li>Identification and description of potato and tuber crops</li> <li>Field preparation and planting of cassava</li> <li>Studying nutrient deficiency in tuber crops</li> <li>Analyzing nutritional requirement of tuber crops</li> <li>Judging maturity indices of tuber crops</li> </ul>
		HOR 106 Growth and Development of Horticultural Crops	<ul style="list-style-type: none"> <li>Identification various types of plant growth</li> <li>Measurement of plant growth</li> <li>Various methods of breaking seed and bud dormancy</li> <li>Identification of deficiency symptoms in horticultural crops</li> <li>Identification of physiological disorders in horticultural crops</li> <li>Estimation of quality attributes of fruits</li> </ul>
		HOR 201 Temperate Fruit Crops	<ul style="list-style-type: none"> <li>Identification of varieties of apple</li> <li>Identification of varieties of plums</li> <li>Identification of varieties of walnut</li> <li>Estimation of quality parameter TSS by hand refractometer in various apple varieties</li> <li>Visit to temperate fruit orchards</li> </ul>
		HOR 202 Temperate Vegetable Crops	<ul style="list-style-type: none"> <li>Practicing nursery preparation and sowing of temperate vegetables in winter season</li> <li>Identification of nutritional disorders in temperate vegetable crops</li> <li>Identification of physiological disorders in temperate vegetable crops</li> <li>Judging maturity indices and harvesting of temperate vegetables</li> </ul>

			<ul style="list-style-type: none"> <li>• Visit to exotic temperate vegetable fields</li> </ul>
		HOR 203 Ornamental Horticulture	<ul style="list-style-type: none"> <li>• Identification of trees and its utilization in landscaping</li> <li>• Identification of shrubs and climbers and its utilization in landscaping</li> <li>• Establishment of vertical garden</li> <li>• Preparation of veni, flowerboquet and creation of rangoli with flowers</li> <li>• Visit to floriculture nursery units</li> </ul>
		HOR 204 Dryland and Silvi Horticulture	<ul style="list-style-type: none"> <li>• Practicing assessment of maturity and post harvest handling of dry land fruit crops</li> <li>• Identification of agroforestry trees and its utilization</li> <li>• Visit to woodlots of casuarinas and eucalyptus</li> <li>• Visit to agroforestry system in farmers holding</li> <li>• Visit to watershed areas</li> </ul>
		HOR 205 Breeding of vegetables, tuber and Spice crops	<ul style="list-style-type: none"> <li>• Identification of inflorescence types in vegetable crops</li> <li>• Identification of sex forms in vegetables</li> <li>• Identification of mechanisms favouring self pollination in vegetables</li> <li>• Identification of mechanisms favouring cross pollination in vegetables</li> <li>• Hands on training on emasculation and F<sub>1</sub> hybrid seed production</li> </ul>
		HOR 206 Spices and Condiments	<ul style="list-style-type: none"> <li>• Identification of spices and condiments</li> <li>• Raising of condiments</li> <li>• Visits to commercial spice gardens</li> <li>• Visits to processing units of spices</li> <li>• Visit to essential oil extraction units</li> </ul>
		HOR 207 Principles of Landscape Architecture	<ul style="list-style-type: none"> <li>• Practicing different styles of garden</li> <li>• Practicing the art of topiary and trophy</li> <li>• Establishment of hedges, edges and carpet beds</li> <li>• Practicing indoor gardening</li> <li>• Visits to public gardens and botanical gardens</li> </ul>
		HOR 208 Breeding of Fruit and Plantation Crops	<ul style="list-style-type: none"> <li>• Floral biology and crossing techniques in mango and banana</li> <li>• Floral biology and crossing techniques in sapota</li> <li>• Studying crossing techniques in coconut</li> <li>• Raising and evaluation of hybrid seedlings</li> <li>• Preparation and use of physical and chemical mutagens</li> </ul>
		HOR 209 Orchard and Estate Management	<ul style="list-style-type: none"> <li>• Practicing different planting systems of orchard</li> <li>• Studies on cropping systems in orchards</li> <li>• Practicing intercultural operations in orchard crops</li> <li>• Laying out irrigation systems in orchard</li> <li>• Visit to different local fruit orchard</li> </ul>
		HOR 301 Commercial Floriculture	<ul style="list-style-type: none"> <li>• Practicing vegetative propagation techniques in flower crops – jasmine and rose</li> <li>• Hands on experience of some pruning techniques like pinching and disbudding in chrysanthemum</li> <li>• Practicing application of plant growth regulators for modifying the growth and improving the flower yield</li> <li>• Visit to flower growing areas to get expertise in loose flowers and cut flowers</li> </ul>

			<ul style="list-style-type: none"> <li>• Visit to flower markets</li> </ul>
		HOR 302 Precision Farming and Protected Cultivation	<ul style="list-style-type: none"> <li>• Study of different types of green houses</li> <li>• Study of different cooling systems used in green houses for cultivation of horticultural crops</li> <li>• Study of different heating systems used in green houses for cultivation of horticultural crops</li> <li>• Practicing certain special cultural practices for flower crops under protected cultivation</li> <li>• Visits to commercial green houses</li> </ul>
		HOR 303 Post Harvest Management of Horticultural	<ul style="list-style-type: none"> <li>• Determining maturity stages of commercial fruits and vegetables</li> <li>• Practicing Packaging and storage of fruits, vegetables and flowers</li> <li>• Acquiring knowledge about Edible wax coating of fruits and vegetables</li> <li>• Practicing different methods to extend the Vase life of cut flowers</li> <li>• Visits to cold storage/grading and packing units</li> </ul>
		HOR 304 Breeding and Seed Production of Flower and Ornamental Crops	<ul style="list-style-type: none"> <li>• Seed collection in ornamental plants</li> <li>• Practicing methods of seed extraction in ornamental plants</li> <li>• Floral biology, selfing, emasculation and crossing technique on zinnia</li> <li>• Visit to ornamental seed production plots</li> <li>• Visit to commercial flower seed production industries</li> </ul>
		HOR 305 Production (Vegetable crops / Flower crops	<ul style="list-style-type: none"> <li>• Practice in raising nursery for transplanted vegetables</li> <li>• Field preparation and practicing application of fertilizers</li> <li>• Practicing irrigation and fertigation practices in vegetable crops</li> <li>• Judging maturity indices and practicing harvesting of vegetable crops</li> <li>• Acquiring knowledge in seed extraction, processing, cleaning and packaging</li> </ul>
		HOR 306 Plantation Crops	<ul style="list-style-type: none"> <li>• Visit to tea board and tea plantation</li> <li>• Visit to coffee board and coffee plantation</li> <li>• Visit to rubber plantation and processing units</li> <li>• Practicing coconut mother palm selection</li> <li>• Visit to coconut by-product industries</li> </ul>
		HOR 307 Medicinal and Aromatic Crops	<ul style="list-style-type: none"> <li>• Practicing propagation of aloe</li> <li>• Raising seedlings of periwinkle</li> <li>• Propagation and nursery techniques for gloriosa</li> <li>• Field preparation and planting of mint.</li> <li>• Field preparation and planting of vetiver.</li> </ul>
		HOR 308 Processing of Horticultural Crops	<ul style="list-style-type: none"> <li>• Preparation of unfermented beverages</li> <li>• Bottling of fruits beverages and Minimal Processing of fruits and vegetables</li> <li>• Preparation of pickles and chips</li> <li>• Preparation of sauces, chutneys and ketchup</li> <li>• Preparation of jam, jelly, marmalade, candies and preserves</li> </ul>
8	Plant Pathology	PAT 101- Fundamentals of Plant Pathology	<ul style="list-style-type: none"> <li>➤ Handling of Microscope</li> <li>➤ Cross section from disease specimens</li> <li>➤ Microscopic identification of fungal spores and fruiting bodies</li> <li>➤ Preparation of Mounting Slides from disease</li> </ul>

			specimens ➤ Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.
		PAT 201- Diseases of Vegetable, Ornamental and Spices Crops	➤ Cross section from disease specimens ➤ Microscopic identification of fungal spores and fruiting bodies ➤ Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations. ➤ Preparation of Mounting Slides from disease specimens
		PAT 202- Nematode Pests of Horticultural Crops and their Management	➤ Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations. ➤ Nematode Isolation and identification
		PAT 301- Diseases of Fruit, Plantation, Medicinal and Aromatic Crops	➤ Handling different types of sprayers ➤ Different methods of application of fungicides and bio control agents ➤ Integrated Disease management practices is taught to the UG students with an objective of gaining knowledge on various aspects on crop disease management. ➤ Identification of bio agents, impact of natural products on crop disease management. ➤ Bio-efficacy studies on new generation fungicides against crop diseases.
9	Soil Science & Agril. Chemistry	SAC 112- Principles of Analytical Chemistry	<ul style="list-style-type: none"> <li>• Preparation of laboratory reagents</li> <li>• preparation of primary and secondary standards</li> <li>• Gravimetric analysis</li> <li>• Instrumental analysis-potentiometry, conductometry, colorimetry, spectrophotometry</li> <li>• Radioactivity - radiation decay, detection and measurements</li> </ul>
		SAC 124 - Fundamentals of Biochemistry	<ul style="list-style-type: none"> <li>• Qualitative tests for Glucose, Fructose</li> <li>• Qualitative tests for Sucrose, Lactose, Maltose, Starch and Dextrin</li> <li>• Quantitative estimation of Carbohydrates</li> <li>• Analysis proteins, lipids- various</li> <li>• chemical constants</li> <li>• assay of Vitamins</li> </ul>
		SAC 213 Fundamentals of Soil Science	<ul style="list-style-type: none"> <li>• Identification of rocks and minerals</li> <li>• soil profile study</li> <li>• collection and processing of soil samples</li> <li>• Analysis of soil physical and chemical properties</li> <li>• Analysis of exchangeable cations in soil, buffering capacity of soil</li> </ul>
		SAC 315 Soil Fertility, Fertilizers and Manures	<ul style="list-style-type: none"> <li>• Identification of deficiency and toxicity symptoms</li> <li>• Manufacturing technology of urea, ammonium sulphate, SSP, DAP, MOP and SOP. Complex, mixed fertilizers, customized / Specialty fertilizers</li> <li>• Manures analysis , Composting techniques.</li> <li>• Soil health study</li> <li>• Establishment of soil testing laboratories</li> </ul>

#### 6.5.4.5. Examination and Evaluation Process

##### B.Sc. (Hons.) Agriculture / Horticulture

- ❖ Mid-semester examinations are conducted by the Dean, Faculty of Agriculture. The schedule, hall allotment and invigilators are prepared by Dean's office and circulated. Centralized question paper setting and an internal evaluation system is followed for mid-semester examination. The evaluated answer scripts are shown to the students and marks displayed on the university website to ensure transparency. Students who fail to appear for the mid-semester examination due to genuine/official reasons are permitted to take up missing examination of the particular course.
- ❖ Final practical examinations are conducted as per schedule proposed by the Dean, Faculty of Agriculture and approved by the Controller of Examinations. Two examiners appointed by the university, nominated by the Head of the Department and recommended by the Dean will conduct the practical examination. These examiners are assisted by an associate examiner in the conduct of examinations.
- ❖ Final theory examinations are conducted by the Controller of Examinations. Each session of examination is monitored by a Chief Superintendent (Professor Level) and hall invigilators from other Faculties of the University. The question papers are set by the External Examiners alone. Central valuation system is followed with strict monitoring and 50% internal and external examiners are drafted for this purpose. The answer scripts are barcoded to maintain confidentiality. The marks are entered in Optical Magnetic Reader (OMR) sheets to process electronically and to publish results swiftly.
- ❖ The examiners for undergraduate programme are proposed by the Dean, Faculty of Agriculture with the approval of the Controller of Examinations from the list of examiners approved by the Board of Studies.
- ❖ After central valuation, the results are scrutinized by the Board of Examiners involving few external and internal examiners during Board of Examiners meeting convened by the Dean, Faculty of Agriculture. Results are published in the University website by the Controller of Examinations.
- ❖ Re-valuation is also allowed for the needy students.
- ❖ After completion of each semester, the students are given the statement of marks by the Controller of Examinations. At the end of the programme, the consolidated transcript is issued to the students by the Controller of Examinations.

##### Post Graduate Programme

- ❖ Every teacher handling a subject conducts Mid-semester examinations as per the scheme drawn by the Head of the Department/PG coordinator and evaluate the answer scripts. The evaluated answer scripts are shown to the students. Students who fail to appear for the mid-semester examinations due to genuine/official reasons are permitted to take up the missing examination of the particular course.
- ❖ Final practical examinations are conducted separately towards the end of each semester by adopting a separate schedule proposed by the Head of the Department and approved by the Controller of Examinations. Two examiners appointed by the University, nominated by the Head of the Department conduct the practical examination separately towards the end of the semester. These examiners are assisted by an associate examiner in the conduct of examinations.
- ❖ Final theory examination is conducted before the practical examination by the Controller of Examinations. Each session of examination is monitored by a Chief Superintendent (Professor Level) and hall invigilators from other faculties of the University. Question papers are set by the external examiners alone. The final theory and practical examinations are evaluated by two examiners (one internal and the other external). Answer scripts are barcoded to maintain confidentiality. The marks are entered in Optical Magnetic Reader (OMR) sheets to process electronically and publish results swiftly.
- ❖ Re-valuation is also allowed for the needy students.

- ❖ The examiners for PG programme are proposed by the Head of the Department with the approval of the Controller of Examinations from the list of examiners approved by the PG Board of Studies.
- ❖ After valuation, the results are scrutinized by the PG Board of Examiners involving external and internal examiners during Board of Examiners meeting convened by the Head of the Department. Results are published on the University website by the Controller of Examinations.
- ❖ After completion of each semester, the students are given the statement of marks by the Controller of Examinations. At the end of the programme, the transcript will be prepared by Controller of Examinations and issued to the students.
- ❖ The qualifying examination is conducted for the students who have passed the major courses. The qualifying examination consists of written and oral examinations. Controller of Examinations nominates the external examiners from the panel of five examiners given by the HOD.
- ❖ The advisory committee of each student evaluates the progress of the thesis research work as per the approved programme and monitors registers and awards Satisfactory / Unsatisfactory, depending upon the quantity and quality of work done by the student.

#### Ph.D. Programme

- ❖ There will be two examinations viz., first test and final examination. Wherever the course has practical, there will be a final practical examination also.
- ❖ The duration of first test will be of one and half an hour and final examinations in theory and practical will be conducted for three hours each.
- ❖ The first test will be conducted by course teachers during the ninth week of the semester as per the scheme drawn by HOD, evaluate and send the marks obtained by the students to the Director, DARE through HOD within seven working days.
- ❖ There will be final examination separately for theory and practical which will be conducted by the University. Each final theory and practical examinations will be evaluated by two examiners (one will be the course teacher and another will be among the senior faculty of the Department).

The distribution of marks will be as indicated below:

S. No	Examination	Course with practical	Course without practical	Course without theory
1	First Test	30	30	30
2	Final theory	40	70	-
3	Final practical	30	-	70
	Total	100	100	100

The question paper model and distribution of marks for first test and final theory examinations are as follows:

First Test (30 marks) (1.5 hours duration)

1	Definitions/concepts	5 out of 7	(5 x 1)	5 marks
2.	Short notes	5 out of 7	(5 x 3)	15 marks
3	Essay type	2 out of 3	(2 x 5)	10 marks

Final Theory: Course without practical (70 marks) (3 hours duration)

1.	Short notes	5 out of 7	(5 x 4)	20 marks
2	Essay type	5 out of 7 (Four questions must represent K6 level of Bloom's taxonomy)	(5 x 10)	50 marks

Final Theory: Course with Practical (40 marks) (3 hours duration)

1.	Short notes	5 out of 7	(5 x 2)	10 marks
2	Essay type	5 out of 7	(5 x 6)	30 marks

#### Minimum Marks for Pass

The student should secure a minimum of 60 per cent marks separately in the theory and practical and an aggregate of 70 per cent to secure a pass in the subject. Each subject shall carry a maximum of 100 marks for purpose of grading. The grading will be done as grade point, i.e., the percentage of marks earned in a subject is divided by 10. The grade point is expressed on a 10 point scale upto two decimals.

Students who secure marks below 70 per cent in a subject will be awarded 'RA' grade and students without having the required minimum attendance of 80 per cent will not be allowed to write the final examination and they will be awarded 'E' grade. Students who secure 'RA' grade should appear for re-examination in the subsequent semester. If a student secured 'E' grade, he/she has to re-register and attend the course again during the next academic year.

#### Minimum GPA Requirement

A Ph. D. student, to continue his/her studies in the University, should maintain certain minimum Average Grade Point prescribed here under:

- a) Earn a Grade Point of 7.00 for a pass in each subject.
- b) For purpose of continuing as a student in the university, a candidate is required to earn a Grade Point Average of not less than 7.00 at the end of each semester.

#### Re-Examination

Re-examination is permitted only for the final theory and practical examinations. The students who secure 'RA' grade are permitted to write the re-examinations as and when conducted with the permission of university.

The re-examination fee as prescribed by university per course is to be paid on or before the prescribed date. A student is permitted to write the final theory and practical examinations only two times during the course period of three years excluding the regular final examination.

In the event of a student who fails to secure a pass in the two re-examinations permitted, he/she has to re-register for the course along with juniors. The marks secured in first test will be retained and the student should produce the practical record during re-examination. The registration for the re-examination shall be done after first test on the date specified by the Director, DARE. Each registration is considered as an attempt even if the student absents for the examination.

#### Return of Valued Answer Papers

The valued answer papers of first test shall be shown to the students after the examination. Discrepancies if any, in awarding marks, the student can approach the teacher concerned immediately for rectification.

The answer paper should be retained with the course teacher for six months and then disposed off. Evaluated final theory papers have to be retained up to six months by the Director, DARE after the conduct of examination and then disposed off.

Seminar is compulsory for all students and each student should register and present two seminars each with 0+1 credits. A student can register only one seminar in a semester and only after

successful completion of the first seminar, the student is permitted to register for the second seminar.

Details	Marks
Coverage of literature	40
Presentation	30
Use of audio-visual aids	10
Capacity to participate in discussion and answer the questions	20
Total	<b>100</b>

### Qualifying Examination

Only those students who successfully complete the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of only Viva-voce examination. The qualifying examination should be conducted before fourth week from the commencement of the third semester.

#### Minimum requirement for qualifying Viva-voce Examination

The students who have completed all the courses and earned a grade point average of not less than 7.0 will be permitted to appear for the qualifying examination. Students who do not satisfy these requirements shall not be permitted to take up the qualifying examination. The qualifying examination will be conducted after the successful completion of course work.

### Qualifying Viva-Voce Examination

The evaluation should cover both the research problem and theoretical background to execute the project. This shall assess the aptitude of the student and suitability of the student for the given research topic.

The RAC shall conduct the qualifying viva-voce examination with one external member, who shall be a specialist in the subject from outside the university.

#### Evaluation of Thesis Research

- After assigning the research problem, for each semester, the student has to submit a detailed programme of work to be carried out by him/her during the semester in the prescribed proforma. After scrutiny and approval, a copy of the research programme has to be given to the student for carrying out the work during that semester.
- Attendance register must be maintained in the department by HOD for all the students to monitor whether the student has 80% of attendance in research.
- The student has to submit his/her research observation note book to the Research Supervisor, who will scrutinize the progress and sign the note book with remarks as frequently as possible. This note book will form the basis for evaluation of research progress.
- After completion of 80% attendance for research and on or before the last day of the semester, the research scholars, shall submit Progress Reports in the prescribed format duly endorsed by the Research Advisory Committee to the Director, DARE until they submit their synopsis.
- Failure to submit the progress reports shall entail automatic cancellation of registration.
- The minutes of the meeting of the Research Advisory Committee along with enclosures will be sent to the Director, DARE.

- Candidates who are recipients of fellowships such as JRF/SRF directly from any of the funding agencies/ shall send the progress reports and the utilization certificates in the format prescribed by the respective funding agency through proper channel.
- The procedure of evaluating research credits under different situations is explained hereunder.

The evaluation system followed in the faculty is detailed below.

Sl. No.	Name of the Programme	Evaluation criteria
1	B.Sc. (Hons.) Agriculture	Course work, Written examination and Practical examination.
2	B.Sc. (Hons.) Horticulture	Course work, Written examination and Practical examination.
3	M.Sc. (Ag.)/M.Sc. (Hort.) M.B.A. (Agri.Business)	Course work, Written examination, Practical examination, Qualifying examination and Viva-voce, Thesis evaluation and Viva-voce
4	Ph.D. (Agri.)/(Hort.)/ ABM	Course work, Written examination, Practical examination, Qualifying examination and Viva-voce, Thesis evaluation and Viva-voce

Methodology followed to improve the quality of Evaluation process

- OMR (Optical Mark Recognition) sheets have been introduced to avoid errors in manual entry of marks and ensure 100% accuracy in data entry
- Electronic coding and decoding of candidates' details and course and program particulars in OMR answer script has resulted in a faster result publication process
- Bar coded dummy number system has been replaced by conventional dummy number system to ensure increased confidentiality
- In-house designed software are in place to process the OMR answer scripts and mark statements
- SMS Notification, for urgent messaging, if any needed, during examination times to all the stakeholders
- Email Facility for faster and faceless grievance redressing system
- CCTV camera surveillance in central examination halls and central valuation blocks
- System of e-communication, highly secured, confidential, password-protected for question paper setting and thesis evaluation
- Urkund' software mandatory for plagiarism check of theses, research articles, seminar and conference papers, books and book chapters
- Bloom's Taxonomy and Blooms Technology+ both in the CIA and end- semester examinations paving way for effective assessment of outcome attainment and graduate attributes
- Automated examination procedure significantly using indigenous and custom-made software enhancing utility
- Website Uploading of Examination schedule and notification informing registration for Examination, enabling quick and accessible dissemination and helping the students to plan and prepare well in advance leading to better performance of students.
- Online portal for examination registration to enable the students to complete the process faster and easier
- Mandatory Electronic payment mode for every fee-payment in the University
- Online filling of requests for revaluation of answer scripts helping the students and university in saving time and environment by reduced use of paper
- Online uploading of Continuous Internal Assessments of performance of students
- Online downloadable publication of semester-results helping students to view their results instantly from anywhere, anytime

- Online tracking of research-registration progress and thesis evaluation (Foreign and Indian) status enabling research scholars well informed Through e-SANAD facility, a novelty under Digital India initiative, the University provides contactless, faceless, cashless, and paperless document verification/ attestation/ apostle service for its graduates across the globe

The Faculty of Agriculture has adopted 10-point OGPA scale from the academic session 1992-93 onwards.

Sl. No.	Name of the Programme	Minimum GPA for completing a course	Minimum OGPA for completing a Degree
1	B.Sc. (Hons.) Agriculture	6.5	6.75
2	B.Sc. (Hons.) Horticulture	6.0	6.5
3	M.Sc. (Ag.)/M.Sc. (Hort.)/ M.B.A. (Agri. Business)	6.0	6.5
4	Ph.D. (Ag/Hort./ABM)	7.0	7.5

#### B.Sc. (Ag.)

Details		2017-18	2018-19	2019-20	2020-21	2021-22
Total No. of candidates appeared for exam		1611	966	940	836	1088
Total No. of candidates obtained degree		1200	952	921	804	1026
Grade-wise distribution of passed out candidates	6.0-6.9	249	13	3		
	7.0-7.9	242	216	195	165	59
	8.0-8.9	638	660	652	610	927
	9.0-10.0	71	63	71	29	40

#### B.Sc. (Hort.)

Details		2017-18	2018-19	2019-20	2020-21	2021-22
Total No. of candidates appeared for exam		64	63	62	57	92
Total No. of candidates obtained degree		51	63	62	57	91

#### Post Graduate Programmes

Details	2017-18		2018-19		2019-20		2020-21		2021-22	
	Appeared	Passed								
Total No. of candidates										
M.Sc. (Ag.) Agronomy	35	34	33	31	34	31	27	25	29	29
M.Sc. (Ag.) Agricultural Economics	19	19	20	20	15	15	14	14	10	10
M.B.A. (Agri business)	10	10	9	9	5	5	3	3	7	7
M.Sc. (Ag.) Agricultural Extension	20	20	20	20	20	20	17	17	15	15
M.Sc. (Ag.) Agricultural Microbiology	13	13	16	14	15	15	8	8	14	14
M.Sc. (Ag.) Entomology	20	20	20	19	17	17	17	17	17	17
M.Sc. (Ag.) in Genetics & plant breeding	24	24	25	25	24	24	25	25	14	14
M.Sc. (Ag.) in Seed science & technology	10	10	10	10	10	10	5	5	9	9
M.Sc. (Ag.) Molecular Biology and Biotechnology	5	5	5	5	4	4	4	2	7	7
M.Sc. (Hort.) in Floriculture and Landscaping	10	10	10	10	10	10	9	9	8	8
M.Sc. (Hort.) in Fruit Science	9	9	10	10	10	10	6	6	9	9
M.Sc. (Hort.) in Vegetable Science	10	10	10	10	10	10	7	7	10	10
M.Sc. (Hort.) in Plantation, Spices, Medicinal and Aromatic crops	5	5	5	4	5	5	3	3	9	9

M.Sc. (Ag.) Plant Pathology	18	18	20	20	18	18	18	18	17	17
M.Sc. (Ag) Soil Science and Agricultural Chemistry	14	14	16	15	11	11	6	6	10	10

#### 6.5.4.6. NCC/NSS/YRC

##### NCC

National Cadet Corps (NCC), National Service Scheme (NSS) and Youth Red Cross (YRC) function effectively in the Faculty of Agriculture. NCC and NSS are included in the course curriculum and it is mandatory for the students to register for NCC or NSS programme. The number of students in each unit is 100 (67 boys + 33 girls), 1000, and 1000 in NCC, NSS (10 units) and YRC, respectively.

Faculty of Agriculture is the first to start the women NCC platoon during 2012 in the university as well as in this district. Women cadets of the Faculty have won many accolades and six of our cadets took part in Republic Day Parade held at New Delhi during 2016 and 2017 and one student was selected for International cultural exchange programme. One cadet won first place at the regional level and second place at the national level in essay competition on Swatch Bharath Abiyan during 2017.

##### NCC Activities

Year	No. of activities	Participants
2017-18	9	235
2018-19	14	366
2019-20	17	355
2020-21	22	756

##### NSS

NSS wing of the Faculty of Agriculture is coordinated by 7 officers appointed among the faculty staff. About 700 number of student volunteers from I and II B.Sc. (Ag.)/(Hort.) including boys and girls dedicated themselves for social services. The services rendered by National Service Scheme are in the areas such as AIDS awareness programmes, blood donation camps, health camps, mass literacy campaigns, improved farming systems, skill development in rural youth, technology transfer from lab to land to improve the livelihood of rural poor, training programme on agrarian issues, coastal clean-up campaigns, plastic prevention and other socially relevant activities.

S.No	Name of the Programme officers	Unit
1.	Dr.P.Jeyaseelan, NSS Coordinator	All units
2.	Dr.Muthukumaran, Asst Prof of Entomology	Unit -11
3.	Dr.R.Sudhagar, Asst.Prof. of Horticulture	Unit - 3
4.	Dr.Anandan, Asst.Prof of Agronomy	Unit -2
5.	Dr.Sendhilvelan, Asst.Prof. of Soil Science &Agrl.Chem	Unit -14
6.	Dr.Muthukumara raja, Asst.Prof. of Soil Science &Agrl.Chem	Unit -31
7.	Dr.K.Sivakumar, Asst.Prof. of Microbiology	Unit -17
8.	Dr.T.Rajpraveen, Asst.prof of Agrl Extension	Unit -16

##### NSS Activities

Year	No. of activities	Participants
2017-18	20	5247
2018-19	14	4503

2019-20	11	1719
2020-21	9	11

## YRC

Youth Red Cross unit of the Faculty of Agriculture is acclaimed for its achievement in mega blood donation camps and received an appreciation certificate from Cuddalore District Collector. Besides this, the unit concentrates on tree plantation, road safety awareness, disaster management, and rescue operations.

### YRC Activities

Year	No. of activities	Participants
2017-18	3	183
2018-19	2	130
2019-20	2	225
2020-21	1	50
2021-22	11	855

### 6.5.4.7. Language Laboratory

Students undergo a course on Comprehension and communication skills in English with 2+0 course credit offered by Department of English which has facilities to improve the skill set of learners. Practical training is given to improve verbal and oral communication skills. Apart from class room teacher led training, students are encouraged to use e- learning materials available in the reference section of the central library which has a rich collection of materials. Self learning modules on TOFEL, IELTS, GRE and GMAT are accessible to the students in the central library. Students are also given free access to use the computer facilities in the Faculty of Agriculture to improve their communication skills.

The University is proved of its two functional, State of the art language laboratories to foster linguistic prescience and communication skills of the students. These laboratories are well-equipped with adequate number of computers latest softwares and other necessary tools. The laboratories are open on all working days and access to students on prior appointment. There are dedicated faculty and technical staff who assist the students in these labs.

The Language Laboratory, Annamalai University, caters to the diverse needs of the students in their attempts matter proficiency over communication and linguistic skills, especially in English. The Lab is spacious enough to accommodate 40 students simultaneously. The Laboratory 16X20 is also air conditioned and functioning in a sound -proof cabin

#### Phonetic Laboratory

The Phonetic Laboratory helps students to acquire precision in pronunciation. The audio-visual aids in the laboratory are helpful to students the second language learners, to see the words on the screen and listen to the sounds with the help of ear phones. There is also provision for

practicing the sounds of English language along with the recorded voices. Faculty from the Department of Linguistics is available to offer their services to aspiring learners.

#### 6.5.4.8. Cultural Center

The **Agricultural Association** is run by the students and for the students. The agricultural association provides a platform to showcase the inherent and hidden potential of students and also provides an opportunity for inter agricultural student interactions. Nominated student secretaries are ably supported by staff advisors to plan and execute various activities of the association. There will be a staff advisor separately for literary, cultural, sports activities. Commencement day, to welcome the fresher, Annual Cultural, Literary and Sports and Games are organized every year. In addition to these intramural activities, state-level Inter-Agricultural games meet is also organized (SPORAG) to facilitate inter-college student interaction and cultural exchange. Apart from this, the association also sponsors and encourages students' participation in ICAR sports meet and Inter collegiate tournaments and cultural competitions. Last year the students celebrated the PONGAL festival in a unique and grand manner for the first time in the history of the University. Every year Agricultural faculty cultural contingent offers a programme during Independence Day and Republic Day and farmers' festival.

Sl. No.	Details	Students benefited
1.	TALENTIA, TNAU, AC & RI, Madurai	25
2.	Cultural carnival	34
3.	Dimensions & social diffusion of innovation of business development competition	6

#### AIASA

The students are also encouraged to participate in professional academic student associations at the national level. For example, Students of the Faculty of Agriculture occupy State level leadership in **All India Agricultural Student Association** and have organized national and International conferences.

All India Agricultural Students Association (AIASA) and the Faculty of Agriculture jointly organized a two days national conference on Sustainable Agriculture and Rural Livelihoods on 26<sup>th</sup> and 27<sup>th</sup> April, 2019. All India Agricultural Students Association (AIASA) and Faculty of Agriculture, Annamalai University organized an International conference on "Recent Trends in Agriculture towards Food Security and Rural Livelihood" 3<sup>rd</sup> & 4<sup>th</sup> January, 2020. Three hundred and sixty papers were received for discussion in the selected sub-themes for deliberation during the Conference

All India Agricultural Students Association (AIASA) - Tamil Nadu, Faculty of Agriculture, Annamalai University in collaboration with IQAC organized international conference on challenging perspectives in agricultural and horticultural research for sustainable development on 9<sup>th</sup> October, 2021 in Faculty of Agriculture, Annamalai University.

#### 6.5.4.9. Personality Development

The Faculty of Agriculture Training, Placement and Entrepreneurship Cell offers career counseling to agricultural graduates. Training programme are conducted for entrepreneurship and personality development by the University's Business School. It invites renowned academicians and entrepreneurs including alumni to guide students in their career path. Soft skill development has been introduced as part of the curriculum. Personality development and soft skill development programmes are regularly conducted in the campus for enhancing the personality as well as the soft skills ability of the students. Every year, the outgoing students are provided opportunities to interact with IAS & IPS officers, members from Financial institutions, technocrats and entrepreneurs. The agricultural association has the tradition of inviting distinguished alumni who would motivate the students' right at the entry to the agricultural faculty and also serve as role model.

Year	No. of activities	Participants
2017-18	10	974
2018-19	2	183
2019-20	18	1123
2020-21	3	186
2021-22	9	626

#### 6.5.5. PHYSICAL FACILITIES

##### 6.5.5.1. Hostels

Nine hostels are available in the University to accommodate the UG, PG and Ph.D. students. The boy students are accommodated in various hostels viz., Kurinji Illam (Agri hostel), E2 Hostel (Thendral Illam) & E3 Hostel (Mullai Illam). The girl students are accommodated at Thamarai illam, Rose Hostel & Vaigai Hostel.

The details of number of hostels available for boys and girls, total capacity and number of students accommodated per room are given below

Sl. No.	Hostel Name	Student	No. of Rooms	Inmate s/ Room	2017 -18	2018 - 19	2019- 20	2020- 21	2021- 22
1.	KurinjiIllam	Boys	107	2/3/5	285	323	279	346	303
2.	MullaiIllam	Boys	252	2/3/4	745	633	689	494	469
3.	ThendralIllam	Boys	151	2/3/4	488	431	376	398	456
4.	ThamaraiIllam	Girls	589	3/4	2458	2575	2435	2164	1792
5.	Vaigai Illam	Girls	65	5	291	306	299	0	320
6.	Rose Hostel	Girls	284	3/4/5	915	862	1002	1136	1027
<b>Total</b>			<b>1448</b>	<b>-</b>	<b>5182</b>	<b>5130</b>	<b>5080</b>	<b>4538</b>	<b>4367</b>

Totally 16 mess with modernized kitchen and RO drinking water provide hygienic food to hostellers. Facilities for indoor games like carom, chess and table tennis, reading room/TV hall, Wi-Fi are available in each hostel for the students. Canteens are also available in Faculty of Agriculture and University premises near the hostels. CCTV camera fixed at hostel and campus premises for security purpose. Day and night watchmen are employed to ensure the students safety in the hostel and campus.

Council of warden headed by a convener take integrated steps to provide good stay as well as hygeneic quality food. The day to day affairs of hostel are managed by a team of staff (block incharge and mattern) under the guideness of deputy warden and warden. A separate monitoring committee is also functioning to supervise the quality of food, sanitation, etc.,

A health care centre is available in the university premises for medical emergencies. Indian Bank, ICICI Bank, Central Bank of India, Karur Vysya Bank and ATMs of seven Banks, two Post Offices and two book shops are in the University premises. Students’ stores are functioning near the hostel. In this store, the students can get stationary items, snacks, ice creams, cool drinks, cosmetic materials *etc.,*

Transport facilities to cater to the needs of the students are available. The government and private buses are available from villages to University. Two buses and two vans: available in the faculty are used for field trip and institution visits. Ramp/lift facility for persons with disabilities is available in Tech- Park.

### Health Services

Rajah Muthiah Medical College Hospital (RMMCH), with built in area of around 6,52,000 sq.ft. and 1400 beds and 17 modern A/C operation theatres working round the clock takes care of the health of the students free of cost. The outpatient department of the hospital located in the close vicinity of the hostel offers routine medical service in addition to meeting emergency demands of inmates. The Institutional Social Responsibility Activities (ISR) of the University includes hospital on wheels, free medical and dental camps in villages, lifestyle & hygiene awareness, rural & urban health centers through the Faculty of Medicine and Dentistry.

### Surveillance System

Advanced, IP-based, PoE (Power on Ethernet) enabled CCTV cameras are installed at various locations of the campus for better surveillance.

### University guest house

A well furnished University guest house with 8 A/C suits, 60 A/C three bedded rooms and 30 non A/C three bedded rooms and two A/C dining halls, University canteens and Co operative stores are also situated in the campus to cater the needs.

### 6.5.5.2 Examination Hall

In order to conduct the Mid-Semester and End Semester examinations for the UG and PG and Ph.D. students, well structured, ventilated, illuminated and spacious examination halls with easy to monitor seating arrangements are available.

Place	Number of Halls	Total seating capacity
Sigappi Achi Building	2	1500
FEAT - Golden Jubilee Block	21	1050
Old Auditorium	1	100
New Block	10	500
Tech- Park	16	1200
<b>Total</b>	<b>50</b>	<b>4350</b>

### 6.5.5.3 Sports and Recreation facility

The university has a central sports complex to cater to the needs of students. The sports complex houses indoor stadium, Hi-Tech Gymnasium, Athletic track, Tennis, Football, Hockey, Cricket, Volley ball, Basket ball, Kabaddi, Kho-Kho, Ball badminton courts and indoor games facilities for Basket ball, Shuttle cock and Table Tennis, Chess and Carom. Apart from this, floodlight lit Basket ball and Volley ball courts along with Ball badminton, Football, Tennikoit and Kabaddi courts are available for the students.

Further, the university has a well-established YOGA centre and every hostel has a meditation room.

Physical education course has been made mandatory and form a part of the course curriculum. A separate course as Physical Education & Yoga practice with 0 + 1 credit is offered to B.Sc., (Hons.) Ag.)/(Hort.) students.

The following indoor and outdoor sports facilities are available in the University premises for the UG, PG and Ph.D. students

Sl. No.	Name of the sports activity	Place	Nos. Available
1.	Basket ball Floodlit	Faculty of Agriculture	1
2.	Volley ball Floodlit	Faculty of Agriculture	1
3.	Ball badminton	Faculty of Agriculture	1
4.	Kho-kho	Faculty of Agriculture	1
5.	Kabaddi	Faculty of Agriculture	1
6.	Hockey	Dept. of Physical Education and Sports Sciences, Annamalai University	1
7.	Foot ball	Dept. of Physical Education and Sports Sciences, Annamalai University	1
8.	Kabaddi Floodlit with Gallery	Dept. of Physical Education and Sports Sciences, Annamalai University	1
9.	Kho-kho	Dept. of Physical Education and Sports Sciences, Annamalai University	1
10.	Tennis Floodlit with Gallery	Dept. of Physical Education and Sports Sciences, Annamalai University	Mud court 4 Synthetic court 2
11.	Net ball	Dept. of Physical Education and Sports Sciences, Annamalai University	1
12.	Hand ball Floodlit with Gallery	Dept. of Physical Education and Sports Sciences, Annamalai University	1
13.	Indoor stadium i) Volley ball ii) Badminton Courts	Dept. of Physical Education and Sports Sciences, Annamalai University	2 4
14.	400 m Track for field events -with 8 lanes	Dept. of Physical Education and Sports Sciences, Annamalai University	1
15.	Ball badminton Courts Gravel	Dept. of Physical Education and Sports Sciences, Annamalai University	2
16.	Basketball Floodlit with Gallery	Dept. of Physical Education and Sports Sciences, Annamalai University	3
17.	Cricket Matting Pitch	Dept. of Physical Education and Sports Sciences, Annamalai University	1

The above-mentioned sports facilities are used by the UG, PG and Ph.D. students for the Sports Day and SPORAG competitions every year. The students regularly use these facilities for their sports activities. These sports facilities are maintained daily (rolling, watering, etc.) with the help of the markers and other supporting staff.

#### INFRASTRUCTURE FACILITIES AT CENTRAL SPORTS COMPLEX

Sl. No.	Name of the Facility	Number	Nature	Specialty
1	Athletics - 400 m	8	Mud lane	-
2	Badminton-Indoor Court	4	Wooden	-
3	Ball-badminton Court	2	Gravel	-
4	Basketball Court	3	Cement concrete-2; Wooden-1	Floodlit with Gallery
5	Cricket ground	1	Gravel	Matting Pitch
6	Football ground	1	Gravel	Gallery
7	Handball ground	2	Gravel	Floodlight lit with Gallery
8	Hockey ground	1	Gravel	Gallery
9	Indoor Stadium with Gallery and Floodlight lit facility	4	Badminton Courts	Multiplex
		1	Basketball Court	
		1	Volleyball court	
10	Kabaddi	2	Sandy Clay	Floodlight lit with Gallery
11	Kho-kho	2	Gravel	-
12	Soft Ball	1	Gravel	-
13	Table Tennis	2	Indoor	-
14	Tennis	6	Gravel -2 Synthetic-4	Floodlight lit with Gallery
15	Throw ball	1	Gravel	-
16	Volleyball	2	Sandy clay	Floodlight lit with Gallery

#### 6.5.5.4. Auditorium

The auditorium facilities in the University is a centralized one which could be utilized by different faculties to organize student functions, seminars, conferences, workshops, research meetings, etc. According to the expected number of audience, the halls are indented in advance. Agriculture Auditorium is utilized for conducting various academic activities like seminars, conferences, workshops, research meetings, etc. Around 25 academic activities are being conducted in this auditorium every year. Functions involving all staff and students are conducted in floodlit open stage with adequate seating arrangement for the audience. The details of auditorium facilities available in the university premises as well as in the Faculty of Agriculture are furnished below.

Sl. No	Name of the Hall	Built up area in Sq. mts.	Seating Capacity	Year of construction
1.	Agriculture Auditorium (3 numbers)	4500	750	1965, 2001
2.	Guest House Conference Hall Ground Floor (A.C.) First Floor (A.C.)	105	110	Renovated during 2006
		105	110	
3.	LIBRA Hall (Centralized A.C.)	250	200	Renovated during 2006
4.	Sastri Hall (Centralized A.C.)	1022	1100	Renovated during 2006 & 2018
5.	Open Auditorium (2 numbers)	Helipad area	10000	2017

#### 6.5.5.5. Exhibition Hall / Museum

**The Agricultural Museum,** Annamalai University is the epitome of Excellency in the field of agriculture. The museum exhibits genesis of faculty of agriculture over the past decades. With its philosophical core commitment towards Excellency in agriculture field, it has manifested indigenous technical knowledge in costal farming system of Tamil Nadu. The museum displays various blocks representing technologies used in the farming. The museum houses different models containing evolution of agriculture models, automatic weather station, models of agricultural implements models of soil profile, traditional storage of seeds. The models of figures termite colony and models of glass house & poly house used for growing of vegetables under controlled conditions. The museum exhibits models for crop training for food security. The goat used as farmers friend, models for rearing of honeybees and silkworm rearing also models of animal husbandry where we can also see veterinary gestation calendar for chicks, cows & goats. We can also see various models being displayed and other useful information being displayed about the diseases, pest, cultivation practices etc., along with various activities carried out by various departments. Also various information of all the agriculture departments are displayed.

**Insect Museum:** The Department of Entomology houses an exhaustive collection of insect specimens collected across the country in an exquisite museum which attracts our students as well as students from other institutions nearby. The Department of Plant Pathology also maintains display boards of various plant diseases.

**Tools Museum:** About hundred types of farm implements and 15 tractor drawn implements are placed.

**Agri-input Museum:** Seeds and input are displayed.

**Irrigation & Weed Museum:** Types of weeds and Irrigation types are placed.

**Meteriology Museum:** Equipments are displayed.

## 6.5.6 Research facilities

### 6.5.6.1. Post Graduate Laboratories and Equipments

#### Agronomy

Sl. No.	Facility	No.	Area (sq.ft)	Description
1.	Prof. G Kuppusamy PG hall	1	625	A fully air-conditioned classroom with smart TV (android) along with the high-tech hall with 50 numbers of seating capacity.
2	PG - Instrumentation Lab (Capacity - 15)	1	300	pH meter, EC meter, Atomic Adsorption Spectrophotometer, Neutron probe, Neutron profile probe.
3.	Pot culture yard	1	1,000	Pot culture studies are conducted for preliminary research work as well as for student study purpose.
4	Polyhouse	1	300	Polyhouse is used to grow the crop under control conditions for the research purpose.
	1) Farm office, 2) Tractor shed, 3) Fertilizer Godown	3	1305 800 1891	Utilized for student study and research purpose
	Prof. Rm Alagappan Department Library	1	625	The Department Library is provided with 1477 text and reference books, 614 PG, 74 Ph.D. and 1 D. Sc thesis, More than 12 national and 15 international journals with 100 bound

				backvolumes,journals,UGprojectreport400. E-Journals - 226, Complimentaryannualreport37, Complimentaryjournal40,CD-91.
	Prof. A R Laxmanan farmers Training Hall	1	450	Conductingtraining to the GovernmentAgriculturalOfficersandfarmers. (Seating capacity - 60)
	Prof. Rm Kathiresan Conference Hall	1	495	Conducting meetingwith faculty,dignitaries&progressivefarmers.(Seating capacity - 25)

### Agricultural Extension

Sl. No.	Name of the instructional unit	Size (sq. ft)	Seating Capacity
1.	PG Class room - I	600 sq. ft(30 'x 20) '	30
2	PG class room -II	600 sq. ft (30 'x 20) '	30
3	Library	600 sq .ft (30 x 20)	20

### Agricultural Microbiology

S.No	Facility	Number	Area (sq. ft)	Description & Equipments housed
1	Class Room	2	930 360	Conducting Theory classes
2	Laboratories	1	PG Lab- 360	A Laboratory with all basic instrumentation facilities 1. Autoclave, 2. Hot air oven, 3. BOD incubator, 4. ElectronicBalance, 5. DistillationUnit, 6. LightMicroscope, 7. AlcoholUnit, 8. Hot plate, 9. Laminar Flowchamber. 10. Cooling centrifuge, 11. phase contrast microscope, 12. fermentor with complete accessories.
3	Instrumentation room	1	570	1. Spectrophotometer, 2. HPLC, 3. Gel documentation unit, 4. Light microscopes, 5. stereozoom microscope, 6. High resolution Microscope with image capturing system, 7. ELISA Reader, 8. Refrigerator, 9. UV- Visible double beam, 10. Flame photometer, 11. PCR, 12. Centrifuge, 13. Nitrogen Analyser system, 14. Vacuum Desiccators, 15. Hot air oven, 16. Autoclave, 17. pHMeter, 18. Mechanical Shaker

4	Library	1	360	The Department Library is provisioned with 924 text and reference books, 200PG and 60 Ph.D. thesis, more than 10 national and international journals with conference proceedings and volumes, project work reports, reprints of published research papers.
5	Chemical&Glassware room	1	360	All the chemicals, Glassware and rare chemicals required for the regularUG, PG &Ph.D.classes.
6	Pot culture yard	1	13080	Available for semi field research and potculturestudies.Onegreenhouseto carry out specific in-situ enclosure studies. The area is provided with round the clock irrigation facilityand necessary labour
7	Biofertilizer production unit room	1	360	To carry out the Mass production of Bio-fertilizers by using 111 Fermenter.
8	Implements& FertilizerRoom	1	67	For maintenance of implements and fertilizer required for the pot culture yard for the students trial purpose
9	Bio waste disposable room	1	150	For the safe disposal of used media, microbial cultures and cotton swaps

### Agricultural Economics

Sl.No.	Facility	Number	Area (Sq.ft)	Description
1.	Computer room (at Agrl. Economics)	1	285	Wi-Fi enabled with computer lab with 5 PCs.
2.	Library	1	266	311 - Text and Reference Books 201 - PG Theses, 19 Ph.D thesis
3.	Ph.D. Class room (Hi-Tech Hall)	1	551	Interactive smart class room with LED TV and e-Podium
4.	PG Class room	1	551	LCD projector enabled class room
	<b>Common facility</b>			
5.	Digital Camera	1		Sony (DSC-H70/BQ)
6.	Handy cam	1		Sony (DCR-SR20E/Sc

### Entomology

Sl.No.	Facility	Area (Sq. ft.)	Description& Equipment housed
1.	Post-graduate Lecture Hall cum Instructional Laboratory	39' x 25' = 975	Smart class room with a seating capacity of 25 with Television and <b>equipment</b> viz., 1. Binocular zoom stereo microscope - 2 nos. 2. Binocular microscope- 2 nos. 3. Monocular microscope -1 no. 4. Simple microscope - 10 nos. 5. Film viewer -1no.

			6. Insect Collection Net – 20 nos. 7. Insect Box – 50 nos. 8. Poison bottle– 20 nos. 9. Magnifier -1no. 10. Glassware 11. Chemicals
2.	Ph.D.Lecture Hall cum Instructional Laboratory	29'x 20' = 580	Smart class room with a seating capacity of 15 with Television and <b>equipment</b> viz., 1. Binocular microscope -1no. 2. Compound microscope -1no. 3. Glassware 4. Chemicals 5. Insect collection net - 10 6. Insect collection boxes - 10
3.	Apiculture - Field Station	11'x 16' = 176	To keep the materials for handling apiary. 1. Beekeeping appliances 3 sets 2. Hive - 57 sets
4.	HPR - Field Station	11'x 16' = 176	To keep the materials for handling field work regarding HPR studies. <b>Equipment</b> 1. Compound Microscope 2. Electronic balance
5.	Insect Museum & Parasitoid taxonomy laboratory	32'x27' = 864	An air-conditioned laboratory to carry out taxonomy research with sophisticated imported microscopes and equipment <b>Insect Museum</b> An air-conditioned Insect Museum with Unique collection of around 50,000 insects representing all insect orders known from India. In addition to adults, immature insects and few models are also placed for the benefit of students. A web data base (EDAU – Annamalai InsectCollection) for the museum is also available. 1. Insect boxes -210 2. Collection nets -23 3. Dip nets-9 4. Entomological pins 5. Setting boards -51 6. Pinning blocks-10 7. Specimen jars-110 8. Show case boxes-48 9. Slides <b>Parasitoid taxonomy laboratory</b> <b>Equipment</b> 1. Television 2. Visualizer ELMO 3. Leica M205C& DM 750 trinocular stereo zoom with Montage software for capturing 3D image–2 nos. 4. Phase contrast trinocular 5. Stereo zoom – 8 nos. 6. Trinocular stereoscopic zoom microscope

			<p>with drawing tube Nikon SMZ 1500</p> <ol style="list-style-type: none"> <li>7. Binocular- Nikon eclipse E400</li> <li>8. Binocular –Novex Holland</li> <li>9. Binocular Zeiss primostar</li> </ol> <p>Computer</p>
6.	Apiculture Laboratory & Bee Museum	32'x27' = 864	<p>An air-conditioned laboratory to carry out apiculture research</p> <p><b>Materials</b></p> <ol style="list-style-type: none"> <li>1. Newton bee hive</li> <li>2. Italian bee hive</li> <li>3. Marthandam hive</li> <li>4. Pot hive</li> <li>5. Wooden box</li> <li>6. PVC model</li> <li>7. Full protective Suite</li> <li>8. Neck type protective veil</li> <li>9. Hall protective veil (Hip sized)</li> <li>10. Drone trap</li> <li>11. Pollen trap</li> <li>12. Smoker</li> <li>13. Extractor</li> <li>14. Queen cage</li> <li>15. Swarm trap</li> <li>16. Queen excluder sheet</li> <li>17. Comb foundation sheet</li> <li>18. Decapping knife</li> <li>19. Gloves</li> <li>20. Hive tool- SS type</li> <li>21. Queen gate</li> <li>22. Raw honey</li> <li>23. Bee wax</li> <li>24. Value addition - Dates, nuts, Ginger, Garlic, Fig, Amla</li> <li>25. Different types of combs</li> </ol>
7.	Plant Tissue Culture Laboratory	7'x15' = 105	<p>An air-conditioned Laboratory</p> <p><b>Equipment</b></p> <p>Tissue culture rack</p> <p>Laminar flow chamber</p>
8.	Insect Culture room	13'x15' = 195	<p>An air-conditioned Culture room with racks and cages for insect culture such as <i>Spodopteralitura</i>, <i>Spodoptera frugiferda</i>, <i>Earias</i>, greater wax moth, <i>Epilachna</i></p> <p>Steel racks - 7</p> <p>Refrigerator -1</p> <p>Insect Cages - 10</p> <p>Glass jars - 30</p>
9.	Phyto-insecticides Laboratory I	33'x 22' = 726	<p><b>Phyto-insecticides Laboratory</b></p> <p>For carrying out extraction, bioassay, deducing mode of action, purification and fractionation works.</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Micro applicator</li> <li>2. Rotary flash vacuum evaporator</li> <li>3. Soxhlet extraction apparatus</li> <li>4. Refrigerated water circulator</li> <li>5. Binocular microscope</li> </ol>

			<ol style="list-style-type: none"> <li>6. Compound microscope</li> <li>7. Microwave oven</li> <li>8. Magnetic stirrer</li> <li>9. Vortex mixer</li> <li>10. Heating mantel</li> <li>11. Cyclomixer</li> <li>12. Mixie</li> <li>13. Plant growth chamber</li> <li>14. Distillation units</li> <li>15. Refrigerator</li> <li>16. Deep freezer</li> <li>17. Column chromatography</li> <li>18. Hot air oven</li> </ol>
10.	HPR Laboratory	20'x 17' = 340	<p>For evaluating mechanisms and factors of resistance in crop varieties against insect pests</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Leaf area meter</li> <li>2. Olfactometer</li> <li>3. Volatile Collection Chamber</li> <li>4. Spectrophotometer</li> <li>5. Mono-ocular microscope with camera</li> </ol>
11.	Phyto-insecticide Laboratory II	27'X13' = 350	<p>An air-conditioned Laboratory For formulating botanical insecticides</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Spray drier</li> <li>2. Environment test chamber</li> <li>3. Potters tower</li> <li>4. Hot air oven</li> <li>5. Weighing balance</li> <li>6. Magnetic stirrer</li> <li>7. Refrigerator</li> <li>8. Mixie</li> <li>9. pH meter</li> <li>10. Distillation unit</li> <li>11. Digital overhead stirrer</li> </ol>
12.	Toxicology & Sea Weed Laboratory	33'x 22' = 726	<p>To carry out sea weed research and insecticide resistance monitoring</p> <ol style="list-style-type: none"> <li>1. Extraction unit</li> <li>2. Water circulator</li> <li>3. Refrigerator</li> </ol>
13.	Molecular Laboratory	20'x 17' = 340	<p>To conduct basic molecular research</p> <p><b>Instruments</b></p> <ol style="list-style-type: none"> <li>1. Multiple gel casting unit,</li> <li>2. Submarine Electrophoresis,</li> <li>3. Vertical slab gel Electrophoresis</li> <li>4. Refrigerator</li> <li>5. SDS PAGE</li> <li>6. Hot air oven</li> <li>7. Muffel furnace</li> <li>8. Centrifuge</li> <li>9. Spectrophotometer</li> <li>10. BOD incubator</li> </ol>
14.	Skill laboratory	19'x 22' =	Students are trained with all basic skills related to

		418	entomology. Materials and tools needed for skill development in basic entomology studies <b>Instruments</b> 1. Simple microscope 2. Compound microscope 3. Zoom stereo Microscope 4. Attachment lens 5. Haemocytometer 6. Micrometry 7. Insect collection nets 8. Slides& Cover slip 9. Dissection set 10. Artificial diet materials 11. Rearing containers 12. Formulations of Insecticides 13. Sprayers 14. Traps
15.	Sericulture Museum Eri and Sericulture Laboratory	19' x 18' = 342	Sericulture Museum contains exhibits related to sericulture. A laboratory for doing research on mulberry silkworm and Eri silkworm with all rearing materials and trays
16.	UG Laboratory I	38' x 30' = 1140	Smart class room with all specimens needed to conduct practical classes. Binocular microscopes, simple microscopes, insect boxes, inset collection nets, specimen jars
17.	UG laboratory II	40' x 32' = 1280	Smart class room with all specimens needed to conduct practical classes. Sprayers, pesticide containers, bee keeping appliances, sericulture materials, lac products, insect collection net, herbarium
18.	Experimental farm - II Mulberry field	7.0 acre	Completely fenced area with Drip irrigation facility with one farm pond and planted with two mulberry varieties
19.	Experimental farm - I Bee Garden	3.5 acres	To provide forage for bees
20.	Experimental Field - I semi field research	41' x 17' = 697	Eight banana varieties are maintained
21.	Experimental Field - II semi field research	100' x 125' = 12500 0.3 acre	Completely fenced area with Sprinkler& Drip irrigation facility. Crop cafeteria is maintained and pest life stages are shown to the students. Six different popular mulberry varieties are maintained
22.	Pot-culture yard I	46' x 30' = 1380	Grow bags and pots to conduct Pot culture studies related to rice & millets Net house for - Rice Leaf folder, BPH, Stem borer
23.	Pot-culture yard II& III	40' x 28' = 1120	Grow bags and pots to conduct Pot culture studies in pulses, cotton, oil seeds
24.	Pot-culture yard IV -VII	67' x 47' = 3149	Grow bags and pots to conduct Pot culture studies in Vegetables
25.	Pot-culture yard VIII	70' x 25' = 1750	Grow bags and pots to conduct Pot culture studies related to HPR
26.	Sucking pest culturing Unit I & II	58' x 38' = 2204	Cages and racks for culturing of sucking pests such as Aphids, Thrips, Mealybugs
27.	Medicinal plant garden	29' x 22' = 638	36 species of medicinal and pesticidal plants
28.	Screen house- I	25' x 16' = 400	To carry out specific <i>in-situ</i> enclosure studies and Resistance monitoring studies. Farm implements & Fumigation chamber

29.	Screen house- II	20'x10' =210	To carry out screening studies related to host plant resistance
30.	Screen house- III	25'x20' = 500	To carry out screening studies related to host plant resistance in Rice
31.	Apiary I	30'x80' = 2400	Apiary with 25 hives of Indian bees for instructional purpose
32.	Apiary II	150'x 50' = 7500	Apiary with 25 hives of Indian bees/5 hives of dammer bees for instructional purpose
33.	Silkworm rearing sheds 3 Nos.	65'x18' = 1170 each	Mulberry silkworm rearing sheds to rear silkworm
34.	Conference Hall	20'x18' = 360	A full-fledged air conditioned conference hall with audio-visual aids and a seating capacity of fifty is available for scientific and social deliberations
35.	Department Library	30'x10' = 300	The Department Library is provisioned with 547 text and reference books, 288 PG and 38 Ph.D. theses, more than 20 national and international journals, 102 bound back volumes, Annual Review of Entomology, 75 conference proceedings, 95 project reports and more than 10,000 reprints
36.	Stores	28'x6' = 168	To keep chemicals and glassware
37.	Farm ponds	6 nos	To harvest water
38.	Bio-control agents production Unit	25'x15' = 375	Various biocontrol agents are produced in collaboration with EcocarePvt. Ltd. 1. Hot air oven -1no. 2. Laminar flow chamber -1no. 3. Autoclave -1no.
39.	Biocontrol Research laboratory (Flyash building)	20'x13' = 260	Containers to grow various biocontrol agents
40.	Lepidoptera repository and stored product pests Laboratory	10'x10'= 100	Repository – Butterflies and moths of southern India. The butterflies and moths collected from various localities are identified and preserved. Research on stored pests and culture of <i>Callosobruchus</i> , <i>Corcyra</i> , <i>Tribolium</i>

### Genetics and Plant Breeding

Sl.No.	Facility	Numbers	Area(Sq. Ft.)	Seating capacity	Descriptions and equipments housed
1	PG Lecture Hall (Genetics & Plant Breeding)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like LCD projector and Smart TV.
2	PG Lecture Hall (Seed Science & Technology)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like Smart TV
3	PG Lecture Hall (Plant Molecular Biology & Biotechnology)	1	(30x12.73) 381.98	10	Smart class rooms are available with facilities like LCD projector (Smart board) and Smart TV
4	Ph.D. Lecture Hall (Genetics & Plant Breeding)	1	(19.8x11) 220	10	Class rooms are available with Smart TV facility.

Sl.No.	Facility	Numbers	Area(Sq. Ft.)	Seating capacity	Descriptions and equipments housed
5	Ph.D. Lecture Hall (Seed Science & Technology)	1	(19.8x11.6) 229.6	10	Class rooms are available with Smart TV facility.
6	Ph.D. Lecture Hall (Plant Molecular Biology & Biotechnology)	1	(17.8x9.2) 163.7	6	Class rooms are available with Smart TV facility.
7	Field Demonstration Hall	1	(30x20) 600	30	For Practical classes
8	Cytology & Cytogenetics Laboratory	1	(26.5x20) 530	20	The laboratory is equipped with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber).
9	Seed technology Laboratory	2	(15x6.2) + (15x6.2) 94+94	5+5	The laboratory is equipped with seed technological instruments like seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers.
10	Plant Tissue culture Laboratory	1	(10x8) 80	5	Plant tissue culture laboratory is equipped with laminar air flow chamber, autoclave and incubator, mini thermo cycler, electronic weighing balance, gel documentation chamber.
11	Molecular Biology Laboratory	1	(30x11.3) 339	7	Molecular biology laboratory is equipped with major instruments like BIORAD-30 wells, GENEI-gel rocker, thermal cycler-gel documentation system, GENEI-gel electrophoresis-8 transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge
12	Department Library	1	(30x22) 660	25	The Department Library is provisioned with 612 text and reference books, PG and Ph.D. thesis, National and International journals, conference proceedings and volumes, 20 project reports.
13	Dr.C.N.Sambandam Hi-Tech Hall	1	(30x22) 660	50	Hi-Tech presentation hall
14	Pot Culture Yard-GPB	1	0.03 ha	-	To conduct preliminary evaluation trials and seed multiplication.
15	Pot Culture Yard-SST	1	0.03 ha	-	To conduct preliminary trials and germination studies.
16	Pot Culture Yard-PMBB	1	0.03 ha	-	For hardening and to conduct preliminary trials.

Sl.No.	Facility	Numbers	Area(Sq. Ft.)	Seating capacity	Descriptions and equipments housed
17	Plant Breeding Experimental Farm-Field no.13	1	0.73 ha.	-	Conducting trials for post graduate students and AICRIP trials
18	Plant Breeding Experimental Farm-Field no.14	1	0.58 ha.	-	Conducting trials for post graduate students and AICRIP trials
19	Plant Breeding Experimental Farm-Field no.15	1	0.80 ha.	-	Conducting trials for post graduate students and AICRIP trials
20	Plant Breeding Experimental Farm-Field no.16	1	0.69 ha.	-	Conducting trials for post graduate students and AICRIP trials

### Horticulture

Sl. No.	Name of the Instructional Unit	Size (ft) /Area (sq.ft)	Seating capacity
1	PG Class Room 1	320 sq.ft	15
2	PG Class Room 2	640 sq.ft	40
3	PG Class Room 3	720 sq.ft	40
4	PG Class Room 4	420 sq.ft	15
5	Ph.D Class Room 5	400 sq.ft	15
6	Ph.D Class Room 6	450 sq.ft	15
7	Ph.D Class Room 7	420 sq.ft	15
8	Laboratory(PG/Ph.D) <b>Available major equipments</b> Electronic Automatic Kel Plus 20L, Electronic Superior Automatic Distillation System with Display, Centrifuge, Circulating Thermostatic water bath, Double distillation water still, Hot air oven, Leaf Area Meter, Plant Canopy analyzer, Spectrophotometer. <b>Available minor equipments</b> PH Meter, Pocket Refractometer, Monocular microscope, Binocular Research Microscope, Trinocular Research Microscope, Dissecting microscope, Advanced student microscope, Digital Electrical conductivity meter, Hot Plate, Water bath, Digital PH meter, Electronic Weighing balance, Electronic Weighing balance.	640 sq.ft	15

### Plant Pathology

Sl. No.	Name of the Instructional Unit	Size (ft) /Area (sq.ft)	Seating capacity	Description & Equipment's housed
1	PG & Ph.D.- Lab 1	29' × 20' = 580 sq.ft	20	<ul style="list-style-type: none"> <li>➤ PCR-Thermocycler</li> <li>➤ Gel Documentation System</li> <li>➤ Electrophoresis Unit</li> <li>➤ UV Transilluminator</li> <li>➤ Fermentor</li> <li>➤ Microscope with bright field Phase contrast and digital SLR Camera</li> <li>➤ ELISA Reader</li> <li>➤ Spectrophotometer</li> <li>➤ Cooling Centrifuge</li> <li>➤ Deep freezer</li> </ul>

				<ul style="list-style-type: none"> <li>➤ Micro centrifuge</li> <li>➤ Camera lucida</li> </ul>
2	PG & Ph.D. -Lab 2	31' × 20' = 620 sq.ft	20	<ul style="list-style-type: none"> <li>➤ Bio safety cabinet</li> <li>➤ Laminar Air Flow</li> <li>➤ Hot Air Oven</li> <li>➤ BOD</li> <li>➤ Shaking incubator</li> <li>➤ Autoclave</li> <li>➤ Cooling orbital shaking incubator</li> </ul>
3	PG & Ph.D. -Lab 3 (Biotechnology Lab)	08' × 20' = 160 sq.ft	10	<ul style="list-style-type: none"> <li>➤ RT-PCR</li> <li>➤ Western blot unit</li> <li>➤ Growth Chamber</li> <li>➤ Lyophilizer</li> <li>➤ -80°C deep freezer</li> <li>➤ Fluorescent Phase contrast Microscope</li> <li>➤ Digital microscope</li> <li>➤ Fluorometer</li> </ul>
4	PG Class room	29' × 19' = 551 sq.ft	20	➤ LED TV and LCD projector
5	Mushroom Lab	31' × 15' = 465 sq.ft		➤ Edible mushroom production
6	Mushroom shed	30' × 15' = 450 sq.ft		➤ Exclusive for milky mushroom cultivation
7	Glass house	38' × 15' = 570 sq.ft		➤ To carry out the pot culture experiments
8	Pot Culture Yard	40 cents		➤ To carry out the pot culture experiments
9	Experimental trial Plot	60 cents		➤ To conduct the Experimental trials for research scholars
10	Library	250 sq.ft	20	<ul style="list-style-type: none"> <li>➤ Books - 342</li> <li>➤ E-Books - 155</li> <li>➤ M.Sc. (Ag.) Thesis - 308</li> <li>➤ Ph.D. Thesis - 035</li> <li>➤ E-Journals - 032</li> <li>➤ Journals - 012</li> </ul>

### Soil Science & Agricultural Chemistry

Sl.No.	Facility	Number	Area (sq. ft)	Description & Equipment housed
1	Post-graduate Laboratory	1	740	A full-fledged-laboratory with all basic facilities such as Soil grinder, Kjeltex N Analyser, Soxhlet's apparatus, Laminar Flow Chamber, Aggregate analyser, mantle, Doublebeam Spectrophotometers, Flame photometer, Double distillation unit, Electronic weighing balance, Bremner apparatus, micro Kjeldahl unit and Hot air Oven.
2	Library cum ICT Laboratory	1	646	An air conditioned laboratory with 10 computers loaded with statistical softwares connected through LAN with Inlibnet facility. One computer with GIS and remote sensing software is also available. It also houses 909 books, 15 Journals and 45 CDs.
3	Gas Plant	1	110	Fuel Gas generation
4	Glass house	1	660	To conduct incubation and pot experiments
5	Pot culture yard	1	2500	To conduct pot experiments

#### 6.5.6.2. Research contingency

Scientists from various disciplines of this campus have undertaken 55 research sub-projects and had received funding from external agencies for 34 research schemes during the last five years.

The institute collaborates with the government agencies in India, *viz.*, BARC, NADP, UGC, TANIL, DST, DBT, DAE, and ICAR. Venture capital schemes on production of TNAU coconut tonic, dry land bee keeping, production and sale of bio-inputs and beneficial microbial products for plant disease management, mushroom production, production of foundation and certified seed in rice are in operation for generation funds for various research and infrastructure development.

The research contingencies obtained from various funding agencies are also utilized for the establishment of laboratories, purchase of equipment and instruments, chemicals and consumables for UG and PG education and research. The research contingencies obtained from 2013 to 17 are given below.

#### Contingencies from Department Budget (Lakh Rupees)

Sl. No.	Department	2017-18	2018-19	2019-20	2020-21	2021-22
1.	Agronomy	0.30	0.30	0.30	0.45	0.45
2.	Agrl. Economics	0.10	0.15	0.15	0.15	0.15
3.	Agrl. Extension	0.10	0.10	0.10	0.10	0.10
4.	Agricultural Microbiology	0.10	0.10	0.10	0.10	0.10
5.	Entomology	0.20	0.20	0.20	0.20	0.20
6.	Genetics & Pl. Breeding	0.15	0.15	0.15	0.10	0.10
7.	Horticulture	0.20	0.25	0.25	0.25	0.25
8.	Plant Pathology	0.15	0.15	0.15	0.15	0.15
9.	Soil Sci. & Agrl Chem.	0.10	0.10	0.10	0.15	0.15
10.	Animal Husbandry	0.20	0.20	0.20	0.25	0.25

#### Contingencies from project Budget (Lakh rupees)

Sl. No.	Department	2017-18	2018-19	2019-20	2020-21	2021-22
1.	All projects in Faculty of Agriculture	6.92	6.46	2.65	2.53	12.04

### 6.5.7. Outcome/Output

#### 6.5.7.1 Student Performance in National Examinations

Year	Exam appeared	Number of Students Passed
2017-18	ICAR - JRF	5
2018-19	ICAR - JRF, SRF	5
2019-20	ICAR - JRF	6
2020-21	ICAR - JRF	4
2021-22	ICAR - JRF	7

#### 6.5.7.2 Students Placement Profile

##### Government

Year	Placement Details	Number Placed
2020	Agricultural Officers, Govt. of Tamil Nadu	80

##### Non Government

Year	Placement Details	Number Placed
2017	Imayam Institute of Agriculture and technology	1
2018	Imayam Institute of Agriculture and technology	1
2019	Agri Businus, Madurai	48
	Sathiyam Bio tech Ltd, Madurai	7
	TNFHDF	375
2020	JK Nursery, Krishnagiri	287
	Sathiyam Bio tech Ltd, Madurai	39
	VAPS (NGO), Madurai	5
	JK Nursery, Krishnagiri	56
	Total	830

### 6.5.7.3. Awards/Recognitions/Certificates

Year	Number of Students
2017-18	69
2018-19	44
2019-20	72
2020-21	57
2021-22	54

#### Achievements

- For the first time in the history of Annamalai University three girl cadets G.R.Nisha, B.S.Pooja and N.Sudhandira, faculty of Agriculture, participated in the 69<sup>th</sup> Republic Day Camp (RDC) from 1<sup>st</sup> to 30<sup>th</sup> January 2018. Cadets B.S.Pooja and G.R.Nisha marched on the Rajpath at New Delhi.
- CDT.T.DivyaBharathi from the Faculty of Agriculture participated in Prime Minister Guard of Honour on 26<sup>th</sup> January 2019, New Delhi. CDT. T. Divya Bharathi of our battalion, as chef-d'oeuvre to our battalions' achievement recorded the entry to 2019 RDC. She excelled blinder as Guard of Honour to a number of nationally important leaders like as the Prime Minister, Defence Minister, Chief Minister of delhi etcetera., she also was the senior in charge for the Puducherry team that was selected to RDC.
- Cadet from Faculty of Agriculture Mr. Sudharsun had participated in International level basketball tournament held at BANGKOK, THAILAND and bagged Gold medal representing our country.
- CUO.N.Sudhandira participated in RDC 2018. She was a part of cultural team bagging Silver medal for and bronze medal for group dance and overall TN, P & AN dte won the cultural trophy. She also got selected in central cultural team representing Tamil Nadu dte. TN,P&AN got best dte -Runner up position. Felicitated by Hon.Governor of Tamil Nadu, Governor of Puducherry & DDG of Tamil Nadu dte.
- For the first time from Tamil Nadu SGT. I.Kavya Devi (6 TN BN NCC)III B.Sc.,(Agri.) Faculty of Agriculture, Annamalai University ,Tamilnadu who won National level 3rd Prize for Essay competition & received Cash award Rs.20,000/- from Shri S.S.Ahluwalia -Ministry of State for drinking water & Sanitation and Shri Hardeep Singh Puri - Ministry of State for Housing & Urban Affairs On "Swachh Bharath Diwas", 2<sup>nd</sup> Oct, 2017 @ Vigyan Bhawan, New Delhi with Prime Minister Shri Narendhra Modi as Chief Guest.
- For the first time in the history of 6TN(BN)NCC Cadet M.Priyadharshini, Faculty of Agriculture, participated ThalSainic from 15.09.2017 to 01.10.2017, New Delhi and won medal in firing event.

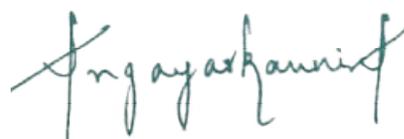
#### **6.5.7.4. Employability**

Each course in the curriculum is designed with practical content to have hands-on experience. The students are given knowledge, skills and attitude in agriculture and allied subject with dedicated subject matter specialists. This inter-disciplinary exposure gives confidence to face competitive examinations with ease. Team teaching courses and group activities helps the student develop leadership qualities and also develop inter personal skills. Field visits, study tour, RAWE, experiential learning and industrial attachment add value to the degree and gives confidence to become job providers rather than job seekers. Students are trained in employability and soft skills as part of the curriculum. Motivational lectures, Personality Development Workshops and HR sessions are arranged throughout the year to increase their employability. The students of our faculty are employed not only in core areas like government agricultural departments as technical officer but also got selected in Indian Administrative Service, Indian Police Service, Indian Revenue Service, IFPRI, Nationalized Bank, Member of Legislative Assembly and Tamil Nadu Group Services. Many of our students prefer to go for higher studies and enter in teaching and research. Our student got selected in SAUs at Kerala, Orissa, West Bengal, Punjab, Assam, Himachal, U.P., Bihar and M.P. Two of our alumni are currently occupying the position of Vice-Chancellor in Tamil Nadu Agricultural University and Gandhigram Rural University respectively. Several of our students are working as landscape consultants and managers in Gulf countries and Singapore.

**6.5.8. SSR of the college must have the SSR of all its Degree Programmes (following section 6.4) then the report of the colleges shall be considered.**

#### **6.5.9. Certificate (Applicable when SSR is submitted for Programmes & College)**

I, The Dean, **A. Angayarkanni**, Faculty of Agriculture, Annamalai University hereby certify that the information contained in Section 6.4. and Section 6.5.7.4. are furnished as per the records available in the college and degree awarding University.

  
DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

**Signature of the Dean of the college with Date & Seal**



**ANNAMALAI UNIVERSITY**  
(Accredited with A<sup>+</sup> Grade by NAAC)



# **FACULTY OF AGRICULTURE**

## **SELF STUDY REPORT OF THE**

## **B.SC. (HONS.) AGRICULTURE**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## 6.4. SELF STUDY REPORT FOR THE PROGRAMME

### Undergraduate Degree Programme - B.Sc. (Hons.) Agriculture

**Name of the programme and year of start:** B.Sc.(Hons.) Agriculture- (Nomenclature changed as per ICAR V<sup>th</sup> Dean's committee w.e.f. 2017-18)

**Year of start:** 1958

#### 6.4.1. Brief History of the Degree Programme

A full pledged four year degree programme *i.e.* B.Sc. (Ag.) was started by the Faculty of Agriculture during the academic year 1958-59. Faculty of Agriculture of Annamalai University was the second seat of learning of agriculture in Tamil Nadu next to the Agricultural College at Coimbatore (Now TNAU).

The genesis of Faculty of Agriculture is depicted chronologically here under.

1951	<ul style="list-style-type: none"> <li>Department of Agriculture in the Faculty of Science was established</li> <li>Establishment of Experimental Farm with the available wet lands</li> </ul>
1958	<ul style="list-style-type: none"> <li>First batch of B.Sc. (Ag.) admitted</li> </ul>
1962	<ul style="list-style-type: none"> <li>First batch of B.Sc. (Ag.) students graduated</li> </ul>

#### Vision and Mission

The vision of the Faculty is to play an active role in sustainable agricultural development of the country. The mission of the Faculty is to forge ahead in teaching, research and extension services in agriculture and to serve as a centre for academic excellence. In order to realize this mission, it has the mandate to play a pivotal role in capacity building, technology development and dissemination.

#### Teaching

For an agrarian country like India, strong and efficient manpower is needed to develop and disseminate newer agricultural technologies. Considering this, Faculty of Agriculture has tailored a broad based curriculum to impart required knowledge, skills and attitude at UG, PG and Ph.D. levels. Utmost care is taken to provide good learning activities through qualified staff and rich practical training. Being a part of the residential university, the experts from other allied faculties are also utilized to expand the horizon of learning.

The faculty has 237 well qualified agricultural staff to offer the core subjects to UG, PG and PhD students. To teach allied subjects such as language, statistics, computer science, physical education, yoga, agricultural engineering, agribusiness, etc., 59 of the teaching staff and the infrastructure facilities available in the concern department of study from other faculties in the campus are utilized. With the vision of providing quality education, the institute has lecture halls with audio visual aids, library, computer centre and UG and PG laboratories with latest equipments for conducting practical classes. Apart from the classroom learning, the students receive hands-on experiences and exposures through the programmes like RAWE, experiential learning, project work, crop production and study tour. The syllabi for B.Sc.(Hons.) Agriculture programme is revised time to time as per the recommendations of ICAR Dean's Committees. The present curriculum adopted from the academic year 2021-2022 was revised as per the BSMA and fifth Dean's committee recommendations.

**B.Sc. (Hons.) Agriculture Credit Structure**

S. No.	Title	Credit
1	Core Courses	135
2	Elective courses	9
3	RAWE & ELP	40
	<b>Total</b>	<b>184</b>

**Discipline-wise Summary of Credit**

S.No.	Discipline	Credit
1	Agronomy	23 (12+11)
2	Genetics & Plant Breeding	16 (10+6)
3	Soil Science & Agricultural Chemistry	10 (6+4)
4	Entomology	11 (7+4)
5	Plant pathology	12 (8+4)
6	Horticulture	13 (8+5)
7	Agricultural Microbiology	8 (5+3)
8	Agricultural Economics	11 (7+4)
9	Agricultural Extension	9 (6+3)
10	Animal Husbandry	4 (2+2)
11	Engineering	4 (2+2)
12	Plant Biochemistry and Biotechnology	2 (1+1)
13	Statistics	2 (1+1)
14	Computer Science	2 (1+1)
15	English	2 (2+0)
16	NSS/NCC/Physical Education & Yoga Practices*	2 (0+2)
17	Human Values and Ethics*	1 (1+0)
18	Educational Tour*	2 (0+2)
19	Tamil / Agricultural Heritage*	1 (1+0)
20	Elective courses	9 (6+3)
21	Bridge Courses	-
	<b>Total</b>	<b>144</b>
22	RAWE & ELP	40
	<b>Total</b>	<b>184</b>

**Bridge courses**

Bridge courses in biology and mathematics will be conducted for those candidates who have not undergone the respective courses during their higher secondary programme. These courses will be offered for 8 weeks @ 2 hours /week from the date of commencement of the programme.

Sl. No.	Semester	Course code	Title	Credit
1.	I	MAT 001	Elementary Mathematics (Contact Hours 2)	-
2.	I	GPB 002	Introductory Biology (Contact Hours 2)	-

**Non Gradual Compulsory Courses**

Sl. No.	Semester	Course code	Title	Credit
1	I, II	PEY 111	Physical Education & Yoga	1(0+1)
2	I, II, III, IV	NSS 111/NCC 111	NSS/NCC	1(0+1)
3	I	TAM 111/EXT 111	Tamil /Agricultural Heritage (Agril. Extension)	1(1+0)
4	II	EXT 112	Human Values & Ethics (Agril. Extension)	1(1+0)
5	IV	AGR 211	Educational Tour I (Agronomy)	1(0+1)
6	VIII	EXT 411	Educational Tour II (Agril. Extension)	1(0+1)
			<b>Total</b>	<b>6(1+5)</b>

## Research

In order to meet emerging challenges of farming community in the nearby district, need based location specific research work is given priority. The entire staff members are involved in research as well as teaching. All the departments have 'in-house' as well as 'external funded' research programmes. The research programmes are regularly monitored and improved by Research Advisory Committee, Director of Research and funding agencies. The major areas of research consists of crop improvement, crop production, crop protection, identifying new varieties of vegetables, fruits and flower, forestry, medicinal and aromatic plants, and land and water management in problematic areas.

The institute is involved in dedicated research in all frontier areas of agriculture. Research studies are carried out to develop new varieties, crop production, crop protection practices and allied socioeconomic aspects concerned with field and horticultural crops. The faculty of agriculture is actively participating in the Research funded by World Bank, ICAR, DST, DBT, NMPB, MNEF, UGC, ICSSR, and private funding agencies. The prestigious **National Agricultural innovation project funded by ICAR** and World Bank to the tune of Rs 9.45 crores have substantially raised the livelihoods of 2400 farming households in four disadvantaged districts of Tamil Nadu, viz., Cuddalore, Nagapattinam, Villupuram, and Thiruvannamalai. The **Annamalai Rice+Fish+Poultry Farming system** developed in this project was adjudged as the best among 36 Sustainable Rural Livelihood projects implemented across the country by ICAR. **"SIGAPPI" (CR1009-SUB1) - a climate resilient submergence-tolerant rice variety** developed by the Faculty of Agriculture, Annamalai University in collaboration with IRRI, Philippines, has significantly helped the farmers combat with the recurrent devastating floods in the region. The Faculty of Agriculture has research collaboration with Cornell University, International Rice Research Institute (IRRI), Philippines, BIRAC, DBT, ICAR, Bill & Melinda Gates Foundation, US-Aid, International Institute of Biotechnology and Toxicology, Chennai, IKP Knowledge Park (IKP), and Commercial Agriculture Alliance (CAA), Nepal. These collaborations helped the innovations of the faculty outreach across the borders and languages.

### Research Collaborations in the Faculty of Agriculture

Collaborating Institutes	Nature of Collaboration	Year
Biotechnology Industry Research Assistance Council, , New Delhi DBT&	Grand Challenges India -Agricultural Nutrition Participatory Field Experiments & ToTin Rice+Fish+Poultry Farming for Nutritional and Livelihood	2014
Bill & Melinda Gates Foundation		
DBT, New Delhi		
International Rice Research Institute, Manila, Philippines	Evolving Submergence Tolerant Rice	2015
HatsunAgro Products Ltd, Chennai	Training Programme in Tamil on "Basics of Dairy Cattle Management and Artificial Insemination" for the Village Level Inseminators of HatsunAgro	2017

IKP Knowledge Park (IKP), Genome Valley, Hyderabad	Participatory Field Experiments & ToT in Annamalai Rice+Fish+Poultry Farming for Nutritional and Livelihood Enhancement in 75 Farmers Holding of Nepal	2017
Commercial Agriculture Alliance (CAA), Nepal		
International Institute of Biotechnology and Toxicology (IIBAT), Chennai	Participatory Field Experiments & ToT on Agronomic Integration of Technologies for Productivity Management and Optimal Water Use in Wetlands of Cauvery River Delta in 100 Farmers Holdings of Tanjore, Thiruvavoor, Nagapattinam and Cuddalore Districts of Tamil Nadu	2018
College of Agriculture & Life Sciences, Cornell University, USA	Collaborative Research on Climate Resilience Farming System Designs and Invasive Alien Weeds	2019
Tamil Nadu Council of Science and Technology	Research Project	2019
International Rice Research Institute, Manila, Philippines	Research, Training and Extension Services	2022

### Research Projects, Consultancy Services and Product Evaluation Trials

Apart from these collaborations the Faculty of Agriculture has carried out Government and Non-govt. research projects, research consultancy services and product evaluation trials for private companies. Between 2017 and 2022 the faculty of Agriculture has carried out 338 number of Govt. and Non-Govt. projects worth Rs. 1987.64 Lakh.

Name of the Department	No. of Projects	Amount in Lakh Rs.
Agronomy	63	387.87
Horticulture	9	24.97
Genetics and Plant Breeding	3	1.92
Agricultural Extension	1	72.50
Agricultural Economics	6	34.45
Entomology	141	890.07
Plant Pathology	99	490.87
Agricultural Microbiology	9	69.06
Soil Science & Agricultural Chemistry	7	15.93
<b>Total</b>	<b>338</b>	<b>1987.64</b>

### Extension

Annamalai University is set in a rural environment very close to the eastern coast, amidst three most disadvantaged districts of Tamil Nadu where the majority of the population is socio-economically marginalized. Since it is not an industrial region, the lives of the people in the region is highly precarious and uncertain where the struggle is often to make both ends meet. Less

productive coastal lands, vagaries of monsoon, sea water intrusion, proneness to and frequent occurrence of natural disasters (like floods, cyclones, etc.) and low literacy rate render the lives of these people highly precarious. Though the University has played a significant role in improving the overall socio-economic condition of the region through its educational service, it wanted to address this singular issue that poses challenge to the farming community.

The Faculty of Agriculture plays a leading role in extension of tested technologies. The **submergence-tolerant quality of SIGAPPI** rice variety has become popular both at national and international levels. Farmers of Kerala, especially in the flood-prone districts, prefer this rice variety and it is grown in 1000+ha there. Nearly 2500 farming households in 36 villages have been benefitted by **Integrated Rice + Fish + Poultry Farming** method. The positive impact created by the method in local villages made it become national as it derived nationwide attention through “**Hunnarbaaz episodes**” telecasted by Doordarshan. Ultimately it gained international status and it has been adopted by the **Government of Nepal** and replicated successfully.

**The Centre for Natural Farming and Sustainable Agriculture (CNFSA)** has Organized the Gram Pradhans online Awareness Training Programme on “Natural Farming” for 4 Districts in Tamil Nadu viz., Cuddalore, Tiruvarur, Mayiladuthurai and Tanjore in Collaboration with MANAGE, Hyderabad and Ministry of Agriculture and Farmers Welfare, GOI. In an effort to reach the unreached, the Faculty of Agriculture in partnership with the state department of Agriculture organizes, farmers-scientist meet, conduct workshops, and conduct capacity building programmes for farm women and self-help groups. The Faculty of Agriculture, over the past 60 years, had responded most dynamically to the needs, challenges and opportunities of Indian agriculture and adjusted its mandate, plans and programmes accordingly to deliver agro technologies and human resource for meeting the demands of the Nation. Transfer of latest technologies in agriculture, horticulture, dairy, and allied fields. Hands-on trainings on mushroom production, kitchen gardening, vermicompost production, roof gardening, Medicinal plant cultivation and protected cultivation to the unemployed youth, farmers and Self-Help Groups are conducted throughout the year.

The staff members of the Agricultural Extension have well established contacts with farming community in and around the surrounding of Cuddalore district through RAWE programme. They also have well established link with the various stakeholders like State Department of Agriculture, Panchayatraj Institutions, KVK, Regional Research Stations and NGO's. During RAWE programme, the staff members facilitated the students to organize and conduct various commendable extension activities like meeting, demonstrations, campaigns and exhibitions in the villages.

Due to Covid 19 lockdown the staff members of the department rendered online farm advisory services to the farmers in and around Cuddalore district, by sharing information to their whatsapp. Whatsapp group was also started in the name of AU Extension Farmers Group. A total number of 208 farmers joined this link. Extension scientists, TNAU KVK Scientists and State Agriculture Department Officials have also joined as members of this group and shared useful farm information through text, voice messages and videos.

A You Tube channel **AU Agri Extension 360'** has been initiated. So far 19 videos have been uploaded on various agricultural technologies.

<https://youtube.com/channel/UCPINaWNVVEAT25B-mArNXVw>

Link: <https://youtu.be/Z2uK-o0dQKs>

Link: <https://chat.whatsapp.com/FBIv9Mvo0y6G6HFPSkObmr>

### Farmers Agricultural Technology Information Cell (FATIC)

Considering the information needs of the farming community, a separate cell FATIC (Farmers Agricultural Technology Information Cell) was initiated on 14.02.2022 with the following objectives:

1. To satisfy the information needs of farming community
2. To clarify doubts and offer solutions in Agriculture and Animal Husbandry areas.
3. To organize demonstrations and trainings to farmers, Self Help Group members, Farmers producer Organizations, Extension Professionals and Researchers.
4. To disseminate new and latest farm technologies and also to organize awareness campaigns about welfare programmes of central and state governments.

### Farmers Agricultural Technology Information Cell



### Agriculture Museum

The museum exhibits genesis of Faculty of Agriculture over the past decades. The museum displays various blocks representing technologies used in the farming. The museum houses different models containing evolution of agriculture models, automatic weather station, models of agricultural implements models of soil profile, traditional storage of seeds. The models of termite colony and models of glass house & poly house used for growing of vegetables under controlled conditions, models for crop training and food security, models for rearing of honeybees and silkworm rearing also models of animal husbandry, models being displayed and other useful information being displayed about the diseases, pest, cultivation practices etc., along with various activities carried out by various departments, and various information of all the agriculture departments are displayed.

The faculty of Agriculture organizes farmers day to introduce new agricultural technologies and innovations to the farming community. On the occasion of farmers day, meetings and demonstrations are also organized to enhance knowledge and skill among the farmers, farm women and rural youth.

To enhance capacity building, EDP vocational skill-oriented training programmes are also organized by the department of agricultural extension.

### 6.4.2 Faculty Strength

The Faculty of Agriculture has sufficient number of teaching staff with core agricultural background. At present, 237 core academic faculties are in position in this faculty. Among them, 120 are Assistant Professors, 68 are Associate Professors and 49 are Professors. Apart from this, 59 teaching staff for allied subjects like Agricultural engineering, Basic Science and Humanities (Statistics, Business management, English, Tamil, and Computer Science), physical education and yoga are drafted from the respective Departments from the Faculty of Engineering, Arts, Science, Indian languages and Education of the University. Every teaching staff in the Faculty is directly involved in teaching, research, and extension. Further, they are multi-programme teachers.

#### Faculty strength in the faculty of Agriculture

S. No.	Sanctioned Faculty	Faculty in Place	Vacant Position	Faculty recommended by ICAR
1	Professor	49*	-	3
2	Associate Professor	68	-	8
3	Assistant Professor	120	-	34

\*4 Professors retired from services as on 30.06.2022

#### Faculties deputed from other Departments in the University for teaching allied courses

S. No.	Sanctioned Faculty	Faculty in Place	Vacant Position
1	Professor	8	-
2	Associate Professor	32	-
3	Assistant Professor	18	-
4	Yoga Instructor	1	-

Details of the Departments of Study	Faculty in Place				Vacant Position				Faculty recommended by ICAR			
	Professors	Associate professors	Asst. professors	Total	Professors	Associate professors	Asst. professors	Total	Professors	Associate professors	Asst. professors	Total
Agronomy	6	12	21	38	-	-	-	-	1	1	4+1	7
Horticulture	6	5	24	35	-	-	-	-	1	1	2+1	5
Genetics and Plant Breeding	10	10	12	31	-	-	-	-	1	1	2+1	5
Agrl. Extension	4	9	11	23	-	-	-	-	0	1	1+1*	3
Agrl. Economics	5	5	3	13	-	-	-	-	0	1	2+1*	4
Entomology	3	6	11	19	-	-	-	-	0	1	2	3
Plant Pathology	3	6	13	22	-	-	-	-	0	1	2	3
Agrl. Microbiology	5	9	10	24	-	-	-	-	-	-	1	1
Soil Science & Agrl. Chemistry	6	4	9	19	-	-	-	-	0	1	2+3*	6
Animal Husbandry	1	1	4	6	-	-	-	-	0	0	2+1	3
<b>Sub-Total (Agriculture)</b>	<b>49*</b>	<b>67</b>	<b>118</b>	<b>237</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>8</b>	<b>19+8</b>	<b>40</b>

\*4 Professors retired from services as on 30.06.2022

### Faculties drafted from other Departments from the University for allied and supporting courses

Agri. Engineering	2	22	-	24	-	-	-	-	0	0	2	2
Statistics	6	2	-	8	-	-	-	-	0	0	1	1
English	-	-	13	13	-	-	-	-	0	0	1	1
Tamil	-	7	3	10	-	-	-	-	-	-	-	-
Yoga studies	-	-	1	1	-	-	-	-	-	-	-	-
Computer Science	-	-	2	2	-	-	-	-	-	-	1	1
Physical Education	-	1	-	1	-	-	-	-	-	-	-	-
<b>Sub-Total (Other Departments)</b>	<b>8</b>	<b>32</b>	<b>19</b>	<b>59</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>
<b>Grand Total</b>	<b>57</b>	<b>99</b>	<b>137</b>	<b>296</b>					<b>3</b>	<b>8</b>	<b>32</b>	<b>45</b>

### 6.4.3. Technical and Supporting Staff

A total of 79 Supporting staff, 67 Technical staff and 288 field staff are positioned to support various activities of different departments. The details of administrative, technical, and supporting staff in the faculty are given below.

Department	Number of Staff			
	Supporting staff	Technical staff	Field staff (Farm workers/ Gardeners)	Total
Deans office	11	23	65	99
<b>Departments</b>				
Agronomy	2	13	77	92
Agricultural Economics	1	0	2	3
Agricultural Extension	1	0	2	3
Agricultural Microbiology	3	4	5	12
Entomology	2	2	7	11
Genetics & Plant Breeding	3	4	3	10
Horticulture	3	4	41	48
Plant Pathology	1	2	5	8
Soil Science & Agrl. Chem.	1	5	7	13
Animal Husbandry	1	2	15	18
<b>Administrative Sections</b>				
Establishment (Personnel Dept)	4	0	2	6
Hostels	31	5	53	89
Examinations	8	3	2	13
Directorate of Academic Research (DARE)	1	0	0	1
Directorate of Research (DRD)	1	0	0	1
B Section	1	0	0	1
D1 section (Accounts)	1	0	1	2
E Section	1	0	0	1
H section (Scholarships)	1	0	0	1
Directorate of Admissions	1	0	1	2
	0	0	0	0
<b>Total</b>	<b>79</b>	<b>67</b>	<b>288</b>	<b>427</b>
<b>Grand Total</b>				<b>427</b>

\* Excluding the supporting staff of central library, sports pavilion, yoga centre and other centralized services.

The technical and supporting staffs help in the delivery of content and facilitate transfer of knowledge. Sufficient Field staffs are available to maintain the laboratories, demonstration farms,

crop museums, insectary, meteorological observatory, dairy, poultry, vegetable unit, floriculture unit, garden, post harvest laboratory, sewage farm, breeding farm and pot culture yards.

Further the supporting staffs play a key role in monitoring the attendance, maintenance of database, scheduling of classes, preparation of academic calendar, practical schedule, allotment of halls, vehicles and maintain records of scholarship etc. Qualified persons like Farm Superintendents, Garden superintendents, Orchard Manager and Deputy Garden/farm superintendents are appointed with technical qualifications to support and monitor the farm operations.

The technical and supporting staff of Department of Horticulture manages orchard, vegetable area and floriculture and medicinal plants unit. The model demonstrative dairy and poultry unit utilize the farm workers in milk production and poultry production under the guidance of veterinary doctors. Garden workers are engaged in establishment and maintenance of various garden units in the campus. They are also engaged in nursery activities, interior decoration, and help in conduct of field practical. In other departments, the services of supporting staff are used to conduct laboratory practical and pot culture yard.

#### 6.4.4. Classrooms and Laboratories

Sufficient lecture halls are available in the campus. Apart from 10 lecture halls available in the faculty premises, an exclusive block with 16 spacious halls spread over in two floors at Kumara Raja Muthiah Building is dedicated for teaching theory only. Each class room is sufficient to accommodate about 100 - 120 students. For theoretical teaching, the registered students are divided into batches. The theory batch consists of 60 students and practical batch consists of 30 students. The faculty has adequate laboratories and field facilities to offer practical exposure. The farm unit including field, orchard and gardens are used for field based practical demonstrations and crop production. The engineering departments provide practical exposure on survey, hydraulics, farm machinery and post-harvest. A well-developed sports complex available in the university campus is utilized for physical education course. The yoga classes are held at the yoga centre of our university which has facility for mass meditation and yoga practices.

#### Class Rooms - Smart Theory Halls

Sl. No.	Place	Name of the Hall	Dimension
1	Faculty of Agriculture	New Lecture Hall -1	35'x24'
2	Faculty of Agriculture	New Lecture Hall -2	35'x24'
3	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 3	39'x29'
4	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 4	29'x40'
5	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 5	29'x30'
6	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 6	39'x29'
7	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 7	29'x40'
8	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 8	39'x29'
9	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 9	29'x29'
10	Faculty of Agriculture	M.A.M. Ramasamy Block-Hall 10	42'x29'
11	Tech Park Building	Hall 1	39'x29'
12	Tech Park Building	Hall 2	39'x29'
13	Tech Park Building	Hall 3	39'x29'
14	Tech Park Building	Hall 4	39'x29'
15	Tech Park Building	Hall 5	39'x29'
16	Tech Park Building	Hall 6	39'x29'

17	Tech Park Building	Hall 7	39'x29'
18	Tech Park Building	Hall 8	39'x29'
19	Tech Park Building	Hall 9	29'x28'
20	Tech Park Building	Hall 10	29'x28'
21	Tech Park Building	Hall 11	29'x28'
22	Tech Park Building	Hall 12	29'x28'
23	Tech Park Building	Hall 13	29'x28'
24	Tech Park Building	Hall 14	29'x28'
25	Tech Park Building	Hall 15	29'x28'
26	Tech Park Building	Hall 16	29'x28'

### Laboratories and other facilities for Practical and Hands on training (UG) - Department wise

All the laboratories have sufficient space, infrastructural facilities and consumables. There are farm land, orchards, poly-houses, shade-net house, apiary, sericulture unit, insectary, bio-pesticide production unit, pot culture yard, mushroom shed, glass house and dairy unit. The details of instruments available in various departments are summarized below.

Details	ICAR Requirement		Available		
	No. of Rooms	Dimensions (in ft.)	Department	No. of Rooms	Dimensions (in ft.)
Laboratories (UG)	12	30 x 60 Larger department will have two	Agronomy	11	19' X 18' 30' X 20' 30' X 20' 18' X 14' 34' X 19'-4 nos 40' X 30' 18' X 15' 21' X 18'
			Agricultural Economics	1	39' X 29'
			Agricultural Extension	1	30' X 42'
			Agricultural Microbiology	2	19' X 49'-1 20' X 30'-1
			Entomology	2	38' X 30' 37' X 31'
			Genetics & Plant Breeding	3	30' X 36' 30' X 21' 30' X 21'
			Horticulture	4	40' X 30' 34' X 19'-3nos
			Plant Pathology	3	42' X 25' 36' X 25' 42' X 30'
			Soil Science and Agricultural Chemistry	4	19' X 33' 31' X 67' 30' X 29' 38' X 24'
			Animal Husbandary (Division)	2	30' X 22' 47' X 28'

**1. Agronomy + (Agroforestry)**

S. No.	Facilities	ICAR Requirement	Available
1	Crop cafeteria	½ acre land, Small implements like spade, hoe, khurpi, darati, etc.	½ ac land, 404 implements
2	Museum for identificatiino of seeds, fertilizer, weeds, commonly used agro- chemical and medicinal and aromatic plants etc.	Storage bottle, Herbarium posting material	206 storagebottles 120 herbarium
3	Field of sowing method, fertilizer application, irrigation and soil productivity and yield estimation	Small equipment / implement	Seed dressing drum-2 Manual seed drill, fertigation unit-2, Tensiometer- 3
4	Irrigation water measurement, bulk density etc.	-	Irrigation measurement device
5	Vermicompost unit	-	Production of 300 Kgs of vermicompost / 3 months
6	Biogas Unit	-	60 Cu. m.Capacity
7	Poly house	-	300 Sq. ft
8	Wet Land	-	137.35 ac
9	Wet Land at Thiruvadaimaruthur & Keelmathur	-	117 ac
10	Garden land	-	38.25 ac
11	Grass farm	-	9.32 ac
	<b>Equipment</b>		
1.	Moisture box	30	60
2.	Moisture meter	5	5
3.	Tube Auger	10	20
4.	Bucket Auger	10	20
5.	Weighing Banalce	1	2
6.	Seed Germinator	2	2
7.	Conductivity Meter	1	2
8.	pH meter	2	4
9.	Water Bath	1	2
10.	Shaker	1	1
11.	Chlorophyl Meter	1	1
12.	Drip and Sprinkler System	3	5
13.	Sprayer	3	10
14.	Spring Balance 50 Kg	5	5
15.	Spring Balance 10 Kg	5	5
16.	Top Pan Balance 1 Kg capacity	5	5
17.	Top Pan Balance 2 Kg capacity	5	5
18.	Meter scale	10	20
19.	Tape	5	10

20.	Brix Meter	2	4
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### Other Major Equipment Available

Tissue analyzer (1), Plant growth chamber(1), Laser guided land leveler(1), Combined harvester(1), Paddy transplanter (1), Micro-kjeldahl (3), Macro-kjeldahl (3), Soxhlet apparatus (1), Automatic nitrogen/ Protein estimation system (1), Centrifuge (1), pHmeter (1), ECmeter (1), Atomic Adsorption Spectrophotometer (1),

Maximum and minimum thermometer (3), Wet and dry thermometer (2), Soil thermometer (3), Grass minimum thermometer (1), Whirling psychrometer (1), Dew Gauge (1), USWB open pan evaporimeter (1), Hygrometer (1), Thermo hygrograph (1), Sunshine recorder (1), Wind vane (1), Anemometer and Model observatory (1).

### 2. Agricultural Economics + (Basic Economics, Maths & Computer Science and Statistics)

S. No.	Facilities	ICAR Requirement	Available
1	Computers	15	30+4
2	Camera	1	2
3	Software	As per requirement	SPSS, STRATA, R-Programming and E-views

### 3. Agriculture Extension & Communication + (Sociology and Psychology, English) Audio-visual Lab.

S. No.	Facilities	ICAR Requirement	Available
1.	LCD Projector	1	5
2.	Cameras (SLR) with zoom, wide angle, telephoto lens	1	2
3.	Video cameras with tripod, lighting accessories and editing facility	1	2
4.	Computers (work station) with editing softwares	1	2
5.	Digital voice recorders	5	7
6.	Audio recording-mixing consoles	1	2
7.	Computation softwares for Statistics	1	2

### 4. Entomology

S. No.	Facilities	ICAR Requirement	Available
1.	Binocular Microscope	20	30
2.	Insect Box	60	1214
3.	Insect Collection Nets	60	150
4.	Collection Bottles	60	150
5.	Insect Collection Big Boxes for Museum (1 for each order)	29	9 big boxes 110 museum boxes
6.	Insecticides for showing students/ Representative for each group	As per requirement	100 containers
7.	Stereomicroscope	1	10
8.	Electronic Balance	1	4
9.	Soxhlet Extraction Apparatus	1	15 set
10.	Bee keeping equipment	1 set	87 set
11.	Oven	1	3
12.	Potters Tower	1	1

13.	Sprayers	1 of each type	3 in all types
14.	Light traps	1 set	5 set
15.	Fumigation chamber	1	3
16.	Slides / cover slipe	As per requirements	25 boxes each
17.	pH meter	1	5
18.	Computer with printer	1 set	4 set
19.	Apiculture Laboratory	-	1
20.	Pot culture yard	-	7
21.	Apiary	-	3
22.	Silkworm rearing units	-	3
23.	Sericulture Laboratory	-	1
24.	Skill Laboratory	-	1
25.	Insect Museum	-	1

### Other Equipments Available

Trinocular stereo zoom with Montage software for capturing 3D image (1), Phase contrast trinocular stereo zoom microscope (3), Multiple gel casting unit (1), Submarine and vertical slab gel electrophoresis unit and power pack (1), Olfactometer (1), Volatile Collection Chamber and insect rearing cages (1), Micro applicator(1), Rotary flash vacuum evaporator (1), Leaf area meter (1), BOD Incubator (4), Double beam and single beam Spectrophotometers (1), Blender (1), Deep Freezer (1), Microtome (1), Rotary Shaker (1), Insect Suction Sampler (1), Refrigerated Centrifuge (1), Soxhlet extraction apparatus (10), Tissue homogenizer (1), pH meter(1), EC meter (1), Double distillation unit (2), Electronic weighing balance (2), Environmental test chamber (1), Hot air Oven (3), Low temperature water circulator (1), Laminar Flow Chamber (1), Trinocular stereo Zoom microscope (1), Dissection microscopes (15)

### 5. Genetics & Plant Breeding + (Seed Science & Technology)

S. No.	Facilities	ICAR Requirement	Available
1.	Microscope	10	46
2.	Binocular Microscope	10	10
3.	Electronic Moisture Meter	2	5
4.	Electronic Balance	2	4
5.	Seed Germinator	2	2
6.	Automatic seed / grain counter	1	1
7.	Cytology & Cytogenetic Lab.	-	27x 20'
8.	Seed Technology Lab. 2	-	15x7', 15x7'
9.	Molecular Lab.	-	30x12'
10.	Plant Tissue culture Laboratory	-	10x8'

### Biotechnology

S. No.	Facilities	ICAR Requirement	Available
1.	Hot Air Oven	1	1
2.	BOD Incubator	1	1
3.	Fluorescence microscope	1	1
4.	Centrifuge	1	3
5.	Growth Chamber	1	2
6.	Distillation Assembly	1	1
7.	PCR	-	3
8.	Gel Documentation	-	2

9.	pH meter	-	2
10.	Orbital Shaker	-	1

### Other Equipments Available

Monocular microscope (3), dissecting microscope(3), digital compound microscope (3), digital microscope (3), Binocular microscope with computer enabled, with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber), seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers, laminar air flow chamber, autoclave and incubator, mini thermocycler, electronic weighing balance, gel documentation chamber, BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-UV transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge, Agarose Gel electrophoresis with power pack, BOD incubator, Cyclo Mixer, Micro centrifuge, Orbital shaker, gel caster, Magnetic stirrer, Micro air oven, Spectrophotometer, BIORAD-30 wells, GENEI-gel rocker, Vaccum emasculator, ST 360 cyber ELISA, Water soil analysis kit and ELISA microplate washer.

### 6. Horticulture + (Food Science & Technology)

Name of the Instructional Unit	Dimension
Postharvest lab (UG)	40x30'
Orchard, OP Orchard, New area	63.07 ac
Shade house	60x30'
Nursery	0.5ac
Field Instruction Lab I	34x19'
Field Instruction Lab II	34x19'
Field Instruction Lab III	34x19'
Implement shed	20x12'
Threshing yard	5540 Sq.ft.
NVP house 1 (EXP. Learning)	35x12'
NVP house 2 (EXP. Learning)	35x12'
NVP house 3(EXP. Learning)	36x13'
Shade house	60x55'
Mist chamber (EXP. Learning)	15x10'
Poly house (EXP. Learning)	60x40'
Lake View garden, Shastri Hall garden, Statue garden, Tech Park garden, Medical College garden, Music College garden, Zoology garden, Education garden, Yoga garden, Guest house garden, Hospital Garden, Miyawaki garden, Oxygen Park, Entrance garden, Engineering garden, Agri garden	59.73 ac

**a. Labs. (Post Harvest)**

S. No.	Facilities	ICAR Requirement	Available
1.	Hand Refractometer	5	10
2.	Digital Refractometer	2	2
3.	Oven	1	2
4.	Refrigerator	1	3
5.	Electronic Weighing Balance	2	3
6.	Pan Balance (1 kg., & 10 kg. capacity each)	2	4
7.	Deep Freezer	1	1
8.	pH meter	1	4
9.	Fruit crusher	1	2
10.	Grinding and Mixing Machine	1	2
11.	Distillation Assembly	1	2

**b. Lab (UG Lab)**

S. No.	Facilities	ICAR Requirement	Available
1.	Seed Germinator	2	2
2.	Grafting and Budding knife	60	150
3.	Secateur	60	150
4.	Saw	5	10
5.	Loppers	5	10
6.	Mist Chamber	1	1
7.	Poly house with drip irrigation system	2	2
8.	Microscope	2	2

**Other Equipments Available**

Electronic Automatic Kel Plus 20L, Electronic Superior Automatic Distillation System with Display, Centrifuge, Circulating Thermostatic water bath, Double distillation water still, Hot air oven, , Plant Canopy analyzer, Spectrophotometer. Available minor equipments PH Meter, Pocket Refractometer, Monocular microscope, Binocular Research Microscope, Trinocular Research Microscope, Dissecting microscope, Advanced student microscope, Digital Electrical conductivity meter, Hot Plate, Water bath, Digital PH meter, Electronic Weighing balance, Gel Documentation, Freeze Dryer, Deep Freezer, Automatic Microprocessor based 20 place Macro Block Nitrogen system, Automation Distillation System and Electronic Acid Neutralizer Scrubber, AM300 Portable Leaf Area Meter, Refrigerated Centrifuge, Automatic solvent extraction system, UV-VIS Spectro photometer, Chlorophyll content meter CCM 200, , Lux Meter, Laminar Air Flow Chamber, Refractometer, Dehydrator, Pulper, Humidity meter, Anemometer, Sachet Sealing Machine, Bottling and Packaging Machine, Research microscopes and Dissection microscopes, Infrared thermometer, refrigerator, Pan balance, grafting and budding knife, secature, hand saw, brush cutter, lawn mower, mechanical weeder, high pressure sprayers.

**7. Soil Science and Agricultural Chemistry + (Microbiology, Agro-meteorology, Environmental Sciences)**

S. No.	Facilities	ICAR Requirement	Available
1.	Electronic Top pan balance (0.1 g capacity)	2	2
2.	Electronic Top pan Balance (1 mg capacity)	2	2
3.	Hot air oven	2	3
4.	pH meter	5	6
5.	EC Meter	5	6
6.	Flame photometer	1	1
7.	Visible spectrophotometer	2	5

8.	Hot plate	2	3
9.	Distilled water unit	1	3
10.	Water bath	2	4
11.	Rotary shaker	2	2
12.	Digestion block	2	2
13.	Hydrometer	5	5
14.	Infiltrometer	2	1
15.	Hydraulic conductivity meter	1	1
16.	Atterberg's limits meter	5	-
17.	Nitrogen Analyzer	2	1

### Other Equipment Available

CN Analyzer, Pressur Plate Apparatus, T-27 FTIR Spectrometer System Tensor -27, Soil Grinding machine (2), Rotary Shaker, Soil Hydrometer, Grain size analyser, Hydrometer, Muffle Furnace (2Nos), centrifuge, Green House Analyzer, Sonicator, Scanning Visible Spectrophotometer, PC based UV-VIS Spectrophotometer, pH meter (2 Nos), Ground Truth Radio meter with 4 filter, Chlorophyll meter – Spade 502 (1), Water analyser, Digital conductivity meter (3Nos), Nephelometer, Flame photometer (1), Euro –cleaner, GPS equipment (2 Nos), Atomic Absorption Spectrophotometer (1), EC Meter (1), Electronic weighing balance (5 Nos), Rectangular Sand Heating Plate (2 Nos), Socs Plus Refrigerated Water cooling System, Deep freezer, Automatic Nitrogen/Protein Estimation System, Willey mill (2 Nos), Centrifuge (1), Mono Quartz Distill, Muffle Furnace, Vacuum Pump, Water Bath - 12 Holes (4Nos), Hot Air Oven (255 x 455 x 455 mm), Hot Air Oven (605 x 605 x 605 mm), Hot Air Oven (605 x 455 x 910 mm), Horizontal Shaker, Nitrogen Distillation Apparatus set, Konica Minolta Copier machine, Kjeltex N analyser, Soxhlet apparatus, Laminar flow chamber, Aggregate analyser, Mantle, Double beam Spectrophotometer, Double Distillation Unit, Bremner apparatus, Micro kjeldahl unit, Centrifuge, Environmental test chamber, Li-COR methane analyser, Fuel gas Generator

### 8. Agricultural Microbiology

S. No.	Facilities	ICAR Requirement	Available
1.	Pot culture yard	-	50 sq.ft.
2.	Biofertilizer production unit	-	50 sq.ft.
3.	Glass House / Shade net	-	50 sq.ft.
4.	Electronic Top pan balance (0.1 g capacity)	2	2
5.	Electronic Top pan Balance (1 mg capacity)	2	1
6.	Hot air oven	2	7
7.	pH meter	5	5
8.	EC Meter	5	5
9.	Flame photometer	1	1
10.	Visible spectrophotometer	2	1
11.	Hot plate	2	2
12.	Distilled water unit	1	2
13.	Water bath	2	2
14.	Rotary shaker	2	2
15.	Binocular Microscope	20	20
16.	BOD incubator	2	5
17.	Autoclave	2	5
18.	Laminar Air Flow	1	9
19.	Microwave oven	1	1

**Other Equipments Available**

Autoclave (5), Hot air oven (7), BOD incubator (5) Electronic Balance (2), Distillation Unit (2), Light Microscope (12), Alcohol Unit (1), Hot plate (2), Laminar Flow chamber (9), Cooling centrifuge (1), phase contrast microscope (46), Fermentor with complete accessories (1), Spectrophotometer (1), HPLC (1), Gas Chromatography (1), Gel documentation unit (3), stereo zoom microscope (1), High resolution Microscope with image capturing system (1), ELISA Reader (1), Refrigerator (7), UV- Visible double beam (1), Flame photometer (2), PCR (1), Centrifuge (2), Nitrogen Analyser system (1), Vacuum Desiccators (1), pH Meter (2), Mechanical Shaker (1).

**9. Plant Pathology**

S. No.	Facilities	ICAR Requirement	Available
1.	Microscope compound with photo display arrangement	3	5
2.	Sample processing Board (Dry preservation of samples)	5	10
3.	Wet preservation jars	4	150
4.	Autoclave	50	5
5.	Oven	2	5
6.	Deep Freeze	1	2
7.	Centrifuge (3000 rpm)	1	2
8.	Refrigerator	1	5
9.	Water bath	2	2
10.	Electronic balance	2	2
11.	Weighing machine	1	2
12.	Incubator	1	5
13.	Ocular meter	5	10
14.	Stage Micrometer	5	10
15.	Camera Lucida	5	5
16.	Mushroom shed-1 (Experiential Learning)	-	31x15'
17.	Mushroom shed- 2 (Experiential Learning)	-	30x15'
18.	Glass house	-	38x15'
19.	Pot Culture Yard	-	0.4 ac

**Other Equipments Available**

PCR-Thermocycler, Gel Documentation System, Electrophoresis Unit, UV Transilluminator, Fermentor, Microscope with bright field Phase contrast and digital SLR Camera, ELISA Reader, Spectrophotometer, Cooling Centrifuge, Deep freezer, Micro centrifuge, Camera lucida, Bio safety cabinet, Laminar Air Flow, Hot Air Oven, BOD, Shaking incubator, Autoclave, Cooling orbital shaking incubator, RT-PCR, Western blot unit, Growth Chamber, Lyophilizer, -80 0C deep freezer, Fluorescent Phase contrast Microscope, Digital microscope, Fluorometer, Student microscope- 90 nos., Ocular Micrometer and Stage Micrometer.

**10. Animal Sciences including Fisheries**

S. No.	Facilities	ICAR Requirement	Available
1.	5000/6500 Feed and Forage Analyser	01	-
2.	Hand and Electric Centrifuge	01	1
3.	Analytical Balance	01	-
4.	Hot air Oven	01	1
5.	Micro kjeldahl N digestion & dismtillation	01	-

	apparatus		
6.	Soxhlet unit for fat estimation	01	-
7.	Hot plate, Fiber Tech	01	-
8.	Vacuum pump	01	-
9.	Willy Mill Grinder	01	-
10.	Platform balance (100 kg cap)	01	1
11.	Gerber Centrifuge Unit (for milk fat testing)	01	1
12.	Milk analyser (automatic)	01	1
13.	Crude fiber estimation unit	01	-
14.	Distilled water unit	01	-
15.	Incubator cum catcher	01	-
16.	Brooder machine	01	1
17.	Feeder	1	4
18.	waterer	1	4
19.	Egg candling machine	1	1
20.	Debeaker	1	1
21.	Vaccinator	1	1
22.	Milking machine	As per requirement	2
23.	Milking bucket	As per requirement	2
24.	Milking can	As per requirement	2
25.	Animal and bird identification tools	As per requirement	Ear tag, wind/leg bands
26.	Chaff cutter	1	1
27.	Lactometer	1	6
28.	Castrator	1	-
29.	Shearer	1	-
30.	Electric dehorner	1	1
31.	Artificial vagina	1	-
32.	Common Medication device	1	Syringes, 4 units, drencher
33.	Cattle crate	1	1

### Other Equipments

Carton Digital Binocular, Model Feed Plant, Model Hatchery Unit, Electronic Weighing balance, Canon Scanner, Cream Separator

### 6.4.5. Conduct of Practical and Hands-on-Training

According to the number of labs available in each department and considering the nature of the practical, the classes are scheduled to engage all the laboratories throughout the day from 7.00 a.m. to 4.30 p.m., accommodating five batches of practical in a day. During practical, the students undertake field work, dissection, identification, collection of specimens and preservation, insect rearing and collection, preservation of insects, workout calculations recording of observations, estimation of nutrients, isolation of microorganisms, biofertilizer/pesticide preparation, mushroom cultivation, safe handling of farm implements and machineries, spraying, weeding, irrigation, harvesting and post-harvest processing, etc.

The faculty has the provision to take students to nearby farmers unit and institutions during practical to study on farm cultivation and to provide wider exposure on farmers problems, new crops, extension strategies and economical aspects of agri-business. The students are exposed to field level crop breeding and agronomic experiments. Modalities on evaluation of segregating population are taught during breeding practical classes. Hands-on training is given on emasculation and crossing of crops in breeding practical classes. Lectures are supported by video clippings which help the students to understand the concepts clearly.

In Horticulture course, the students are given hands on training in various propagation techniques, *viz.*, grafting, layering, budding and cuttings. They are also exposed to micropropagation techniques of horticultural crops, *viz.*, tissue culture methods in the tissue culture laboratory. Further, hi-tech cultivation practices in horticulture crops, *viz.*, protected cultivation, precision farming technology, ultra high-density planting developed at horticulture farm are demonstrated to them. They receive practical knowledge on seed production technology of major vegetable crops. They are provided hands on training in special horticultural practices, *viz.*, pinching, disbudding, training, pruning, etc. The students are well trained in landscaping, a booming sector in horticulture industry, which includes lawn making, identifying various ornamental plants, creepers, and trees.

#### VII & VIII Semesters

#### **Student READY (Rural and Entrepreneurship Awareness Development Yojana) to assure employability and to develop entrepreneurs**

This will be undertaken by the students during the seventh and eighth semesters. Student READY shall be run for full year by making two groups and rotating activities of the final year in two groups. To get the eligibility for registering for the Student READY programme, the students should have completed all the courses successfully up to Sixth semester. No student should be allowed to take up the Student READY programme with backlog/repeat courses.

The students will be required to have registered for the three components listed below. The minimum attendance required for this programme is 85%. Any student in the event of recording shortage of attendance has to re-register the EL when offered next by paying the assigned fee.

1. Experiential Learning (EL)/Hands on Training (HOT) - 20 credits (24 weeks)
2. Rural Agricultural Work Experience (RAWEX) 10 credits (10 weeks)
3. In Plant Training/Industrial attachment - 10 credits (10 weeks)

#### **The Experiential Learning (EL) /Hands on Training (HOT)**

Experiential Learning/Hands on Training (HOT) helps the student to develop competence, capability, capacity building, acquiring skills, expertise, and confidence to start their own enterprise and turn job creators instead of job seekers. EL provides the students an excellent opportunity to develop analytical and entrepreneurial skills, and knowledge through meaningful hands on experience, confidence in their ability to design and execute project work.

The main objectives of EL are:

- To promote professional skills and knowledge through meaningful hands on experience
- To build confidence and to work in project mode
- To acquire enterprise management capabilities

Experiential Learning (EL) aims towards practical work experience in real life situation among the students and therefore it helps the student become “job provider rather job seeker”. EL provides students an excellent opportunity to develop entrepreneurial skills through meaningful hands-on experience and confidence. As the programme is enterprise oriented, students and faculty are to attend the activities of the enterprise even on institutional holidays with total commitment. Each EL unit shall have the organizational set-up as follows:

Chief Executive Officer	- HoD
Managing Director	- Senior Teacher in the group
Board of Directors	- Other teachers in the group
Manager	- Student representative from the group
Deputy Manager	- Another student from the group

The Experiential Learning (EL) shall be run for full year by making two groups and rotating activities of the final year in two groups. The students will register for any of two modules, listed below, of 0+10 credit hours each. A separate certificate should be issued to the students after successful completion of EL. Allotment of EL amongst students to different modules should be done strictly on the basis of merit at the end of sixth semester.

S. No.	Course Code	EXP Activity	Department	Credit
1	ELAGR 401	Agriculture Waste Management	Agronomy	0+10
2	ELAGR 402	Organic Production Technology	Agronomy	0+10
3	ELGPB 401	Seed Production and Technology	Genetics and Plant Breeding	0+10
4	ELAGM 401	Production Technology for Bioagents and Biofertilizer	Agricultural Microbiology	0+10
5	ELPAT 401	Mushroom Cultivation Technology	Plant Pathology	0+10
6	ELSAC 401	Soil, Plant, Water and Seed Testing	Soil Science and Agricultural Chemistry	0+10
7	ELENT 401	Commercial Beekeeping	Entomology	0+10
8	ELENT 402	Commercial Sericulture	Entomology	0+10
9	ELAHS 401	Poultry Production Technology	Animal husbandry	0+10
10	ELHOR 401	Commercial Horticulture	Horticulture	0+10
11	ELHOR 402	Floriculture and Landscaping	Horticulture	0+10

Periodical evaluation of the above course will be done by the course teacher during different stages of work. Final evaluation of the above course will be done by the teacher in charge and another staff member appointed as examiner by the Head of the Department. The final examination will be conducted by the University before the commencement of regular final semester examinations.

S. No.	Parameters	Max. Marks
1.	Project Planning and Writing	10
2.	Presentation	10
3.	Regularity	10
4.	Monthly Assessment	10
5.	Output delivery	10
6.	Entrepreneurship Skills	10
7.	Technical Skill Development/ Business networking skills	20
8.	Report Writing Skills	10
9.	Final Presentation	10
	<b>Total</b>	<b>100</b>

### **Rural Agricultural Work Experience (RAWE) and Industrial Attachment (IA) (Village/ Industrial Attachment Training Programme)**

It shall be undertaken by the students during the seventh/eighth semesters for a total duration of 20 weeks with a weightage of 0+20 credit hours in two parts. The Rural Agricultural Work Experience (RAWE) helps the students primarily to understand the rural situations, status of

agricultural technologies adopted by the farmers to prioritize the farmers problems and to develop skills & attitude of working with farm families for overall development in rural area. The timings for RAWE can be flexible for specific regions to coincide with the main cropping season.

It will consist of general orientation and on-campus training by different faculties followed by village attachment/unit attachment in university/college/KVK/estates or a research station. The students would be attached with the horti-industries to get an experience of the industrial environment and working.

Due weightage in terms of credit hours will be given depending upon the duration of stay of students in villages/horti-industries. At the end of RHWE/IA, the students will be given one week for project report preparation, presentation and evaluation. The students would be required to record their observations in field and horti-industries on daily basis and will prepare their project report based on these observations.

### RAWE & IA - Rural Agricultural Work Experience and Industrial Attachment

Activities	Department	No. of weeks	Credit Hours
General orientation & On campus training by different faculties	Agricultural Extension	1	9
Village attachment		8	
Unit attachment in Univ./College. KVK/ Estates/Research Station /Financial Inst.	Agricultural Economics	5	9
Agri clinic/ Agri business center		4	
Agro-Industrial Attachment			
Project Report Preparation, Presentation and Evaluation	Agricultural Extension & Agricultural Economics	2	2
<b>Total weeks for RAWE &amp; AIA</b>		<b>20</b>	<b>20</b>
EXT 411 Educational Tour II	Agricultural Extension		1(0+1)

### RAWE Component-I

#### Village Attachment Training Programme

Sl. No.	Activity	Duration
1.	Orientation and Survey of Village	1 week
2.	Agronomical Interventions	1 week
3.	Plant Protection Interventions	1 week
4.	Soil Improvement Interventions (Soil sampling and testing)	1 week
5.	Fruit and Vegetable production interventions	1 week
6.	Food Processing and Storage interventions	1 week
7.	Animal Production Interventions	1 week
8.	Extension and Transfer of Technology activities	1 week

### RAWE Component -II

#### Agri-Industrial Attachment

- Students shall be placed in Agro and Cottage industries and Commodities Boards for 03 weeks.
- Industries include Seed/Sapling production, Pesticides-insecticides, Post harvest-processing value addition, Agri-finance institutions, etc

**Industrial Attachment:**

The students would be attached with the Agro-Industries based industries for a period of 3 weeks to get an experience of the industrial environment and working.

**Activities and Tasks during Agro-Industrial Attachment Programme**

- Acquaintance with industry and staff
- Study of structure, functioning, objective and mandates of the industry
- Study of various processing units and hands-on training under supervision of industry staff
- Ethics of industry
- Employment generated by the industry
- Contribution of the industry promoting environment
- Learning business network including outlets of the industry
- Skill development in all crucial tasks of the industry
- Documentation of the activities and task performed by the students
- Performance evaluation, appraisal and ranking of students

The final examination will be conducted separately at the end of the semester by the University. The marks will be awarded as detailed below.

Particulars	Max marks	Evaluation by
Observation Note book	20	By Teacher in-charge
Skills learned	20	
<b>Final examination</b>		
Commendable activities	10	By the Examiners
Detailed project report presentation and Record	30	
<i>Viva Voce</i>	20	
<b>Total</b>	<b>100</b>	

**Annexure I: Report on Experiential learning units**

- ❖ Exposure field visits to are organized to provide hands on training to students for various courses
- ❖ Students are trained on basic laboratory techniques and applied aspects at field level.
- ❖ Students are trained on identification of weeds/plant species/insects/ diseased symptoms, nutrient deficiency symptoms, etc.
- ❖ Students are given hands-on training in collection of soil samples, plant propagation techniques, plant protection techniques, etc.
- ❖ Students cultivate crops by themselves and learn crop cultivation practically.
- ❖ Students are exposed to practical agriculture by field trips to meet progressive farmers at different villages.
- ❖ The students undergo Agro-Industrial tie-up programme in different agro-based industries, Rural Agricultural Work Experience programme in villages and Experiential Learning Programme.

**Hands-on Training for B.Sc. (Hons.) Agriculture**

S.No.	Name of the Department	Hands-on Training courses	
		B.Sc. (Hons.) Agriculture	Hands on training given to students
1.	Agronomy	AGR 101 - Fundamentals of Agronomy	Identification of seeds and crops Study of tillage implements Study of seeding implements, inter-cultivation implements and practice Different methods of sowing Identification and study of manures and fertilizers

		AGR 102 - Introductory Agro meteorology and Climate change	Site selection & layout for observatory Measurement of various weather parameters Determination of vapor pressure, relative humidity and dew point temperature readings, hygrometric table.
		AGR 103 - Irrigation Management	Estimation of soil moisture and crop water requirement Measurement to fetigation water through water measuring devices like flumes, weirs and water meter Measurement of field capacity, bulk density and infiltration rate Acquiring skill in land shaping for different surface irrigation methods Operation and economics of drip and sprinkler irrigation systems Irrigation methods for various crops
		AGR201 - Weed Management	Identificationofweeds Surveyofweedsincropfields and other habitats Preparationofherbariumofweeds;weedseedbank Use of tools and implements Study of herbicide application equipments andcalibration Methods of herbicide application Preparation of list of commonly availableherbicides Designingintegratedweedmanagementpractic esforvariouscrops.
		AGR 202 - Introductory to Forestry	Identification of trees, Seeds and seedlings of important agroforestry species Seed treatments Forest nursery-types, Layout, bed preparation Nursery technology of important tree species Forest mensuration Biomass estimation in Energy plantations
		AGR 203- Crop Production Technology-I ( <i>Kharif</i> Crops)	Nursery preparation and transplanting of rice, pearl millet, and finger millet. Sowing of various Kharif crops Topdressing and foliar feeding of nutrients, Study of crop varieties and important agronomic experiments.
		AGR204 - Practical Crop Production - I	Acquiring skills in selection of nursery area, preparation of nursery, application of manures and fertilizer to nursery Study and practice of green manuring and bio-fertilizer application in rice and acquiring skills in seed treatment, seed soaking and incubation, nursery sowing and management Study and practice of main field preparation and puddling operations Practicing of field preparatory operations Practicing transplanting techniques in lowland rice/ exposure to mechanized transplanting Estimation of plant population and acquiring skill in thinning and gap filling Study of weeds and weed management in rice/

			exposure to mechanized weeding
		AGR 205-Crop Production Technology-II (Rabicrops}	Sowing methods of rabi field crops Identification of weeds and Study of morphological characteristics in <i>rabiseason</i> crops. Oil extraction from Oil seed crop
		AGR 301 - Practical Crop Production - II	Acquiring skill in seed treatment practices Study and practice of main field preparation for crop Practicing of application of manures and fertilizers for crop Practicing sowing of crop/ exposure to mechanized sowing Acquiring skill in pre-emergence application of herbicides Estimation of plant population and acquiring skill in gap filling and thinning Observation on nutritional deficiency symptoms and corrective measures
		AGR 302 -Rainfed Agriculture, Watershed Management And Secondary Agriculture	Preparation of cropping pattern for different rain fed areas. Interpretation of meteorological data and scheduling of supplemental irrigation on the basis of evapo-transpiration demand of crops. Characterization and delineation of model watershed. Field demonstration on soil and moisture conservation measures Construction of water harvesting structures.
		AGR 303 -Farming Systems And Organic Farming For Sustainable Agriculture	IFS model in different agro-climatic zones To study the various components and their utilization. Preparation of enrich compost, vermicompost, bio-fertilizers/bio-inoculants and their quality analysis. Developing Indigenous technology knowledge (ITK) for nutrient, insect, pest disease and weed management. Postharvest management-Quality aspect, grading, packaging and handling.
2	Agricultural Economics	AEC 101 Fundamentals of Agricultural Economics	Assignments given to the students by the concerned teacher and evaluated at the end of the semester
		AEC 201 Farm Management, Production and Resource Economics	Field visits to collect the actual data from farmers regarding cost of cultivation, cropping pattern, production details to understand production economics and farm management techniques
		AEC 202 Agricultural Marketing, Trade and Prices	Visits to various regulated and unregulated markets to know the objectives, functions and their role in agricultural development
		AEC 301 Agribusiness Management	Visits to various agro based industries to gain practical exposure to start a new business
		AEC 303 Agricultural Finance, Banking and Co-operation	Visits to various financial institutions to know the procedures to avail loans and government schemes
		AIA AEC 415 Agro	The students are exposed to the operations of

		Industrial Attachment	agro based industries, commercial banks, NABARD, input industries, ACABCs, NGOs, regulated markets, FPOs, Cooperatives and farmers' clubs in order to get practical knowledge and to get an inspiration to become an entrepreneur
		ECAEC 203 Optional Course Project Management	Practical exercises to gain knowledge on project appraisal techniques in agro based projects
3.	Agricultural Extension	EXT - 102 FundamentalsOfAgriculturalExtensionEducation (2+1)	Organizationofgroupdiscussionandmethoddemonstrationintransferoftechnology.First-handexperienceonactivitiesofextensionunits.Writingscriptsformass mediaalongwiththepreparationofagriculturalinformationmaterials. Selectionandpreparationofprojectedand non-projectedvisualaids. Handlingof publicaddressequipment,videocameraandLCDProjector.
		EXT -301 Communicationskills and personality Development (1+1)	EffectivePresentationskills Organizationandparticipationingroupdiscussions. Firsthand experience on reading and comprehension skills. Understandingof importanceand insight into creativityskills.
		EXT - 302 EntrepreneurshipDevelopmentAnd BusinessCommunication (1+1)	Developprojectproposalthrough fieldvisits. Experiencevariousfunctionsanddevelopthemanagementalskillssthroughsimulatedexercises. Prepareandpresentproject reports.
		RAWE - Rural Agricultural Work Experience (0+10)	Conducting need based method demonstrations, campaigns and exhibitions in the villages. Organization of field visits and group discussion with farmers. Organization of farmers/ rural youth training programme. Participation in village social service work. Identification of communication media in the transfer of technologies. Report preparations and presentation
		EXT 411 -Educational Tour (0+1)	Preparation of tour schedule Coordinating various tour related activities Exposure about national level education, research and extension institution.
4.	Agri. Microbiology	AGM101AgriculturalMicrobiology(2+1)	Betterunderstandingofstudentsaboutthemicroscopicworld. Studentsacquirewiththebasiclaboratorytechniquesandtoolsofmicrobiology. Roleofsoilmicroorganismsinsoilfertilityandplantgrowthpromotion. Mass production of bio Inoculants
		AGM - 201 Principles Of Food Science And Nutrition	Students knowledge on microbes and their diversity, sources of contamination in food.

		(1+1)	The students to know the principle underlying food preparation and preservation technologies. Fermentation technologies of producing value-added foods by microbes and their spoilage. Advanced techniques on food production, processing, packing and quality control.
		AGM 202 - Environmental Studies And Disaster Management(2+1)	Students Gain knowledge about the environment and ecology. Student will acquire potential role on the microorganisms employed in Bioremediation. Students will acquire technology about solid waste management Students will aware about current scenario of disaster Management.
		EC AGM 301 Biopesticides and Biofertilizers (2+1)	The concepts and potential of biopesticides and biofertilizers To acquire the basic knowledge about the biofertilizers and biopesticides. Theoretical and practical aspects of biopesticides and biofertilizers production and usage. Development skills about the production technology of biopesticides and biofertilizers Awareness about the importance of biopesticides and biofertilizers in sustainable crop production.
		ELAM 401 Production technology for Bio Agents and Biofertilizers (0+10)	Isolation of bacterial, fungal inoculants. Selection and strain improvement of different type of inoculants. Enhancing the skills on development of Mass Production.
5	Entomology	ENT 101 Fundamentals of Entomology	Dissection of Mouthparts in insects Field collection, preservation and mounting of insects
		ENT 201 Management of beneficial insects and Introductory Nematology	Rearing of silkworm Maintenance of bee colony Extraction of honey Making value added products with honey Identification of Predators and Parasitoids Diagnosing the symptoms of nematode attack
		ENT 301 Pests of Crops and Stored Grain and their Management	Rearing of pest larvae Identification of pests Training on management practices
		ENT 302 Insect Ecology & Integrated pest management	Ecosystem analysis –AESA Mass production techniques of Trichogramma, Chrysopa, SI NPV Preparation of traps Formulation types Spray equipments IPM practices
6	Genetics & Plant Breeding	GPB 101 Fundamentals of Crop Physiology	Measurement of leaf area Measurement of stomatal index and frequency Measurement of plant water potential Growth analysis Measurement of relative water content
		GPB 102 Fundamentals of Genetics	Study of Cell structure Stages of cell division - Mitosis Stages of cell division – Meiosis

			Phenomenon of Crossing over using colour clay Phenomenon of dominance and recessivity Problems on linkage and crossing over
		GPB 201 Fundamentals of Plant Breeding	Plant breeding kit Floral biology and emasculation in major crops Male sterility and self incompatibility Basic statistics-calculation of PCV, GCV, heritability and genetic advance
		GPB 202 Principles of Seed Technology	Seed structure Germination test using different media Tetrazolium test Paper piercing test Brick gravel test Physical purity test Egg floatation technique Acid delinting in cotton
		GPB 301 Crop Improvement -I (Kharif Crops)	Floral biology for hybridization Emasculation and pollination Visit to seed production plot
		GPB 302 Crop Improvement - II (Rabi Crops)	Floral biology for hybridization Emasculation and pollination techniques Layout of field experiments
7	Horticulture	HOR 101 Fundamentals of Horticulture	Preparation of nursery bed Practicing asexual propagation by different methods of Cutting. Practicing asexual propagation by different methods of Layering. Practicing asexual propagation by different methods of Budding. Practicing asexual propagation by different methods of Grafting
		HOR 102 Production technology of fruits and plantation crops	Propagation methods for fruits. Application of manures and fertilizers to fruit crops. Preparation of plant bio regulators and their applications. Practicing harvesting of fruit crops. Practicing postharvest handling of Fruit crops
		HOR 201 Production technology for vegetables, spices and protected cultivation	Raising vegetable seedlings in trays. Transplanting of vegetable crops. Water management techniques for vegetable crops. Fertilizers applications in vegetable crops. Harvesting based on maturity indices of vegetable crops
		HOR-202 Production technology for ornamental crops, MAP and landscaping	Practicing in lawn making. Designing garden for Residence and community living Designing garden for Institute and Industry Designing garden for Public Park. Horticultural crafts- Flower arrangements, Bouquet etc
		HOR-302 Post-harvest management and value addition of fruits and vegetables	Preparation of jam. Preparation of RTS & squash. Preparation of tomato products. Preparation of pickles. Preparation of osmotically dried products.

		ECHOR 301 HI-Tech Horticulture	Modern techniques of nursery production. Climate control in Poly- house. Micro Irrigation Methods-Design, layout and installation methods. Nutrient Deficiency symptoms -its cause and remedy Weed management-weed mat.
8	Plant Pathology	PAT 101- Fundamentals of Plant Pathology	Handling of Microscope Cross section from disease specimens Microscopic identification of fungal spores and fruiting bodies Preparation of Mounting Slides from disease specimens Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.
		PAT 201- Diseases of field and horticultural crops and their management-I	Cross section from disease specimens Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations. Preparation of Mounting Slides from disease specimens
		PAT301- Diseases of field and horticultural crops and their management-II	Cross section from disease specimens Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations. Preparation of Mounting Slides from disease specimens
		PAT 303 - Principles of integrated disease management	Handling different types of sprayers Different methods of application of fungicides and bio control agents Integrated Disease management practices is taught to the UG students with an objective of gaining knowledge on various aspects on crop disease management. Identification of bio agents, impact of natural products on crop disease management. Bio-efficacy studies on new generation fungicides against crop diseases.
		EC PAT 302 - Antagonistic Formulations	Identification and isolation of native bio-agents, plant pathogens and their impact on crop growth. Mass multiplication of Biocontrol agents
9	Soil Science & Agrl. Chemistry	SAC 112- Principles of Analytical Chemistry	Preparation of laboratory reagents preparation of primary and secondary standards Gravimetric analysis Instrumental analysis-potentiometry, conductometry, colorimetry, spectrophotometry Radioactivity - radiation decay, detection and measurements
		SAC 124 - Fundamentals of Biochemistry	Qualitative tests for Glucose, Fructose Qualitative tests for Sucrose, Lactose, Maltose, Starch and Dextrin Quantitative estimation of Carbohydrates Analysis proteins, lipids- various chemical constants assay of Vitamins

		SAC 213 Fundamentals of Soil Science	Identification of rocks and minerals soil profile study collection and processing of soil samples Analysis of soil physical and chemical properties Analysis of exchangeable cations in soil, buffering capacity of soil
		SAC 224 - Soil Resource Inventory and Problem Soils	Profile description, Nomenclature - Soil Taxonomy Soil survey - Soil mapping Remote Sensing and its application in Agriculture Analysis of problem soils Analysis of quality of irrigation water
		SAC 315 Soil Fertility, Fertilizers and Manures	Identification of deficiency and toxicity symptoms Manufacturing technology of urea, ammonium sulphate, SSP, DAP, MOP and SOP. Complex, mixed fertilizers, customized / Specialty fertilizers Manures analysis , Composting techniques. Soil health study Establishment of soil testing laboratories
		SAC 324 Crops And Pesticide Chemistry and Nanotechnology	Determination of reducing and non-reducing sugars in jaggery. Estimation of total solids, ascorbic acid, titratable acidity in fruits Analysis of pesticides Estimation of pesticide residues in soil Pesticide Testing Laboratory and Nanotechnology Laboratory
		SAC 421- Soil, Water and Plant Analysis	Collection and preparation of soil sample and analysis of soil nutrients availability Collection of irrigation water sample and analysis Tissue test, plant analysis - visual identification of nutrient deficiency symptoms Collection and preparation of plant sample, preparation of Di/Tri acid extract Analysis of plant sample for total their nutrient content and uptake
		SAC 422- Soil Constraints and Its Management for Sustainable Crop Productivity	Field diagnosis (visual) and Laboratory diagnosis (Soil analysis) Assessment of soil physical health - LOIC, STORIE index, productivity rating index Methods of reclamation measures of problem soils Integrated soil fertility management for higher crop productivity, SSNM, decision support system. Assessment of irrigation water quality- its profitable use.
10	Division of Animal Husbandry	AHS -201 Livestock Management	Restraint and handling of Dairy Cattle Identification of Different Breeds Deworming ,Ageing and Vaccination in cattle Selection of Dairy Cattle Identification of Feeds and Fodders
		AHS - 202 Poultry and	Handling of Broilers and Layers

		Fisheries Management	Deworming ,Debeaking and Vaccination in Broilers and Layers Identification of Feeds and Feed ingredients Slaughtering and Processing of chicken meat Processing of Fish Meal and its inclusion level in poultry
		ECAHS - 301Caprine and Ovine Management	Restraint and handling of Sheep and Goat Identification of Different Breeds Deworming ,Ageing and Vaccination in Sheep and Goat Castration and demonstration of Artificial Insemination in Does Identification of Feeds and Fodders
		ELAHS- 401- Poultry Products Technology	Slaughtering and Processing of chicken meat Dressing percentage Value addition of Chicken Meat Value addition of egg Grading of Eggs
		RAWE Component 1- Animal Production interventions	Scientific feeding of Dairy Cattle Vaccination and Deworming Production enhancement Dry cow Therapy

#### 6.4.6. Supervision of students in PG and Ph.D. programmes

Not applicable

#### 6.4.7. Feedback of stakeholders (students, parents, industries, employers, farmers, etc.)

The IQAC conducts Stakeholders feedback survey every year with the following objectives,

1. To quantify the level of satisfaction experienced by students regarding the curricular and other aspects during their course of learning in the University
2. To measure the level of satisfaction acquired by the alumni with regard to general and curricular aspects of the University
3. To obtain the views of Teachers on syllabus review and redesign
4. To identify the pit falls and bottle necks in the process of facilitating teaching- learning process
5. To address the problems and the gaps identified in academic process improvement
6. To derive strategies for quality enhancement
7. To set new goals for future and lifelong learning

The survey process is done by uploading the structured questionnaires specifically designed for its alumni, students, and teachers in the following aspects:

1. Alumni feedback on curricular aspects
2. Alumni feedback on general aspects
3. Student feedback on curricular aspects
4. Teacher feedback on curricular aspects

The students are sensitized about the importance of the survey and its objectives through their class coordinators and mentors. Emphasis is given to offer fair and actual opinions by the respondents without any personal bias and hesitation. The feedback is analysed and survey reports are prepared for submission to the Authorities of the University for Further Action. Based on the

feedback necessary improvements are being carried out in the ensuing academic year. Representatives of industries, employers, and other stakeholders who are nominated to serve in various academic bodies, board of studies provide their input for fine turning the curriculum and offer valuable suggestions for student centric education to improve overall quality of teaching and learning.

In addition to this, informal feedback is obtained from our alumni when they visit campus during reunion meet. Informal feedback is being obtained from all stakeholders like farmers, industries, NGOs during exposure visits, RAWE, trainings, etc. Action taken report is also regularly submitted to the authorities.

#### 6.4.8. Student intake and attrition in the programme for last five years

Year-wise information on sanctioned strength, actual intake and attrition in the last five years of the degree programme is given below.

Programmes	Year									
	2017-18		2018-19		2019-20		2020-21*		2021-22*	
	Intake	Attrition (%)	Intake	Attrition (%)	Intake	Attrition (%)	Intake	Attrition (%)	Intake	Attrition (%)
<b>Under graduate programmes</b>										
B. Sc. (Agri.)/ B.Sc. (Hons) Agriculture	1081	16%	1121	1.43%	1086	4.23%	600	8.5%	600	4.70%

**\*AS per ICAR Recommendation Admission restricted to 600**

Sl. No.	Year	Male	Female	Students admitted	Sanctioned strength
1	2017-18	409	499	908	1200*
2	2018-19	556	549	1105	1200*
3	2019-20	511	575	1086	1200*
4	2020-21	262	292	554	600**
5	2021-22	244	331	575	600**

**\* As per the approval of the Government (Before Accreditation)**

**\*\* As per the approval of ICAR (After Accreditation)**

#### 6.4.9. ICT Application in Curricula Delivery

Annamalai University has a state of the art IT facility, a jewel in the crown of its overall infrastructure, including campus-wide intranet connection with an exclusive 1 GBPS bandwidth internet leased line.

Among the theory class rooms, out of 26 classrooms, 20 classrooms in the faculty are ICT enabled with LCD projectors. In addition, all the departments has additional ICT enabled UG laboratories with LCD projectors/Interactive boards/ Smart TVs/Electronic podium etc.

##### ICT tools:

- Various state of the art, subject specific, ICT software, most of which are in-house developed, such as the following are in use:
- **ENVIS database** to access information on estuaries, mangroves, coral reefs and lagoons and other

- marine resources
- **3-D Montage software** for real time image capturing of minute insect structures and specimens
- Online resources like virtual labs and video contents are integrated as learning material
- Workplace Management Systems like Google Classroom, Zoom meeting, Go to meeting, Edmodo,
- Microsoft Karizala to deliver contents and review assignments
- Social media network groups for real time reporting, attendance and on site work progress for monitoring Hands-on training, Industrial visit, Rural Agricultural Work experience
- University website hosts online tutorial classes
- Exclusive Microsoft Teams ID for all the teachers and students have been created
- Specific virtual platforms created to handle and monitor online classes in defined schedules

#### **Online and ICT Learning Resources**

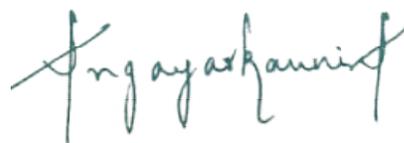
- 24 x 7 remote access of University library resources through “Myloft” app
- Integration of the department and faculty libraries with the central library to facilitate remote access to resources in all the libraries from one point
- Web link for remote login for various resources including J-GATE, ProQuest database for e-journal and books and Central Library are provided in university website
- Online resources like e-journals, e-books, Online databases, Statistical software, Mobile apps, CDROM,
- You tube videos, Carnatic.com, kutcheri buzz for delivering teaching material
- Link to e-learning resources like SWAYAM portal, e-PG Pathshala, etc., along with details of university level coordinators provided in the University website to facilitate easy enrolment of students
- E-content resources for the students are made available in the Student Portal under the header “Learning Resources.”
- INFONET lab to facilitate the students to broaden and strengthen their knowledge

**6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.**

**6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.**

**6.4.12. Certificate (Applicable when SSR is submitted for Programme)**

I **A. Angayarkanni**, the Dean Faculty of Agriculture, Annamalai University hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

**Signature of Dean of the College with Date & Seal**

**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)

**FACULTY OF AGRICULTURE**

**SELF STUDY REPORT OF THE**

**B.SC. (HONS.) HORTICULTURE**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## 6.4. Self Study Report for the Programme

### Undergraduate Degree Programme

#### B.Sc. (Hons.) Horticulture

**Name of the programme and year of start: B.Sc.(Hons.) Horticulture-** (Nomenclature changed as per ICAR V<sup>th</sup> Dean's committee w.e.f. 2017-18)

**Year of start: 1995**

#### 6.4.1. Brief History of the Degree Programme

Considering the importance of fruits, vegetables, flowers, plantation and spice crops in providing nutritional security and economic stability, a paradigm shift in focus was given to horticultural crops with planned government support. In addition to the governmental support to Horticulture, opening of global trade has attracted many to diversify their activities with horticultural crops. A sudden shift created a huge demand of technocrats to help in the development of horticultural industry in India. Being a pioneer in the introduction of a post graduate programme in Horticulture in the South India, Annamalai University came forward to permit a full fledged four year undergraduate programme "B.Sc.(Hort.)" under Faculty of Agriculture during 1995-96. In the first batch only 30 students were admitted.

The genesis of Faculty of Agriculture is depicted chronologically here under.

1951	Department of Agriculture in the Faculty of Science was established. Agriculture as one of the two optional subjects for B.A. or B.Sc. degree. Establishment of Experimental Farm with the available wet lands.
1953	Agriculture was introduced for the Intermediate course as one of the three optional in the Science group in the place of Physics.
1958	Establishment of Division of Horticulture and First PG Programme in Horticulture was introduced.
1991	Upgraded as Department and Post graduate Programme M.Sc.(Ag.) Horticulture was started.
1995	First batch of B.Sc. (Horticulture) was started.
2018	B.Sc. (Hons.) Horticulture -Nomenclature changed.

#### Vision and Mission

The vision of the Faculty is to play an active role in sustainable horticultural development of the country.

The mission of the Faculty is to forge ahead in teaching, research and extension services in horticulture and to serve as a centre for academic excellence. In order to realize this mission, it has the mandate to play a pivotal role in capacity building, technology development and dissemination.

#### Teaching

For an agrarian country like India, strong and efficient manpower is needed to develop and disseminate newer horticultural technologies. Considering this, Faculty of Agriculture has tailored a broad based curriculum to impart required knowledge, skills and attitude at UG, PG and Ph.D. levels. Utmost care is taken to provide good learning activities through qualified staff and rich

practical training. Being a part of the residential university, the experts from other allied faculties are also utilized to expand the horizon of learning.

The faculty has 237 well qualified agricultural staff to offer the core subjects to UG, PG and Ph.D. students. To teach allied subjects such as language, statistics, computer science, physical education, yoga, agricultural engineering, agribusiness, etc., 59 of the teaching staff and the infrastructure facilities available in the concern department of study from other faculties in the campus are utilized. With the vision of providing quality education, the institute has lecture halls with audio visual aids, library, computer centre and UG and PG laboratories with latest equipments for conducting practical classes. Apart from the classroom learning, the students receive hands-on experiences and exposures through the programmes like RAWE, experiential learning, project work, crop production and study tour. The syllabi for B.Sc. (Hons.) Horticulture programme is revised time to time as per the recommendations of ICAR Dean's Committees. The present curriculum adopted from the academic year 2021-2022 was revised as per the BSMA and fifth Dean's committee recommendations.

### B.Sc. (Hons.) Horticulture Credit Structure

S. No.	Title	Credit
1	Core Courses	142
3	RAWE & ELP	40
	<b>Total</b>	<b>182</b>

### Discipline-wise Summary of Credit

S.No.	Discipline	Credit
1	Horticulture	59 (35+24)
2	Agronomy	10 (5+5)
3	Genetics & Plant Breeding	11 (7+4)
4	Soil Science & Agricultural Chemistry	6 (3+3)
5	Entomology	12 (8+4)
6	Plant pathology	11 (7+4)
7	Agricultural Microbiology	7 (4+3)
8	Agricultural Economics	7 (5+2)
9	Agricultural Extension	4 (2+2)
10	Engineering	2 (1+1)
11	Plant Biochemistry and Bio technology	2 (1+1)
12	Statistics	2 (1+1)
13	Computer Science	2 (1+1)
14	English	2 (1+1)
15	NSS/NCC/Physical Education & Yoga Practices	2 (0+2)
16	Educational Tour	2 (0+2)
17	Tamil / Agricultural Heritage	1 (1+0)
18	Bridge Courses	
	<b>Total</b>	<b>142</b>
19	RHWE & ELP	40
	<b>Total</b>	<b>182</b>

### Bridge courses

Bridge courses in biology and mathematics will be conducted for those candidates who have not undergone the respective courses during their higher secondary programme. These courses will be offered for 8 weeks @ 2 hours/week from the date of commencement of the programme.

Sl. No.	Semester	Course code	Title	Credit
1.	I	MAT 001*	Elementary Mathematics (Contact Hours 2)	-
2.	I	GPB 002*	Introductory Biology ( Contact Hours 2)	-

### Non Gradual Compulsory Courses

Sl. No.	Semester	Course code	Title	Credit
1	I, II	PEY 111	Physical Education & Yoga	1(0+1)
2	I, II, III, IV	NSS 111/ NCC 111	NSS/NCC	1(0+1)
3	I	TAM 111/ EXT 111	Tamil / Agricultural Heritage (Agri. Extension)	1(0+1)
4	II	EXT 112	Human Values & Ethics (Agri. Extension Education)	1(1+0)
5	IV	HOR 211	Educational Tour I (Horticulture)	1(0+1)
6	VIII	EXT 411	Educational Tour II (Agri. Extension)	1(0+1)
			<b>Total</b>	6(1+5)

### Research

In order to meet emerging challenges of farming community in the nearby district, need based location specific research work is given priority. The entire staff members are involved in research as well as teaching. All the departments have 'in-house' as well as 'external funded' research programmes. The research programmes are regularly monitored and improved by Research Advisory Committee, Director of Research and funding agencies. The major areas of research consists of crop improvement, crop production, crop protection, identifying new varieties of vegetables, fruits and flower, forestry, medicinal and aromatic plants, and land and water management in problematic areas.

The institute is involved in dedicated research in all frontier areas of horticulture. Research studies are carried out to develop new varieties, crop production, crop protection practices and allied socioeconomic aspects concerned with field and horticultural crops. The faculty of agriculture is actively participating in the Research funded by World Bank, ICAR, DST, DBT, NMPB, MNEF, UGC, ICSSR, and private funding agencies. The prestigious **National Agricultural innovation project funded by ICAR** and World Bank to the tune of Rs 9.45 crores have substantially raised the livelihoods of 2400 farming households in four disadvantaged districts of Tamil Nadu, viz., Cuddalore, Nagapattinam, Villupuram, and Thiruvannamalai. The **Annamalai Rice+Fish+Poultry Farming system** developed in this project was adjudged as the best among 36 Sustainable Rural Livelihood projects implemented across the country by ICAR. **"SIGAPPI" (CR1009-SUB1) - a climate resilient submergence-tolerant rice variety** developed by the Faculty of Agriculture, Annamalai University in collaboration with IRRI, Philippines, has significantly helped the farmers combat with the recurrent devastating floods in the region. The Faculty of Agriculture has research collaboration with Cornell University, International Rice Research Institute (IRRI), Philippines, *BIRAC, DBT, ICAR, Bill & Melinda Gates Foundation, US-Aid*, International Institute of Biotechnology and Toxicology, Chennai, IKP Knowledge Park (IKP), and Commercial Agriculture Alliance (CAA), Nepal. These collaborations helped the innovations of the faculty outreach across the borders and languages.

## Research Collaborations in faculty of Agriculture

Collaborating Institutes	Nature of Collaboration	Year
Biotechnology Industry Research Assistance Council, , New Delhi DBT& Bill & Melinda Gates Foundation DBT, New Delhi	Grand Challenges India –Agricultural Nutrition Participatory Field Experiments &ToT in Rice+Fish+Poultry Farming for Nutritional and Livelihood	2014
International Rice Research Institute, Manila, Philippines	Evolving Submergence Tolerant Rice	2015
HatsunAgro Products Ltd, Chennai	Training Programme in Tamil on “Basics of Dairy Cattle Management and Artificial Insemination” for the Village Level Inseminators of HatsunAgro	2017
IKP Knowledge Park (IKP), Genome Valley, Hyderabad Commercial Agriculture Alliance (CAA), Nepal	Participatory Field Experiments &ToT in Annamalai Rice+Fish+Poultry Farming for Nutritional and Livelihood Enhancement in 75 Farmers Holding of Nepal	2017
International Institute of Biotechnology and Toxicology (IIBAT), Chennai	Participatory Field Experiments &ToT on Agronomic Integration of Technologies for Productivity Management and Optimal Water Use in Wetlands of Cauvery River Delta in 100 Farmers Holdings of Tanjore, Thiruvaroor, Nagapattinam and Cuddalore Districts of Tamil Nadu	2018
College of Agriculture & Life Sciences, Cornell University, USA	Collaborative Research on Climate Resilience Farming System Designs and Invasive Alien Weeds	2019
Tamil Nadu Council of Science and Technology	Research Project	2019
International Rice Research Institute, Manila, Philippines	Research, Training and Extension Services	2022

## Research Projects, Consultancy Services and Product Evaluation Trials

Apart from these collaborations the Faculty of Agriculture has carried out Government and Non-govt. research projects, research consultancy services and product evaluation trials for private companies. Between 2017 and 2022 the faculty of Agriculture has carried out 338 number of Govt. and Non-Govt. projects worth Rs. 1987.64 Lakh.

Name of the Department	No. of Projects	Amount in Lakh Rs.
Agronomy	63	387.87
Horticulture	9	24.97
Genetics and Plant Breeding	3	1.92
Agricultural Extension	1	72.50
Agricultural Economics	6	34.45
Entomology	141	890.07
Plant Pathology	99	490.87
Agricultural Microbiology	9	69.06
Soil Science&Agricultural Chemistry	7	15.93
<b>Total</b>	<b>338</b>	<b>1987.64</b>

## Extension

Annamalai University is set in a rural environ very close to the eastern coast, amidst three most disadvantaged districts of Tamil Nadu where the majority of the population is socio-

economically marginalized. Since it is not an industrial region, the lives of the people in the region is highly precarious and uncertain where the struggle is often to make both ends meet. Less productive coastal lands, vagaries of monsoon, sea water intrusion, proneness to and frequent occurrence of natural disasters (like floods, cyclones, etc.) and low literacy rate render the lives of these people highly precarious. Though the University has played a significant role in improving the overall socio-economic condition of the region through its educational service, it wanted to address this singular issue that poses challenge to the farming community.

The Faculty of Agriculture plays a leading role in extension of tested technologies. The **submergence-tolerant quality of SIGAPPI** rice variety has become popular both at national and international levels. Farmers of Kerala, especially in the flood-prone districts, prefer this rice variety and it is grown in 1000+ha there. Nearly 2500 farming households in 36 villages have been benefitted by **Integrated Rice + Fish + Poultry Farming** method. The positive impact created by the method in local villages made it become national as it derived nationwide attention through “**Hunnarbaaz episodes**” telecasted by Doordarshan. Ultimately it gained international status and it has been adopted by the **Government of Nepal** and replicated successfully.

**The Centre for Natural Farming and Sustainable Agriculture (CNFSA)** has Organized the Gram Pradhans online Awareness Training Programme on “Natural Farming” for 4 Districts in Tamil Nadu viz., Cuddalore, Tiruvarur, Mayiladuthurai and Tanjore in Collaboration with MANAGE, Hyderabad and Ministry of Agriculture and Farmers Welfare, GOI. In an effort to reach the unreached, the Faculty of Agriculture in partnership with the state department of Agriculture organizes, farmers-scientist meet, conduct workshops, conduct capacity building programmes for farm women and self-help groups. The Faculty of Agriculture, over the past 60 years, had responded most dynamically to the needs, challenges and opportunities of Indian horticulture and adjusted its mandate, plans and programmes accordingly to deliver horticulture technologies and human resource for meeting the demands of the Nation. Transfer of latest technologies in horticulture, dairy, and allied fields. Hands-on trainings on mushroom production, kitchen gardening, vermicompost production, roof gardening, Medicinal plant cultivation and protected cultivation to the unemployed youth, farmers and Self-Help Groups are conducted throughout the year.

The staff members of the Agricultural Extension have well established contacts with farming community in and around the surrounding of Cuddalore district through RAWE programme. They also have well established link with the various stakeholders like State Department of Agriculture, Panchayat Raj Institutions, KVK, Regional Research Stations and NGO's. During RAWE programme, the staff members facilitated the students to organize and conduct various commendable extension activities like meeting, demonstrations, campaigns and exhibitions in the villages.

Due to Covid 19 lockdown the staff members of the department rendered online farm advisory services to the farmers in and around Cuddalore district, by sharing information to their whatsapp. Whatsapp group was also started in the name of AU Extension Farmers Group. A total number of 208 farmers joined this link. Extension scientists, TNAU KVK Scientists and State Agriculture Department Officials have also joined as members of this group and shared useful farm information through text, voice messages and videos.

A You Tube channel **AU Agri Extension 360'** has been initiated. So far 19 videos have been uploaded on various agricultural technologies.

<https://youtube.com/channel/UCPINaWNVVEAT25B-mArNXVw>

Link: <https://youtu.be/Z2uK-o0dQKs>

Link: <https://chat.whatsapp.com/FBIv9Mvo0y6G6HFPSkObmr>

### Farmers Agricultural Technology Information Cell (FATIC)

Considering the information needs of the farming community, a separate cell FATIC (Farmers Agricultural Technology Information Cell) was initiated on 14.02.2022 with the following objectives:

1. To satisfy the information needs of farming community
2. To clarify doubts and offer solutions in Agriculture and Animal Husbandry areas.
3. To organize demonstrations and trainings to farmers, Self Help Group members, Farmers producer Organizations, Extension Professionals and Researchers.
4. To disseminate new and latest farm technologies and also to organize awareness campaigns about welfare programmes of central and state governments.

### Farmers Agricultural Technology Information Cell



### Agriculture Museum

The museum exhibits genesis of Faculty of Agriculture over the past decades. The museum displays various blocks representing technologies used in the farming. The museum houses different models containing evolution of agriculture models, automatic weather station, models of agricultural implements models of soil profile, traditional storage of seeds. The models of termite colony and models of glass house & poly house used for growing of vegetables under controlled conditions, models for crop training and food security, models for rearing of honeybees and silkworm rearing also models of animal husbandry, models being displayed and other useful information being displayed about the diseases, pest, cultivation practices etc., along with various activities carried out by various departments, and various information of all the agriculture departments are displayed.

The faculty of Agriculture organizes farmers day to introduce new horticultural technologies and innovations to the farming community. On the occasion of farmers day, meetings and demonstrations are also organized to enhance knowledge and skill among the farmers, farm women and rural youth. To enhance capacity building, EDP vocational skill-oriented training programmes are also organized by the department of agricultural extension.

## 6.4.2 Faculty Strength

The Faculty of Agriculture has sufficient number of teaching staff with core agricultural background. At present, 237 core academic faculties are in position in this faculty. Among them, 120 are Assistant Professors, 68 are Associate Professors and 49 are Professors. Apart from this, 59 teaching staff for allied subjects like Agricultural engineering, Basic Science and Humanities (Statistics, Business management, English, Tamil, and Computer Science), physical education and yoga are drafted from the respective Departments from the Faculty of Engineering, Arts, Science, Indian languages and Education of the University. Every teaching staff in the Faculty is directly involved in teaching, research, and extension. Further, they are multi-programme teachers.

### Faculty strength in the Faculty of Agriculture

S. No.	Sanctioned Faculty	Faculty in Place	Vacant Position	Faculty recommended by ICAR
1	Professor	49*	-	3
2	Associate Professor	68	-	8
3	Assistant Professor	120	-	34

\*4 Professors retired from services as on 30.06.2022

### Faculties deputed from other Departments in the University for teaching allied courses

S. No.	Sanctioned Faculty	Faculty in Place	Vacant Position
1	Professor	8	-
2	Associate Professor	32	-
3	Assistant Professor	18	-
4	Yoga Instructor	1	-

The department-wise teaching staff strength is furnished below

Details of the Departments of Study	Faculty in Place				Vacant Position				Faculty recommended by ICAR			
	Professors	Associate professors	Asst. professors	Total	Professors	Associate professors	Asst. professors	Total	Professors	Associate professors	Asst. professors	Total
Agronomy	6	12	21	38	-	-	-	-	1	1	4+1	7
Horticulture	6	5	24	35	-	-	-	-	1	1	2+1	5
Genetics and Plant Breeding	10	10	12	31	-	-	-	-	1	1	2+1	5
Agri.Extension	4	9	11	23	-	-	-	-	0	1	1+1*	3
Agri.Economics	5	5	3	13	-	-	-	-	0	1	2+1*	4
Entomology	3	6	11	19	-	-	-	-	0	1	2	3
Plant Pathology	3	6	13	22	-	-	-	-	0	1	2	3
Agri.Microbiology	5	9	10	24	-	-	-	-	-	-	1	1
Soil Sci & Agri.Chemistry	6	4	9	19	-	-	-	-	0	1	2+3*	6
Animal Husbandry	1	1	4	6	-	-	-	-	0	0	2+1	3
<b>Sub-Total (Agriculture)</b>	<b>49*</b>	<b>67</b>	<b>118</b>	<b>237</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>8</b>	<b>19+8</b>	<b>40</b>

\*-4 Professors retired from services as on 30.06.2022

### Faculties from other Departments of the University for allied courses

Agri. Engineering	2	22		24	-	-	-	-	0	0	2	2
Statistics	6	2		8	-	-	-	-	0	0	1	1
English			13	13	-	-	-	-	0	0	1	1
Tamil		7	3	10	-	-	-	-	-	-	-	-

Yoga studies (instructor)			1	1	-	-	-	-	-	-	-	
Computer Science			2	2	-	-	-	-	-	-	1	1
Physical Education		1		1	-	-	-	-	-	-	-	-
<b>Sub-Total (Other Departments)</b>	<b>8</b>	<b>32</b>	<b>19</b>	<b>59</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>
<b>Grand Total</b>	<b>57</b>	<b>99</b>	<b>137</b>	<b>296</b>					<b>3</b>	<b>8</b>	<b>32</b>	<b>45</b>

#### 6.4.3. Technical and Supporting Staff

A total of 79 Supporting staff, 67 Technical staff and 288 field staff are positioned to support various activities of different departments. The details of administrative, technical, and supporting staff in the faculty are given below.

Department	Number of Staff			
	Supporting staff	Technical staff	Field staff (Farm workers/ Gardeners)	Total
Deans office	11	23	65	99
<b>Departments</b>				
Agronomy	2	13	77	92
Agricultural Economics	1	0	2	3
Agricultural Extension	1	0	2	3
Agricultural Microbiology	3	4	5	12
Entomology	2	2	7	11
Genetics & Plant Breeding	3	4	3	10
Horticulture	3	4	41	48
Plant Pathology	1	2	5	8
Soil Science & Agrl. Chem.	1	5	7	13
Animal Husbandry	1	2	15	18
<b>Administrative Sections</b>				
Establishment (Personnel Dept)	4	0	2	6
Hostels	31	5	53	89
Examinations	8	3	2	13
Directorate of Academic Research (DARE)	1	0	0	1
Directorate of Research (DRD)	1	0	0	1
B Section	1	0	0	1
D1 section(Accounts)	1	0	1	2
E Section	1	0	0	1
H section (Scholarships)	1	0	0	1
Directorate of Admissions	1	0	1	2
	0	0	0	0
<b>Total</b>	<b>79</b>	<b>67</b>	<b>288</b>	<b>427</b>
			<b>Grand Total</b>	<b>427</b>

\* Excluding the supporting staff of central library, sports pavilion, yoga centre and other centralized services.

The technical and supporting staffs help in the delivery of content and facilitate transfer of knowledge. Sufficient Field staffs are available to maintain the laboratories, demonstration farms, crop museums, insectary, meteorological observatory, dairy, poultry, vegetable unit, floriculture unit, garden, post harvest laboratory, sewage farm, breeding farm and pot culture yards.

Further the supporting staffs play a key role in monitoring the attendance, maintenance of database, scheduling of classes, preparation of academic calendar, practical schedule, allotment of halls, vehicles and maintain records of scholarship etc. Qualified persons like Farm Superintendents, Garden superintendents, Orchard Manager and Deputy Garden/farm superintendents are appointed with technical qualifications to support and monitor the farm operations.

The technical and supporting staff of Department of Horticulture manages orchard, vegetable area and floriculture and medicinal plants unit. The model demonstrative dairy and poultry unit utilize the farm workers in milk production and poultry production under the guidance of veterinary doctors. Gardeners are engaged in establishment and maintenance of various garden units in the campus. They are also engaged in nursery activities, interior decoration, and help in conduct of field practical. In other departments, the services of supporting staff are used to conduct laboratory practical and pot culture yard.

#### 6.4.4. Classrooms and Laboratories

Sufficient lecture halls are available in the campus. Apart from 10 lecture halls available in the faculty premises, an exclusive block with 16 spacious halls spread over in two floors at Kumara Raja Muthiah Building is dedicated for teaching theory only. Each class room is sufficient to accommodate about 100 - 120 students. For theoretical teaching, the registered students are divided into batches. The theory batch consists of 60 students and practical batch consists of 30 students. The faculty has adequate laboratories and field facilities to offer practical exposure. The farm unit including field, orchard and gardens are used for field based practical demonstrations and crop production. The engineering departments provide practical exposure on survey, hydraulics', farm machinery and post-harvest. A well-developed sports complex available in the university campus is utilized for physical education course. The yoga classes are held at the yoga centre of our university which has facility for mass meditation and yoga practices.

Sufficient lecture halls are available in the campus. Apart from 10 lecture halls available in the faculty premises, an exclusive block with 16 spacious halls spread over in two floors at Kumara Raja Muthiah Building is dedicated for teaching theory only. Each class room is sufficient to accommodate about 100 - 120 students. For theoretical teaching, the registered students are divided into batches. The theory batch consists of 60 students and practical batch consists of 30 students. The faculty has adequate laboratories and field facilities to offer practical exposure. The farm unit including field, orchard and gardens are used for field based practical demonstrations and crop production. The engineering departments provide practical exposure on survey, hydraulics', farm machinery and post-harvest. A well-developed sports complex available in the university campus is utilized for physical education course. The yoga classes are held at the yoga centre of our university which has facility for mass meditation and yoga practices.

#### Class Rooms - Smart Theory Halls

Sl. No.	Place	Name of the Hall	Dimension
1	Faculty of Agriculture	New Lecture Hall -1	35'x24'
2	Faculty of Agriculture	New Lecture Hall -2	35'x24'
3	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 3	39'x29'
4	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 4	29'x40'
5	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 5	29'x30'
6	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 6	39'x29'
7	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 7	29'x40'
8	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 8	39'x29'
9	Faculty of Agriculture	M.A.M. Ramasamy Block- Hall 9	29'x29'
10	Faculty of Agriculture	M.A.M. Ramasamy Block-Hall 10	42'x29'
11	Tech Park Building	Hall 1	39'x29'
12	Tech Park Building	Hall 2	39'x29'
13	Tech Park Building	Hall 3	39'x29'
14	Tech Park Building	Hall 4	39'x29'
15	Tech Park Building	Hall 5	39'x29'
16	Tech Park Building	Hall 6	39'x29'

17	Tech Park Building	Hall 7	39'x29'
18	Tech Park Building	Hall 8	39'x29'
19	Tech Park Building	Hall 9	29'x28'
20	Tech Park Building	Hall 10	29'x28'
21	Tech Park Building	Hall 11	29'x28'
22	Tech Park Building	Hall 12	29'x28'
23	Tech Park Building	Hall 13	29'x28'
24	Tech Park Building	Hall 14	29'x28'
25	Tech Park Building	Hall 15	29'x28'
26	Tech Park Building	Hall 16	29'x28'

### Laboratories and other facilities for Practical and Hands on training (UG) - Department wise

All the laboratories have sufficient space, infrastructural facilities and consumables. There are farm land, orchards, poly-houses, shade-net house, apiary, sericulture unit, insectary, bio-pesticide production unit, pot culture yard, mushroom shed, glass house and dairy unit. The details of instruments available in various departments are summarized below.

Details	ICAR Requirement		Available		
	No. of Rooms	Dimensions (in ft.)	Department	No. of Rooms	Dimensions (in ft.)
Laboratories (UG)	12	30 x 60 Larger department will have two	Agronomy	11	19' X 18' 30' X 20' 30' X 20' 18' X 14' 34' X 19'-4 nos 40' X 30' 18' X 15' 21' X 18'
			Agricultural Economics	1	39' X 29'
			Agricultural Extension	1	30' X 42'
			Agricultural Microbiology	2	19' X 49'-1 20' X 30'-1
			Entomology	2	38' X 30' 37' X 31'
			Genetics & Plant Breeding	3	30' X 36' 30' X 21' 30' X 21'
			Horticulture	4	40' X 30' 34' X 19'-3nos
			Plant Pathology	3	42' X 25' 36' X 25' 42' X 30'
			Soil Science and Agricultural Chemistry	4	19' X 33' 31' X 67' 30' X 29' 38' X 24'
			Animal Husbandary (Division)	2	30' X 22' 47' X 28'

## 1. Agronomy + (Agroforestry)

S. No.	Facilities	ICAR Requirement	Available
1	Crop cafeteria	½ acre land, Small implements like spade, hoe, khurpi, darati, etc.	½ ac land, 404 implements
2	Museum for identificatiino of seeds, fertilizer, weeds, commonly used agro- chemical and medicinal and aromatic plants etc.	Storage bottle, Herbarium posting material	206 storagebottles 120 herbarium
3	Field of sowing method, fertilizer application, irrigation and soil productivity and yield estimation	Small equipment / implement	Seed dressing drum-2 Manual seed drill, fertigation unit-2, Tensiometer- 3
4	Irrigation water measurement, bulk density etc.	-	Irrigation measurement device
5	Vermicompost unit	-	Production of 300 Kgs of vermicompost / 3 months
6	Biogas Unit	-	60 Cu. m.Capacity
7	Poly house	-	300 Sq. ft
8	Wet Land	-	137.35 ac
9	Wet Land at Thiruvadaimaruthur & Keelmathur	-	117 ac
10	Garden land	-	38.25 ac
11	Grass farm	-	9.32 ac
	<b>Equipment</b>		
1.	Moisture box	30	60
2.	Moisture meter	5	5
3.	Tube Auger	10	20
4.	Bucket Auger	10	20
5.	Weighing Banalce	1	2
6.	Seed Germinator	2	2
7.	Conductivity Meter	1	2
8.	pH meter	2	4
9.	Water Bath	1	2
10.	Shaker	1	1
11.	Chlorophyl Meter	1	1
12.	Drip and Sprinkler System	3	5
13.	Sprayer	3	10
14.	Spring Balance 50 Kg	5	5
15.	Spring Balance 10 Kg	5	5
16.	Top Pan Balance 1 Kg capacity	5	5
17.	Top Pan Balance 2 Kg capacity	5	5
18.	Meter scale	10	20
19.	Tape	5	10

20.	Brix Meter	2	4
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### Other Major Equipment Available

Tissue analyzer (1), Plant growth chamber(1), Laser guided land leveler(1), Combined harvester(1), Paddy transplanter (1), Micro-kjeldahl (3), Macro-kjeldahl (3), Soxhlet apparatus (1), Automaticnitrogen/ Proteinestimationsystem (1), Centrifuge (1), pHmeter (1),ECmeter (1),Atomic Adsorption Spectrophotometer (1),

Maximum and minimum thermometer (3), Wet and dry thermometer (2), Soil thermometer (3), Grass minimum thermometer (1), Whirling psychrometer (1), Dew Gauge (1), USWB open pan evaporimeter (1), Hygrometer (1), Thermo hygrograph (1), Sunshine recorder (1), Wind vane (1), Anemometer and Model observatory (1).

### 2. Agricultural Economics + (Basic Economics, Maths & Computer Science and Statistics)

S. No.	Facilities	ICAR Requirement	Available
1	Computers	15	30+4
2	Camera	1	2
3	Software	As per requirement	SPSS, STRATA, R-Programming and E-views

### 3. Agriculture Extension & Communiation + (Sociology and Psychology, English) Audio-visual Lab.

S. No.	Facilities	ICAR Requirement	Available
1.	LCD Projector	1	5
2.	Camers (SLR) with zoom, wide angle, tele-photo lens	1	2
3.	Video camers with tripod, lighting accessories and editing facility	1	2
4.	Computers (work station) with editing softwares	1	2
5.	Digital voice recorders	5	7
6.	Audio recording-mixing consoles	1	2
7.	Computation softwares for Statistics	1	2

### 4. Entomology

S. No.	Facilities	ICAR Requirement	Available
1.	Binocular Microscope	20	30
2.	Insect Box	60	1214
3.	Insect Collection Nets	60	150
4.	Collection Bottles	60	150
5.	Insect Collection Big Boxes for Museum (1 for each order)	29	9 big boxes 110 museum boxes
6.	Insecticides for showing students/ Representative for each group	As per requirement	100 containers
7.	Stereomicroscope	1	10
8.	Electronic Balance	1	4
9.	Soxhlet Extraction Apparatus	1	15 set
10.	Bee keeping equipment	1 set	87 set
11.	Oven	1	3
12.	Potters Tower	1	1

13.	Sprayers	1 of each type	3 in all types
14.	Light traps	1 set	5 set
15.	Fumigation chamber	1	3
16.	Slides / cover slipe	As per requirements	25 boxes each
17.	pH meter	1	5
18.	Computer with printer	1 set	4 set
19.	Apiculture Laboratory	-	1
20.	Pot culture yard	-	7
21.	Apiary	-	3
22.	Silkworm rearing units	-	3
23.	Sericulture Laboratory	-	1
24.	Skill Laboratory	-	1
25.	Insect Museum	-	1

### Other Equipments Available

Trinocular stereo zoom with Montage software for capturing 3D image (1), Phase contrast trinocular stereo zoom microscope (3), Multiple gel casting unit (1), Submarine and vertical slab gel electrophoresis unit and power pack (1), Olfactometer (1), Volatile Collection Chamber and insect rearing cages (1), Micro applicator(1), Rotary flash vacuum evaporator (1), Leaf area meter (1), BOD Incubator (4), Double beam and single beam Spectrophotometers (1), Blender (1), Deep Freezer (1), Microtome (1), Rotary Shaker (1), Insect Suction Sampler (1), Refrigerated Centrifuge (1), Soxhlet extraction apparatus (10), Tissue homogenizer (1), pH meter(1), EC meter (1), Double distillation unit (2), Electronic weighing balance (2), Environmental test chamber (1), Hot air Oven (3), Low temperature water circulator (1), Laminar Flow Chamber (1), Trinocular stereo Zoom microscope (1), Dissection microscopes (15)

### 5. Genetics & Plant Breeding + (Seed Science & Technology)

S. No.	Facilities	ICAR Requirement	Available
1.	Microscope	10	46
2.	Binocular Microscope	10	10
3.	Electronic Moisture Meter	2	5
4.	Electronic Balance	2	4
5.	Seed Germinator	2	2
6.	Automatic seed / grain counter	1	1
7.	Cytology & Cytogenetic Lab.	-	27x 20'
8.	Seed Technology Lab. 2	-	15x7', 15x7'
9.	Molecular Lab.	-	30x12'
10.	Plant Tissue culture Laboratory	-	10x8'

### Biotechnology

S. No.	Facilities	ICAR Requirement	Available
1.	Hot Air Oven	1	1
2.	BOD Incubator	1	1
3.	Fluorescence microscope	1	1
4.	Centrifuge	1	3
5.	Growth Chamber	1	2
6.	Distillation Assembly	1	1
7.	PCR	-	3
8.	Gel Documentation	-	2

9.	pH meter	-	2
10.	Orbital Shaker	-	1

### Other Equipments Available

Monocular microscope (3), dissecting microscope(3), digital compound microscope (3), digital microscope (3), Binocular microscope with computer enabled, with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber), seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers, laminar air flow chamber, autoclave and incubator, mini thermocycler, electronic weighing balance, gel documentation chamber, BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-UV transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge, Agarose Gel electrophoresis with power pack, BOD incubator, Cyclo Mixer, Micro centrifuge, Orbital shaker, gel caster, Magnetic stirrer, Micro air oven, Spectrophotometer, BIORAD-30 wells, GENEI-gel rocker, Vacuum emasculator, ST 360 cyber ELISA, Water soil analysis kit and ELISA microplate washer.

### 6. Horticulture + (Food Science & Technology)

Name of the Instructional Unit	Dimension
Postharvest lab (UG)	40x30'
Orchard, OP Orchard, New area	63.07 ac
Shade house	60x30'
Nursery	0.5ac
Field Instruction Lab I	34x19'
Field Instruction Lab II	34x19'
Field Instruction Lab III	34x19'
Implement shed	20x12'
Threshing yard	5540 Sq.ft.
NVP house 1 (EXP. Learning)	35x12'
NVP house 2 (EXP. Learning)	35x12'
NVP house 3(EXP. Learning)	36x13'
Shade house	60x55'
Mist chamber (EXP. Learning)	15x10'
Poly house (EXP. Learning)	60x40'
Lake View garden, Shastri Hall garden, Statue garden, Tech Park garden, Medical College garden, Music College garden, Zoology garden, Education garden, Yoga garden, Guest house garden, Hospital Garden, Miyawaki garden, Oxygen Park, Entrance garden, Engineering garden, Agri garden	59.73 ac

#### a. Labs. (Post Harvest)

S. No.	Facilities	ICAR Requirement	Available
1.	Hand Refractometer	5	10
2.	Digital Refractometer	2	2

3.	Oven	1	2
4.	Refrigerator	1	3
5.	Electronic Weighing Balance	2	3
6.	Pan Balance (1 kg., & 10 kg. capacity each)	2	4
7.	Deep Freezer	1	1
8.	pH meter	1	4
9.	Fruit crusher	1	2
10.	Grinding and Mixing Machiine	1	2
11.	Distillation Assembly	1	2

#### b. Lab (UG Lab)

S. No.	Facilities	ICAR Requirement	Available
1.	Seed Germinator	2	2
2.	Grafting and Budding knife	60	150
3.	Secateur	60	150
4.	Saw	5	10
5.	Loppers	5	10
6.	Mist Chamber	1	1
7.	Poly house with drip irrigation system	2	2
8.	Microscope	2	2

#### Other Equipments Available

Electronic Automatic Kel Plus 20L, Electronic Superior Automatic Distillation System with Display, Centrifuge, Circulating Thermostatic water bath, Double distillation water still, Hot air oven, , Plant Canopy analyzer, Spectrophotometer. Available minor equipments PH Meter, Pocket Refractometer, Monocular microscope, Binocular Research Microscope, Trinocular Research Microscope, Dissecting microscope, Advanced student microscope, Digital Electrical conductivity meter, Hot Plate, Water bath, Digital PH meter, Electronic Weighing balance, Gel Documentation, Freeze Dryer, Deep Freezer, Automatic Microprocessor based 20 place Macro Block Nitrogen system, Automation Distillation System and Electronic Acid Neutralizer Scrubber, AM300 Portable Leaf Area Meter, Refrigerated Centrifuge, Automatic solvent extraction system, UV-VIS Spectro photometer, Chlorophyll content meter CCM 200, , Lux Meter, Laminar Air Flow Chamber, Refractometer, Dehydrator, Pulper, Humidity meter, Anemometer, Sachet Sealing Machine, Bottling and Packaging Machine, Research microscopes and Dissection microscopes, Infrared thermometer, refrigerator, Pan balance, grafting and budding knife, secature, hand saw, brush cutter, lawn mower, mechanical weeder, high pressure sprayers.

#### 7. Soil Science and Agricultural Chemistry + (Microbiology, Agro-meteorology, Environmental Sciences)

S. No.	Facilities	ICAR Requirement	Available
1.	Electronic Top pan balance (0.1 g capacity)	2	2
2.	Electronic Top pan Balance (1 mg capacity)	2	2
3.	Hot air oven	2	3
4.	pH meter	5	6
5.	EC Meter	5	6
6.	Flame photometer	1	1
7.	Visible spectrophotometer	2	5
8.	Hot plate	2	3
9.	Distilled water unit	1	3
10.	Water bath	2	4
11.	Rotary shaker	2	2
12.	Digestion block	2	2

13.	Hydrometer	5	5
14.	Infiltrometer	2	1
15.	Hydraulic conductivity meter	1	1
16.	Atterberg's limits meter	5	-
17.	Nitrogen Analyzer	2	1

### Other Equipment Available

CN Analyzer, Pressur Plate Apparatus, T-27 FTIR Spectrometer System Tensor -27, Soil Grinding machine (2), Rotary Shaker, Soil Hydrometer, Grain size analyser, Hydrometer, Muffle Furnace (2Nos), centrifuge, Green House Analyzer, Sonicator, Scanning Visible Spectrophotometer, PC based UV-VIS Spectrophotometer, pH meter (2 Nos), Ground Truth Radio meter with 4 filter, Chlorophyll meter – Spade 502 (1), Water analyser, Digital conductivity meter (3Nos), Nephelometer, Flame photometer (1), Euro –cleaner, GPS equipment (2 Nos), Atomic Absorption Spectrophotometer (1), EC Meter (1), Electronic weighing balance (5 Nos), Rectangular Sand Heating Plate (2 Nos), Soes Plus Refrigerated Water cooling System, Deep freezer, Automatic Nitrogen/Protein Estimation System, Willey mill (2 Nos), Centrifuge (1), Mono Quartz Distill, Muffle Furnace, Vacuum Pump, Water Bath - 12 Holes (4Nos), Hot Air Oven (255 x 455 x 455 mm), Hot Air Oven (605 x 605 x 605 mm), Hot Air Oven (605 x 455 x 910 mm), Horizontal Shaker, Nitrogen Distillation Apparatus set, Konica Minolta Copier machine, Kjeltac N analyser, Soxhlet apparatus, Laminar flow chamber, Aggregate analyser, Mantle, Double beam Spectrophotometer, Double Distillation Unit, Bremner apparatus, Micro kjeldahl unit, Centrifuge, Environmental test chamber, Li-COR methane analyser, Fuel gas Generator

### 8. Agricultural Microbiology

S. No.	Facilities	ICAR Requirement	Available
1.	Pot culture yard	-	50 sq.ft.
2.	Biofertilizer production unit	-	50 sq.ft.
3.	Glass House / Shade net	-	50 sq.ft.
4.	Electronic Top pan balance (0.1 g capacity)	2	2
5.	Electronic Top pan Balance (1 mg capacity)	2	1
6.	Hot air oven	2	7
7.	pH meter	5	5
8.	EC Meter	5	5
9.	Flame photometer	1	1
10.	Visible spectrophotometer	2	1
11.	Hot plate	2	2
12.	Distilled water unit	1	2
13.	Water bath	2	2
14.	Rotary shaker	2	2
15.	Binocular Microscope	20	20
16.	BOD incubator	2	5
17.	Autoclave	2	5
18.	Laminar Air Flow	1	9
19.	Microwave oven	1	1

### Other Equipments Available

Autoclave (5), Hot air oven (7), BOD incubator (5) Electronic Balance (2), Distillation Unit (2), Light Microscope (12), Alcohol Unit (1), Hot plate (2), Laminar Flow chamber (9), Cooling centrifuge (1), phase contrast microscope (46), Fermentor with complete accessories (1),

Spectrophotometer (1), HPLC (1), Gas Chromatography (1), Gel documentation unit (3), stereo zoom microscope (1), High resolution Microscope with image capturing system (1), ELISA Reader (1), Refrigerator (7), UV- Visible double beam (1), Flame photometer (2), PCR (1), Centrifuge (2), Nitrogen Analyser system (1), Vacuum Desiccators (1), pH Meter (2), Mechanical Shaker (1).

### 9. Plant Pathology

S. No.	Facilities	ICAR Requirement	Available
1.	Microscope compound with photo display arrangement	3	5
2.	Sample processing Board (Dry preservation of samples)	5	10
3.	Wet preservation jars	4	150
4.	Autoclave	50	5
5.	Oven	2	5
6.	Deep Freeze	1	2
7.	Centrifuge (3000 rpm)	1	2
8.	Refrigerator	1	5
9.	Water bath	2	2
10.	Electronic balance	2	2
11.	Weighing machine	1	2
12.	Incubator	1	5
13.	Ocular meter	5	10
14.	Stage Micrometer	5	10
15.	Camera Lucida	5	5
16.	Mushroom shed-1 (Experiential Learning)	-	31x15'
17.	Mushroom shed- 2 (Experiential Learning)	-	30x15'
18.	Glass house	-	38x15'
19.	Pot Culture Yard	-	0.4 ac

### Other Equipments Available

PCR-Thermocycler, Gel Documentation System, Electrophoresis Unit, UV Transilluminator, Fermentor, Microscope with bright field Phase contrast and digital SLR Camera, ELISA Reader, Spectrophotometer, Cooling Centrifuge, Deep freezer, Micro centrifuge, Camera lucida, Bio safety cabinet, Laminar Air Flow, Hot Air Oven, BOD, Shaking incubator, Autoclave, Cooling orbital shaking incubator, RT-PCR, Western blot unit, Growth Chamber, Lyophilizer, -80 0C deep freezer, Fluorescent Phase contrast Microscope, Digital microscope, Fluorometer, Student microscope- 90 nos., Ocular Micrometer and Stage Micrometer.

### 10. Animal Sciences including Fisheries

S. No.	Facilities	ICAR Requirement	Available
1.	5000/6500 Feed and Forage Analyser	01	-
2.	Hand and Electric Centrifuge	01	1
3.	Analytical Balance	01	-
4.	Hot air Oven	01	1
5.	Micro kjeldahl N digestion & dismtillation apparatus	01	-
6.	Soxhlet unit for fat estimation	01	-
7.	Hot plate, Fiber Tech	01	-
8.	Vaccuum pump	01	-
9.	Willy Mill Grinder	01	-

10.	Platform balance (100 kg cap)	01	1
11.	Gerber Centrifuge Unit (for milk fat testing)	01	1
12.	Milk analyser (automatic)	01	1
13.	Crude fiber estimation unit	01	-
14.	Distilled water unit	01	-
15.	Incubator cum catcher	01	-
16.	Brooder machine	01	1
17.	Feeder	1	4
18.	waterer	1	4
19.	Egg candling machine	1	1
20.	Debeaker	1	1
21.	Vaccinator	1	1
22.	Milking machine	As per requirement	2
23.	Milking bucket	As per requirement	2
24.	Milking can	As per requirement	2
25.	Animal and bird identification tools	As per requirement	Ear tag, wind/leg bands
26.	Chaff cutter	1	1
27.	Lactometer	1	6
28.	Castrator	1	-
29.	Shearer	1	-
30.	Electric dehorner	1	1
31.	Artificial vagina	1	-
32.	Common Medication device	1	Syringes, 4 units, drencher
33.	Cattle crate	1	1

### Other Equipments

Carton Digital Binocular, Model Feed Plant, Model Hatchery Unit, Electronic Weighing balance, Canon Scanner, Cream Separator

### 6.4.5. Conduct of Practical and Hands-on-Training

According to the number of labs available in each department and considering the nature of the practical, the classes are scheduled to engage all the laboratories throughout the day from 7.00 a.m. to 4.30 p.m., accommodating five batches of practical in a day. During practical, the students undertake field work, dissection, identification, collection of specimens and preservation, insect rearing and collection, preservation of insects, workout calculations recording of observations, estimation of nutrients, isolation of microorganisms, biofertilizer/pesticide preparation, mushroom cultivation, safe handling of farm implements and machineries, spraying, weeding, irrigation, harvesting and post-harvest processing, etc.

The faculty has the provision to take students to nearby farmers unit and institutions during practical to study on farm cultivation and to provide wider exposure on farmers problems, new crops, extension strategies and economical aspects of agri-business. The students are exposed to field level crop breeding and agronomic experiments. Modalities on evaluation of segregating population are taught during breeding practical classes. Hands-on training is given on emasculation

and crossing of crops in breeding practical classes. Lectures are supported by video clippings which help the students to understand the concepts clearly.

For the horticulture courses, the students are given hands on training in various propagation techniques, *viz.*, grafting, layering, budding and cuttings. They are also exposed to micropropagation techniques of horticultural crops, *viz.*, tissue culture methods in the tissue culture laboratory. Further, hi-tech cultivation practices in horticulture crops, *viz.*, protected cultivation, precision farming technology, ultra high-density planting developed at horticulture farm are demonstrated to them. They receive practical knowledge on seed production technology of major vegetable crops. They are provided hands on training in special horticultural practices, *viz.*, pinching, disbudding, training, pruning, etc. The students are well trained in landscaping, a booming sector in horticulture industry, which includes lawn making, identifying various ornamental plants, creepers, and trees.

### **Student READY programme (Rural and Entrepreneurship Awareness Development Yojana) to assure employability and to develop entrepreneurs**

This will be undertaken by the students during the seventh and eighth semesters. Student READY shall be run for full year by making two groups and rotating activities of the final year in two groups. **To get the eligibility for registering for the Student READY programme, the students should have completed all the courses successfully up to sixth semester. No student should be allowed to take up the Student READY programme with backlog/repeat courses.**

1. Experiential Learning (EL)/Hands on Training (HOT) - 20 credits (24 weeks)
2. Rural Horticulture Work Experience (RHWE) 10 credits (10 weeks)
3. In Plant Training/Industrial attachment - 10 credits (10 weeks)

Experiential Learning (EL) aims towards practical work experience in real life situation among the students and therefore it helps the student become “job provider rather job seeker”. EL provides students an excellent opportunity to develop entrepreneurial skills through meaningful hands-on experience and confidence. As the programme is enterprise oriented, students and faculty are to attend the activities of the enterprise even on institutional holidays with total commitment. Each EL unit shall have the organizational set-up as follows:

- Chief Executive Officer- HoD
- Managing Director – Senior Teacher in the group
- Board of Directors – Other teachers in the group
- Manager – Student representative from the group
- Deputy Manager – Another student from the group

### **VII & VIII Semesters**

1. Experiential Learning (EL)/Hands on Training (HOT) - 20 credits (24 weeks)
2. Rural Horticulture Work Experience (RHWE) 10 credits (10 weeks)
3. In Plant Training/Industrial attachment - 10 credits (10 weeks)
4. EXT 411\* -Educational Tour (0+1) (Agricultural Extension) (Non-Gradual course)

#### **The Experiential Learning (EL)/Hands on Training (HOT)**

Experiential Learning/Hands on Training (HOT) helps the student to develop competence, capability, capacity building, acquiring skills, expertise, and confidence to start their own enterprise and turn job creators instead of job seekers. EL provides the students an excellent opportunity to develop analytical and entrepreneurial skills, and knowledge through meaningful hands on experience, confidence in their ability to design and execute project work.

The main objectives of EL are:

- To promote professional skills and knowledge through meaningful hands on experience
- To build confidence and to work in project mode
- To acquire enterprise management capabilities

The Experiential Learning (EL) shall be run for full year by making two groups and rotating activities of the final year in two groups. The students will register for any of two modules, listed below, of 0+10 credit hours each. A separate certificate should be issued to the students after successful completion of EL. Allotment of EL amongst students to different modules should be done strictly on the basis of merit at the end of sixth semester.

ELHOR 401	Commercial Horticulture	Horticulture	0+10
ELHOR 402	Floriculture and Landscape gardening	Horticulture	0+10
ELHOR 403	Processing of fruits and vegetables for value addition	Horticulture	0+10
ELHOR 404	Protected cultivation of high value horticultural crops	Horticulture	0+10
ELHOR 405	Organic vegetable production	Horticulture	0+10
ELAGR 401	Horticultural Waste Management	Agronomy	0+10
ELGPB 401	Seed Production and Technology	Genetics and Plant Breeding	0+10
ELGPB 402	Hybrid seed production technologies	Genetics and Plant Breeding	0+10
ELAGM 401	Production Technology for Bioagents and Biofertilizer	Agricultural Microbiology	0+10
ELPAT 401	Mushroom Cultivation Technology	Plant Pathology	0+10
ELSAC 401	Soil, Plant, Water and Seed Testing	Soil Science and Agricultural Chemistry	0+10
ELENT 401	Commercial Apiculture	Entomology	0+10
ELENT 402	Commercial Production of Entomophages & Biopesticides	Entomology	0+10

Periodical evaluation of the above course will be done by the course teacher during different stages of work. Final evaluation of the above course will be done by the teacher in charge and another staff member appointed as examiner by the Head of the Department. The final examination will be conducted by the University before the commencement of regular final semester examinations.

S.No.	Parameters	Max. Marks
1.	Project Planning and Writing	10
2.	Presentation	10
3.	Regularity	10
4.	Monthly Assessment	10
5.	Output delivery	10
6.	Entrepreneurship Skills	10
7.	Technical Skill Development/ Business networking skills	20
8.	Report Writing Skills	10
9.	Final Presentation	10
<b>Total</b>		<b>100</b>

**Rural Horticultural Work Experience (RHWE) and Industrial Attachment (IA)** shall be undertaken by the students during the seventh/eighth semesters for a total duration of 20 weeks with a weightage of 0+20 credit hours in two parts. The Rural Horticultural Work Experience (RHWE) helps the students primarily to understand the rural situations, status of agricultural technologies adopted by the farmers to prioritize the farmers problems and to develop skills

&attitude of working with farm families for overall development in rural area. The timings for RHWE can be flexible for specific regions to coincide with the main cropping season.

It will consist of general orientation and on-campus training by different faculties followed by village attachment/unit attachment in university/college/KVK/estates or a research station. The students would be attached with the horti-industries to get an experience of the industrial environment and working. Due weightage in terms of credit hours will be given depending upon the duration of stay of students in villages/horti-industries. At the end of RHWE/IA, the students will be given one week for project report preparation, presentation and evaluation. The students would be required to record their observations in field and horti-industries on daily basis and will prepare their project report based on these observations.

### **RHWE & IA - Rural Horticultural Work Experience and Industrial Attachment**

Activities	Department	No. of weeks	Credit Hours
General orientation & On campus training by different faculties	Agrl. Extn.	1	9
Village attachment		8	
Unit attachment in Univ./College. KVK/ Estates/Research Station /Financial Inst.	Agrl.Eco.	5	9
Agri clinic/Horti business center		4	
Horti-Industrial Attachment			
Project Report Preparation, Presentation and Evaluation	Agrl.Extn. & Agrl. Eco.	2	2
<b>Total weeks for RHWE &amp; AIA</b>		<b>20</b>	<b>20</b>
EXT 411 Educational Tour II (Agricultural Extension)			1(0+1)

**Industrial Attachment:** The students would be attached with the Horticulture based industries for a period of 3 weeks to get an experience of the industrial environment and working.

#### **RHWE Component-I**

##### **Village Attachment Training Programme**

Sl. No.	Activity	Duration
1.	Orientation and Survey of Village	1 week
2.	Agronomical Interventions	1 week
3.	Plant Protection Interventions	1 week
4.	Soil Improvement Interventions (Soil sampling and testing)	1 week
5.	Fruit and Vegetable production interventions	1 week
6.	Floriculture and Landscape interventions	1 week
7.	Food Processing and Storage interventions	1 week
8.	Extension and Transfer of Technology activities	1 week

#### **RHWE Component -II**

##### **Horti-Industrial Attachment**

- Students shall be placed in Horti-and Cottage industries and Commodities Boards for 03 weeks.
- Industries include Seed/Nursery production, landscape, Pesticides-insecticides, Post harvest-processing value addition, Agri-finance institutions, etc.

##### **Activities and Tasks during Horti-Industrial Attachment Programme**

- Acquaintance with industry and staff
- Study of structure, functioning, objective and mandates of the industry

- Study of various processing units and hands-on training under supervision of industry staff
- Ethics of industry
- Employment generated by the industry
- Contribution of the industry promoting environment
- Learning business network including outlets of the industry
- Skill development in all crucial tasks of the industry
- Documentation of the activities and task performed by the students
- Performance evaluation, appraisal and ranking of students

The final examination will be conducted separately at the end of the semester by the University. The marks will be awarded as detailed below.

Particulars	Max marks	Evaluation by
Observation Note book	20	By Teacher in-charge
Skills learned	20	
<b>Final examination</b>		
Commendable activities	10	By the Examiners
Detailed project report presentation and Record	30	
<i>Viva Voce</i>	20	
<b>Total</b>	<b>100</b>	

#### Annexure I: Report on Experiential learning units

- ❖ Exposure field visits to are organized to provide hands on training to students for various horticultural courses
- ❖ Students are trained on basic laboratory techniques and applied aspects at field level.
- ❖ Students are trained on identification of weeds/plant species/insects/ diseased symptoms, nutrient deficiency symptoms, etc.
- ❖ Students are given hands-on training in collection of soil samples, plant propagation techniques, plant protection techniques, etc.
- ❖ Students cultivate crops by themselves and learn crop cultivation practically.
- ❖ Students are exposed to practical agriculture by field trips to meet progressive farmers at different villages.
- ❖ The students undergo Agro-Industrial tie-up programme in different agro-based industries, Rural Agricultural Work Experience programme in villages and Experiential Learning Programme.

#### Hands-on Training for B.Sc. (Hons.) Horticulture

S.No.	Name of the Department	Hands-on Training courses	
		B.Sc. (Hons.) Horticulture	Hands on training given to students
1.	Agromony	AGR - 101 Introductory Agrometeorology And Climate Change	<ul style="list-style-type: none"> <li>• Acquiring skill in the use of different instruments and recording data on rainfall / precipitation temperature, pressure, humidity, wind direction and velocity, solar radiation, sunshine hours, evaporation, evapotranspiration, automatic weather station,</li> <li>• Preparation of synoptic charts</li> <li>• Preparation of crop weather calendars,</li> </ul>

		AGR - 102 Weed And Water Management In Horticultural Crops	<ul style="list-style-type: none"> <li>• Determination of soil moisture, field capacity and wilting point</li> <li>• Measurement of irrigation water - units - moisture extraction pattern</li> <li>• Acquiring skill in different surface and sub surface irrigation</li> <li>• Design and operation of sprinkler and drip irrigation</li> <li>• Agronomic method of weed management</li> <li>• Herbicides - Classification</li> <li>• Herbicides - Formulations</li> </ul>
		AGR- 201 Introduction to Major Field Crops	<ul style="list-style-type: none"> <li>• Identification of crops and crop varieties</li> <li>• Nursery preparation, main field preparation for field crops.</li> <li>• Seed treatment techniques.</li> <li>• Sowing and manuring</li> <li>• Seeding implements</li> <li>• Practical training of farm operations in raising fodder crops, Hayandsilagemaking.</li> </ul>
		AGR - 202 Introductory to Agroforestry	<ul style="list-style-type: none"> <li>• Identification of trees-Seeds and seedlings of important agroforestry species</li> <li>• Seed treatments</li> <li>• Forest nursery types Layout, bed preparation</li> <li>• Forest mensuration</li> <li>• Biomass estimation in Energy plantations</li> <li>• Forest plantations and their management</li> </ul>
		AGR- 301Organic Farming	<ul style="list-style-type: none"> <li>• Raising of vegetable crops organically through nutrient, diseases and pest management</li> <li>• Experiencing organic farming practices</li> <li>• Hands on experience on bio composting, vermicomposting, ITK based biological preparations, bio-inoculants</li> <li>• Grading, packaging, post-harvest management</li> </ul>
2	Agricultural Economics	AEC- 101 ECONOMICS AND MARKETING	Assignments given to the students by the concerned teacher and evaluated at the end of the semester
		AEC 301 Horti-Business Management	Visits to various horticulture based industries to gain practical exposure to start a new business
		AEC 302 Entrepreneurship Development And Business Management	Visits to various agri- business incubators to acquire the technical skills and getacclimatised with the Government policies on Small and Medium Enterprises
3.	Agricultural Extension	EXT - 101 Fundamentals ofExtensionEducation (1+1)	<ul style="list-style-type: none"> <li>• Organizationofgroupdiscussionandmethoddemonstrationintransferoftechnology.</li> <li>• First-handexperienceonactivitiesofextensionunits.</li> <li>• Writingscriptsformass mediaalongwiththepreparation ofagriculturalinformationmaterials.</li> <li>• Selectionandpreparationofprojectedand non-projectedvisualaids.</li> <li>• Handlingof publicaddress equipment,videocameraandLCDProjector.</li> </ul>

		EXT -301 Communicationskills and personality Development (1+1)	<ul style="list-style-type: none"> <li>• EffectivePresentationskills</li> <li>• Organizationandparticipationingroupdiscussions.</li> <li>• Firsthand experience on reading and comprehension skills.</li> <li>• Understanding ofimportance and insight into creativity skills.</li> </ul>
		RHWE - Rural Horticultural Work Experience (0+10)	<ul style="list-style-type: none"> <li>• Conductingneedbasedmethoddemonstrations, campaigns and exhibitionsin thevillages.</li> <li>• Organization of field visits and group discussion with farmers.</li> <li>• Organization of farmers/ rural youth training programme.</li> <li>• Participation in village social service work.</li> <li>• Identification of communication media in the transfer of technologies.</li> <li>• Report preparations and presentation</li> </ul>
		EXT 411 -Educational Tour (0+1)	<ul style="list-style-type: none"> <li>• Preparation of tour schedule</li> <li>• Coordinating various tour related activities</li> <li>• Exposure about national level education, research and extension institution.</li> </ul>
4.	Agrl. Microbiology	AGM 101IntroductoryMicrobio logy(1+1)	<ul style="list-style-type: none"> <li>• Betterunderstandingofstudentsaboutthemicroscopicw orld</li> <li>• Students acquire withthebasiclaboratorytechniquesandtoolsof microbiology</li> <li>• Gain knowledge about theroleofmicroorganismsinsoilfertility,foodandindustr ies.</li> </ul>
		AGM - 201 Fundamentals Of Food Technology (1+1)	<ul style="list-style-type: none"> <li>• Students to know food principles underlying food and Energy.</li> <li>• Knowledge on cereals, pulser, Lipids and oils.</li> <li>• Learn about the composition and spoil of meat, fish and poultry</li> </ul>
		AGM 202 - Environmental Studies And Disaster Management(2+1)	<ul style="list-style-type: none"> <li>• Development of positive attitude of Concern for the surrounding.</li> <li>• Student will acquire potential role on the microorganisms employed in Bioremediation.</li> <li>• Students will acquire technology about solid waste management</li> <li>• Students will aware about current scenario of disaster Management.</li> </ul>
5	Entomology	ENT 101 Fundamentals of Entomology	<ul style="list-style-type: none"> <li>• Dissection of Mouthparts in insects</li> <li>• Field collection, preservation and mounting of insects</li> </ul>
		ENT 202 Insect Pests of Fruit, Plantation, Medicinal and Aromatic Crops	<ul style="list-style-type: none"> <li>• Rearing of pest larvae</li> <li>• Identification of pests</li> <li>• Training on management practices</li> </ul>
		ENT 301 Insect Pests of Vegetable, Ornamental and Spice Crops	<ul style="list-style-type: none"> <li>• Rearing of pest larvae</li> <li>• Identification of pests</li> <li>• Training on management practices</li> </ul>

		ENT 302 Apiculture, Sericulture and Lac Culture	<ul style="list-style-type: none"> <li>• Rearing of silkworm</li> <li>• Maintenance of bee colony</li> <li>• Extraction of honey</li> <li>• Making value added products with honey</li> </ul>
6	Genetics & Plant Breeding	GPB 101 Introductory Crop Physiology	<ul style="list-style-type: none"> <li>• Measurement of leaf area</li> <li>• Measurement of stomatal index and frequency</li> <li>• Measurement of plant water potential</li> <li>• Growth analysis</li> <li>• Measurement of relative water content</li> </ul>
		GPB 102 Fundamentals of Genetics and Cytogenetics	<ul style="list-style-type: none"> <li>• Study of microscopes</li> <li>• Stages of cell division - Mitosis</li> <li>• Stages of cell division - Meiosis</li> <li>• Phenomenon of Crossing over using colour clay.</li> <li>• Phenomenon of dominance and recessivity.</li> <li>• Problems on linkage and crossing over.</li> </ul>
		GPB 201 Fundamentals of Plant Breeding	<ul style="list-style-type: none"> <li>• Plant breeding kit</li> <li>• Floral biology and emasculation in major crops</li> <li>• Male sterility and self incompatibility</li> <li>• Basic statistics-calculation of</li> <li>• PCV, GCV, heritability and genetic advance</li> </ul>
		GPB 301 Seed production of vegetables, tuber and spices crops	<ul style="list-style-type: none"> <li>• Seed structure</li> <li>• Germination test using different media</li> <li>• Tetrazolium test</li> <li>• Paper piercing test</li> <li>• Brick gravel test</li> <li>• Physical purity test</li> <li>• Seed extraction in vegetables</li> </ul>
7	Horticulture	HOR 101 Fundamentals of Horticulture	<ul style="list-style-type: none"> <li>• Planning, layout and planting of fruit trees</li> <li>• Identification and use of tools and implements in orchard</li> <li>• Preparation of different media used for horticultural crops</li> <li>• Practicing training and pruning methods in horticultural crops</li> <li>• Field application of plant growth regulators and fertilizers in fruit and vegetable crops</li> </ul>
		HOR 102 Plant Propagation and Nursery Management	<ul style="list-style-type: none"> <li>• Preparation of different nursery beds and seed sowing</li> <li>• Practicing seed treatment methods in horticultural crops</li> <li>• Practicing vegetative propagation techniques - hard wood cutting and air layering</li> <li>• Practicing vegetative propagation techniques - approach grafting and T-budding</li> <li>• Acquiring hands on training in micropropagation</li> </ul>

		HOR 103 Tropical and Sub Tropical Fruits	<ul style="list-style-type: none"> <li>• Identification of varieties of mango and banana</li> <li>• Identification of varieties of sapota and guava</li> <li>• Sucker treatment in banana</li> <li>• Visiting commercial orchards to learn propagation and planting of fruit trees</li> <li>• Preparation and foliar application of plant growth regulators</li> </ul>
		HOR 104 Tropical and Sub Tropical Vegetable Crops	<ul style="list-style-type: none"> <li>• Practicing to establish a kitchen garden</li> <li>• Preparation of field and sowing of direct sown vegetable crops</li> <li>• Practicing transplanting of vegetable crops</li> <li>• Identification of nutrient deficiency and physiological disorders in vegetable crops under field condition</li> <li>• Visit to commercial vegetable growing area and markets</li> </ul>
		HOR 105 Potato and Tuber Crops	<ul style="list-style-type: none"> <li>• Identification and description of potato and tuber crops</li> <li>• Field preparation and planting of cassava</li> <li>• Studying nutrient deficiency in tuber crops</li> <li>• Analyzing nutritional requirement of tuber crops</li> <li>• Judging maturity indices of tuber crops</li> </ul>
		HOR 106 Growth and Development of Horticultural Crops	<ul style="list-style-type: none"> <li>• Identification various types of plant growth</li> <li>• Measurement of plant growth</li> <li>• Various methods of breaking seed and bud dormancy</li> <li>• Identification of deficiency symptoms in horticultural crops</li> <li>• Identification of physiological disorders in horticultural crops</li> <li>• Estimation of quality attributes of fruits</li> </ul>
		HOR 201 Temperate Fruit Crops	<ul style="list-style-type: none"> <li>• Identification of varieties of apple</li> <li>• Identification of varieties of plums</li> <li>• Identification of varieties of walnut</li> <li>• Estimation of quality parameter TSS by hand refractometer in various apple varieties</li> <li>• Visit to temperate fruit orchards</li> </ul>
		HOR 202 Temperate Vegetable Crops	<ul style="list-style-type: none"> <li>• Practicing nursery preparation and sowing of temperate vegetables in winter season</li> <li>• Identification of nutritional disorders in temperate vegetable crops</li> <li>• Identification of physiological disorders in temperate vegetable crops</li> <li>• Judging maturity indices and harvesting of temperate vegetables</li> <li>• Visit to exotic temperate vegetable fields</li> </ul>
		HOR 203 Ornamental Horticulture	<ul style="list-style-type: none"> <li>• Identification of trees and its utilization in landscaping</li> <li>• Identification of shrubs and climbers and its utilization in landscaping</li> <li>• Establishment of vertical garden</li> <li>• Preparation of veni, flower boquet and creation of rangoli with flowers</li> <li>• Visit to floriculture nursery units</li> </ul>

		HOR 204 Dryland and Silvi Horticulture	<ul style="list-style-type: none"> <li>• Practicing assessment of maturity and post harvest handling of dry land fruit crops</li> <li>• Identification of agroforestry trees and its utilization</li> <li>• Visit to woodlots of casuarinas and eucalyptus</li> <li>• Visit to agroforestry system in farmers holding</li> <li>• Visit to watershed areas</li> </ul>
		HOR 205 Breeding of vegetables, tuber and Spice crops	<ul style="list-style-type: none"> <li>• Identification of inflorescence types in vegetable crops</li> <li>• Identification of sex forms in vegetables</li> <li>• Identification of mechanisms favouring self pollination in vegetables</li> <li>• Identification of mechanisms favouring cross pollination in vegetables</li> <li>• Hands on training on emasculation and F<sub>1</sub> hybrid seed production</li> </ul>
		HOR 206 Spices and Condiments	<ul style="list-style-type: none"> <li>• Identification of spices and condiments</li> <li>• Raising of condiments</li> <li>• Visits to commercial spice gardens</li> <li>• Visits to processing units of spices</li> <li>• Visit to essential oil extraction units</li> </ul>
		HOR 207 Principles of Landscape Architecture	<ul style="list-style-type: none"> <li>• Practicing different styles of garden</li> <li>• Practicing the art of topiary and trophy</li> <li>• Establishment of hedges, edges and carpet beds</li> <li>• Practicing indoor gardening</li> <li>• Visits to public gardens and botanical gardens</li> </ul>
		HOR 208 Breeding of Fruit and Plantation Crops	<ul style="list-style-type: none"> <li>• Floral biology and crossing techniques in mango and banana</li> <li>• Floral biology and crossing techniques in sapota</li> <li>• Studying crossing techniques in coconut</li> <li>• Raising and evaluation of hybrid seedlings</li> <li>• Preparation and use of physical and chemical mutagens</li> </ul>
		HOR 209 Orchard and Estate Management	<ul style="list-style-type: none"> <li>• Practicing different planting systems of orchard</li> <li>• Studies on cropping systems in orchards</li> <li>• Practicing intercultural operations in orchard crops</li> <li>• Laying out irrigation systems in orchard</li> <li>• Visit to different local fruit orchard</li> </ul>
		HOR 301 Commercial Floriculture	<ul style="list-style-type: none"> <li>• Practicing vegetative propagation techniques in flower crops – jasmine and rose</li> <li>• Hands on experience of some pruning techniques like pinching and disbudding in chrysanthemum</li> <li>• Practicing application of plant growth regulators for modifying the growth and improving the flower yield</li> <li>• Visit to flower growing areas to get expertise in loose flowers and cut flowers</li> <li>• Visit to flower markets</li> </ul>

		HOR 302 Precision Farming and Protected Cultivation	<ul style="list-style-type: none"> <li>• Study of different types of green houses</li> <li>• Study of different cooling systems used in green houses for cultivation of horticultural crops</li> <li>• Study of different heating systems used in green houses for cultivation of horticultural crops</li> <li>• Practicing certain special cultural practices for flower crops under protected cultivation</li> <li>• Visits to commercial green houses</li> </ul>
		HOR 303 Post Harvest Management of Horticultural	<ul style="list-style-type: none"> <li>• Determining maturity stages of commercial fruits and vegetables</li> <li>• Practicing Packaging and storage of fruits, vegetables and flowers</li> <li>• Acquiring knowledge about Edible wax coating of fruits and vegetables</li> <li>• Practicing different methods to extend the Vase life of cut flowers</li> <li>• Visits to cold storage/grading and packing units</li> </ul>
		HOR 304 Breeding and Seed Production of Flower and Ornamental Crops	<ul style="list-style-type: none"> <li>• Seed collection in ornamental plants</li> <li>• Practicing methods of seed extraction in ornamental plants</li> <li>• Floral biology, selfing, emasculation and crossing technique on zinnia</li> <li>• Visit to ornamental seed production plots</li> <li>• Visit to commercial flower seed production industries</li> </ul>
		HOR 305 Production (Vegetable crops / Flower crops)	<ul style="list-style-type: none"> <li>• Practice in raising nursery for transplanted vegetables</li> <li>• Field preparation and practicing application of fertilizers</li> <li>• Practicing irrigation and fertigation practices in vegetable crops</li> <li>• Judging maturity indices and practicing harvesting of vegetable crops</li> <li>• Acquiring knowledge in seed extraction, processing, cleaning and packaging</li> </ul>
		HOR 306 Plantation Crops	<ul style="list-style-type: none"> <li>• Visit to tea board and tea plantation</li> <li>• Visit to coffee board and coffee plantation</li> <li>• Visit to rubber plantation and processing units</li> <li>• Practicing coconut mother palm selection</li> <li>• Visit to coconut by-product industries</li> </ul>
		HOR 307 Medicinal and Aromatic Crops	<ul style="list-style-type: none"> <li>• Practicing propagation of aloe</li> <li>• Raising seedlings of periwinkle</li> <li>• Propagation and nursery techniques for gloriosa</li> <li>• Field preparation and planting of mint.</li> <li>• Field preparation and planting of vetiver.</li> </ul>
		HOR 308 Processing of Horticultural Crops	<ul style="list-style-type: none"> <li>• Preparation of unfermented beverages</li> <li>• Bottling of fruits beverages and Minimal Processing of fruits and vegetables</li> <li>• Preparation of pickles and chips</li> <li>• Preparation of sauces, chutneys and ketchup</li> <li>• Preparation of jam, jelly, marmalade, candies and preserves</li> </ul>

8	Plant Pathology	PAT 101- Fundamentals of Plant Pathology	<ul style="list-style-type: none"> <li>➤ Handling of Microscope</li> <li>➤ Cross section from disease specimens</li> <li>➤ Microscopic identification of fungal spores and fruiting bodies</li> <li>➤ Preparation of Mounting Slides from disease specimens</li> <li>➤ Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.</li> </ul>
		PAT 201- Diseases of Vegetable Ornamental and Spices Crops	<ul style="list-style-type: none"> <li>➤ Cross section from disease specimens</li> <li>➤ Microscopic identification of fungal spores and fruiting bodies</li> <li>➤ Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.</li> <li>➤ Preparation of Mounting Slides from disease specimens</li> </ul>
		PAT 202- Nematode Pests of Horticultural Crops and their Management	<ul style="list-style-type: none"> <li>➤ Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.</li> <li>➤ Nematode Isolation and identification</li> </ul>
		PAT 301- Diseases of Fruit, Plantation, Medicinal and Aromatic Crops	<ul style="list-style-type: none"> <li>➤ Handling different types of sprayers</li> <li>➤ Different methods of application of fungicides and bio control agents</li> <li>➤ Integrated Disease management practices is taught to the UG students with an objective of gaining knowledge on various aspects on crop disease management.</li> <li>➤ Identification of bio agents, impact of natural products on crop disease management.</li> <li>➤ Bio-efficacy studies on new generation fungicides against crop diseases.</li> </ul>
9	Soil Science & Agrl. Chemistry	SAC 112- Principles of Analytical Chemistry	<ul style="list-style-type: none"> <li>• Preparation of laboratory reagents</li> <li>• preparation of primary and secondary standards</li> <li>• Gravimetric analysis</li> <li>• Instrumental analysis-potentiometry, conductometry, colorimetry, spectrophotometry</li> <li>• Radioactivity - radiation decay, detection and measurements</li> </ul>
		SAC 124 - Fundamentals of Biochemistry	<ul style="list-style-type: none"> <li>• Qualitative tests for Glucose, Fructose</li> <li>• Qualitative tests for Sucrose, Lactose, Maltose, Starch and Dextrin</li> <li>• Quantitative estimation of Carbohydrates</li> <li>• Analysis proteins, lipids- various</li> <li>• chemical constants</li> <li>• assay of Vitamins</li> </ul>

		SAC 213 Fundamentals of Soil Science	<ul style="list-style-type: none"> <li>• Identification of rocks and minerals</li> <li>• soil profile study</li> <li>• collection and processing of soil samples</li> <li>• Analysis of soil physical and chemical properties</li> <li>• Analysis of exchangeable cations in soil, buffering capacity of soil</li> </ul>
		SAC 315 Soil Fertility, Fertilizers and Manures	<ul style="list-style-type: none"> <li>• Identification of deficiency and toxicity symptoms</li> <li>• Manufacturing technology of urea,</li> <li>• ammonium sulfate, SSP, DAP, MOP and SOP. Complex, mixed fertilizers, customized / Specialty fertilizers</li> <li>• Manures analysis , Composting techniques.</li> <li>• Soil health study</li> <li>• Establishment of soil testing laboratories</li> </ul>

#### 6.4.6. Supervision of students in PG and Ph.D. programmes – Not applicable

#### 6.4.7. Feedback of stakeholders (students, parents, industries, employers, farmers, etc.)

The IQAC conducts Stakeholders feedback survey every year with the following objectives,

1. To quantify the level of satisfaction experienced by students regarding the curricular and other aspects during their course of learning in the University
2. To measure the level of satisfaction acquired by the alumni with regard to general and curricular aspects of the University
3. To obtain the views of Teachers on syllabus review and redesign
4. To identify the pit falls and bottle necks in the process of facilitating teaching- learning process
5. To address the problems and the gaps identified in academic process improvement
6. To derive strategies for quality enhancement
7. To set new goals for future and lifelong learning

The survey process is done by uploading the structured questionnaires specifically designed for its alumni, students, and teachers in the following aspects:

1. Alumni feedback on curricular aspects
2. Alumni feedback on general aspects
3. Student feedback on curricular aspects
4. Teacher feedback on curricular aspects

The students are sensitized about the importance of the survey and its objectives through their class coordinators and mentors. Emphasis is given to offer fair and actual opinions by the respondents without any personal bias and hesitation. The feedback is analyzed and survey reports are prepared for submission to the Authorities of the University for Further Action. Based on the feedback necessary improvements are being carried out in the ensuing academic year. Representatives of industries, employers, and other stakeholders who are nominated to serve in various academic bodies, board of studies provide their input for fine turning the curriculum and offer valuable suggestions for student centric education to improve overall quality of teaching and learning. In addition to this, informal feedback is obtained from our alumni when they visit campus during reunion meet. Informal feedback is being obtained from all stakeholders like farmers, industries, NGOs during exposure visits, RAWE, trainings, etc. Action taken report is also regularly submitted to the authorities.

#### 6.4.8. Student intake and attrition in the programme for last five years

Year-wise information on sanctioned strength, actual intake and attrition in the last five years of the degree programme is given below.

Programmes	Year									
	2017-18		2018-19		2019-20		2020-21		2021-22	
	Intake	Attrition (%)								
<b>Under graduate programmes</b>										
B. Sc. (Agri.)/ B.Sc. (Hons) Horticulture	72	19.4	97	2.06	88	9.09	79	15.2	100	1

Sl. No.	Year	Male	Female	Students admitted	Sanctioned strength
1	2017-18	22	36	58	100
2	2018-19	36	59	95	100
3	2019-20	32	48	80	100
4	2020-21	44	47	91	100
5	2021-22	34	65	99	100

\* As per the approval of the Government (Before Accreditation)

\*\* As per the approval of ICAR (After Accreditation)

#### 6.4.9. ICT Application in Curricula Delivery

Annamalai University has a state of the art IT facility, a jewel in the crown of its overall infrastructure, including campus-wide intranet connection with an exclusive 1 GBPS bandwidth internet leased line.

Among the theory class rooms, out of 26 classrooms, 20 classrooms in the faculty are ICT enabled with LCD projectors. In addition, all the departments has additional ICT enabled UG laboratories with LCD projectors/Interactive boards/ Smart TVs/Electronic podium etc.

##### ICT tools:

- Various state of the art, subject specific, ICT software, most of which are in-house developed, such as the following are in use:
- **ENVIS database** to access information on estuaries, mangroves, coral reefs and lagoons and other
- marine resources
- **3-D Montage software** for real time image capturing of minute insect structures and specimens
- Online resources like virtual labs and video contents are integrated as learning material
- Workplace Management Systems like Google Classroom, Zoom meeting, Go to meeting, Edmodo,
- Microsoft Karizala to deliver contents and review assignments
- Social media network groups for real time reporting, attendance and on site work progress for monitoring Hands-on training, Industrial visit, Rural Agricultural Work experience
- University website hosts online tutorial classes
- Exclusive Microsoft Teams ID for all the teachers and students have been created
- Specific virtual platforms created to handle and monitor online classes in defined schedules

### **Online and ICT Learning Resources**

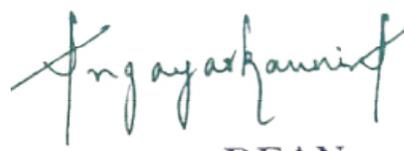
- 24 x 7 remote access of University library resources through “MyLOFT” app
- Integration of the department and faculty libraries with the central library to facilitate remote access to resources in all the libraries from one point
- Web link for remote login for various resources including J-GATE, ProQuest database for Ejournal and books and Central Library are provided in university website
- Online resources like e-journals, e-books, Online databases, Statistical software, Mobile apps, CDROM,
- YouTube videos, Carnatic.com, kutcheri buzz for delivering teaching material Link to e-learning resources like SWAYAM portal, e-PGPathshala , etc., along with details of university level coordinators provided in the University website to facilitate easy enrolment of students
- E-content resources for the students are made available in the Student Portal under the header “Learning Resources.”
- INFONET lab to facilitate the students to broaden and strengthen their knowledge

**6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.**

**6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.**

**6.4.12. Certificate (Applicable when SSR is submitted for Programme)**

I, **A. Angayarkanni**, the Dean Faculty of Agriculture, Annamalai University hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
**DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY**

**Signature of Dean of the College with Date & Seal**



# Annammalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Agronomy

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annammalainagar - 608 002  
Tamilnadu  
2022



## M.Sc. (Agri.) Agronomy

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## 6.4. Self Study Report for the Programme

Name of the Programme: M.Sc. (Ag.) Agronomy

Offered by: Department of Agronomy

### 6.4.1. Brief History of M.Sc. (Ag.) Agronomy Programme

The Department of Agronomy in the Faculty of Agriculture was started as a Division in 1958 to offer courses in B.Sc., (Ag.). Later on, it was upgraded as a Department in the year 1980. The Post graduate programme in M.Sc. (Ag.) Agronomy was started in the year 1978.

Historical Itinerary	Year of Commencement
Division of Agronomy	1958
M.Sc., (Ag.) in Agronomy	1978
Department Status	1980

M.Sc. (Ag.) Agronomy degree programme has a total of 70 credits. The revision of the curricula is carried out with effect from the academic year 2022 – 2023 based on the ICAR fifth Dean's committee.

#### Distribution Pattern of Courses and Credits (For Research Program)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Research	Credit Load
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14
Credit Load	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

#### Distribution Pattern of Courses and Credits (For IDEA Program)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	IDEA	Credit Load
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10 +10	22
Credit Load	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

## Distribution Pattern of Courses and Credits

### Distribution of Courses

Code	Course Title	Credits
<b>Compulsory Major Courses</b>		
AGR 501*	Modern Concepts in Crop Production	3(3+0)
AGR 502*	Principles and Practices of Weed Management	3(2+1)
AGR 505*	Principles and Practices of Water Management	3(2+1)
AGR 506*	Principles and Practices of Soil Fertility and Nutrient Management	3(2+1)
<b>Major optional courses</b>		
AGR 503	Conservation Agriculture	2(1+1)
AGR 507	Agronomy of Major Cereals and Pulses	3(2+1)
AGR 508	Agronomy of Oilseed, Fibre and Sugar crops	3(2+1)
AGR 509	Agro Meteorology and Crop Weather Forecasting	3(2+1)
AGR 504	Agronomy of Fodder and Forage crops	2(1+1)
<b>Minor Course</b>		
AGR 510	Dry land farming and Watershed Management	3(2+1)
AGR 511	Agrostology and Agroforestry	3(2+1)
AGR 512	Principles and Practices of Organic Farming	3(2+1)
AGR 513	Agronomy of Medicinal Aromatic and under-utilized crops	2(1+1)
AGR 514	Cropping Systems and Sustainable Agriculture	2(2+0)
<b>Supporting Course</b>		
STA 511	Statistical Methods for Applied Sciences	3(2+1)
COM 521	Information Technology in Agriculture	3(2+1)
<b>Common courses</b>		
PGS 501	Library and Information services	1(0+1)
PGS 502	Technical writing and Communication Skill	1(0+1)
PGS 503	Intellectual property and its Management in Agriculture	1(1+0)
PGS 504	Basic Concepts in Laboratory Techniques	1(0+1)
PGS 505	Agricultural Research Methodology and Research Ethics and rural development Programmes	1(1+0)
<b>Non-Gradial Compulsory Courses</b>		
NGC 511	Disaster management (Contact Hour :1)	-
NGC 512	Constitution of India (Contact Hour :1)	-
VAC	Value added Course	-
AGR 591	Seminar	1(0+1)
AGR 596/597/598/599	Research/ IDEA	30
		-

\*Compulsory Courses

## **Vision**

- To impart futuristic hi-tech agricultural education, install discipline and set global standards making agricultural graduates technologically sound and ethically strong, who in turn shall improve the livelihoods and quality of farmers' life, food, nutritional and bio security.

## **Goals**

- To impart quality education by adopting the best practices to train students as per emerging trends in agriculture development.
- To educate the local farmers in their goal of achieving higher productivity by solving the field issues.
- To promote research and training on sustainable development of agricultural technologies.
- To encourage the youth on entrepreneurship and Agri-business

## **Objectives**

- To impart quality education for Post-graduate students.
- To undertake research on need based location specific problems for developing suitable technologies towards augmenting crop productivity.
- To create the state of the art of technology, development and transfer to the different stake holders in agriculture.
- To extend specific support to establish agri-business startups and consultancy service to the Agro-based industries.

**Strategic plan to achieve Vision and Goal**

<b>Goals</b>	<b>Objectives</b>	<b>Implementation plan</b>	<b>Performance Metrics/Timeline</b>
To impart comprehensive education to the students	<b><u>Quality Education</u></b> To create improved environment to the students to achieve the best teaching-learning process	Classes are handled by experienced faculty through class room teaching, practical demonstration, strict periodical evaluation process	Semester-wise having 105 days duration with a mid-semester examination
To solve productivity issues through scientific research	<b><u>Transfer of Technology</u></b> To undertake research on need based location specific problems and developing technologies for crop management for sustainable productivity of crops.	PG students are taking up research problems as part of their course besides presenting credit seminars	Advisory committee review the research periodically as per the curriculum
To promote research and training on sustainable development	<b><u>Research Collaboration and Consultancy services</u></b> To undertake research projects for new agro-chemicals	Field trials, demonstrations, model plot etc. are carried out in our experimental farm	Updating knowledge through Periodical exposure to the latest development in the agriculture sector through various research projects
To encourage the youth on entrepreneurship and Agri-business	<b><u>Student support</u></b> To extend specific support to establish agri-business startups	Encouraging the students to be a job provider rather than job seeker	Motivating the students through periodical guest lectures by agri-technocrats and subject matter specialists

## Accomplishments of the Department

At early stages, the Department was staffed by a small group of enthusiastic Agronomists. Notable persons like Dr. K. Shiva Shankar, Prof. AR. Lakshmanan, Prof. Rm. Alagappan, Dr. P.Panneerselvam, Mr.E.Thiruvarasan, Dr. G. Kuppuswamy, Dr.RM.Kathiresan, Dr K.Wahab, Dr.V. Vaiyapuri, Dr.K.Thanunathan and Dr. M. Ganapathy nurtured the department with all dedication. Since June 2021, the Department under the stewardship of Dr. V. Imayavaramban, is promoting the department with all commitment and support by 39 learned staff. The present devoted team is striving hard to make the Department has attain an excellence in academic and research activities. The alumni of the Department occupied various important positions such as IAS officers, Deans and Professors in SAUs, Principal Scientist in ICAR and marketing managers in private agro-chemical companies in India and abroad. For the past six decades the department of Agronomy has effectively produced **643 M.Sc. (Ag), 77 Ph.D. and 1 D.Sc. students.**

The Department has effectively completed research projects in advanced science frontiers and received funding from UGC- SAP, DST- FIST, DBT, BIRAC, IKP, PCRA, MNES, Ministry of coal, ICAR, DST, Ministry of Environment and Forests, IRRI, TNSCST, DBT and also from various private companies generating research funds so far to a tune of 2739.41 lakh rupees. The Department has international Collaborations with FAO, IRRI, IACR, Rothamsted Experimental Station, U.K., Natural Product Research Centre, USDA, Ministry of Agriculture, Iraq, Charles Strut University, Australia and national collaborations with National Institute of Technology (Trichy), International Institute of Bio-technology and Toxicology (Chennai), Dhan Foundation, Madurai, Vedhapuri KVK and BMT KVK of Tamil Nadu.

The department has linkage and MOU's with industrial partners for curriculum design, internship, industrial tie-up, student projects, training programme, campus placement and collaborative **R&D with IRRI, Philippines, NRCWS (Jabalpur), DBT – Govt. of India, IIBAT, Padappai, NIT-Trichy, Imtrade Commodities (India), Pvt. Ltd., Nagarjuna Fertilizer and Chemicals Pvt., Ltd., Hyderabad, Netafim, Coimbatore, Tamil Nadu, M/s. Dow Agro Science, Mumbai, M/s. Bayer crop Sciences, Mumbai, M/s. BASF, Mumbai, M/s. Coromandel International Ltd., Secunderabad, Godrej Agrovvet Ltd., Mumbai, M/s. Sumitomo Chemicals India Pvt., Ltd., New Delhi, M/s. Ramicides Crop Science, M/s. Syngenta India Ltd., Coimbatore, M/s. Privi life Science Pvt., Ltd., Mumbai, Deccan Chemicals Pvt. Ltd., Hyderabad, Crystal Crop Protection Ltd., UPL, Indofil, Pioneer Miyagi Ltd., and JK Pharma chemical Ltd., Tamil Nadu, Gentech crop science Ltd., Pioneer Jellice Ltd and T- Stanes, Co. Ltd., Coimbatore.**

The **Agricultural Meteorology “B” Class Observatory** was established in the year 1958 in the Annamalai University Experimental Farm. The data collected from this observatory are shared with the Indian Meteorological Department, New Delhi, the Collector of Cuddalore District, and used for academic and research work. The data from the meteorological observatory strengthens the economic and social aspects of the population living in the locality viz., irrigation department for scheduling irrigation and warning of monsoons and cyclone for general preparedness of the community. The meteorological data is available for the post graduate students and the research scholars for better understanding of risk and uncertainties in weather aberrations for decision making and their interpretation. **Official from the IMD visit yearly and inspect the maintenance of data, also an automatic weather station is established in the same location by the IMD.**

<b>Category</b>	<b>Period (Upto 2016)</b>	<b>Last five year period(2017- 2022)</b>
Number of publications (Journal articles)	475	466
Number of publications (Seminars/Conferences/Symposia)	1029	64
Number of Books and Book chapters	62	49
Number of Funded Projects	36	78
Grant mobilization (Rs. in Lakhs)	2077.13	662.28
Number of D.Sc., Produced	1	-
Number of Ph.Ds. Produced	74	04
Number of PGs. Produced	455	159
Number of Seminars/Conferences /Workshops/ trainings Organized	8	3
Number of Awards received by the Faculty	40	85
Number of Professional visits to abroad	26	8

### 6.4.2. Faculty Strength

Sl. No.	Posts	Sanctioned	Faculty in place (as on July 2022)	Vacant Position	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1.	Professor*	6	6	0	1
2.	Associate Professor*	12	12	0	1
3.	Assistant Professor*	21	21	0	5
<b>Total</b>		<b>39</b>	<b>39</b>	<b>0</b>	<b>7</b>

\* Engaged in UG and PG programmes

### Faculty deputed from other Departments to handle Common, Supporting and Non-Gradual courses

Sl. No.	Posts	Sanctioned	Faculty in place (as on July 2022)	Vacant Position	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1.	Professor*	1	1 (Statistics)	0	-
2.	Associate Professor*	1	1 (Computer science)	0	-
3.	Assistant Professor*	5	5 (Library science, English, Economics, Soil Science & Political Science)	0	-
<b>Total</b>		<b>7</b>	<b>7</b>	<b>0</b>	<b>-</b>

\*Assigned responsibilities for multiple programmes

### 6.4.3. Technical and supporting staff

Sl. No.	Posts	S	F	V	Recommended	Deviation from Recommendation (Sanctioned)	Responsibility
1.	Supporting staff (Liaison Officer & Special officer)	2	2	-	1	Nil	Establishment works, Purchase and issues, Dispatch of letters, circular maintenance

							and Maintenance of practical class
2.	Technical Staff (Deputy farm Supdt., Technical Officer, Technical Assistant)	12	12	-	3	Nil	Farm administrative works, Maintenance of library, Lab in charge and maintenance
3.	Field Staff* (Farm worker, Gardener & Helper)	77	77	-	2	Nil	Assisting routine activities of the department, Farm field activities, Research trials
<b>Total</b>		<b>91</b>	<b>91</b>	<b>-</b>	<b>6</b>		

\*(Permanent, NMR, Casual labour)

### Credentials of the Faculty members

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications		Number of Publications (2017-2022)	
				PG	Ph.D.	Journals	Others*	Journals	Others*
1.	Dr. V. Imayavaramban Professor & Head	29	Agroforestry, Oil Seeds	15	1	40	1	7	-
2.	Dr. RM. Kathiresan Professor (Retd. On 30.06.2021)	36	Weed Science, Farming System	30	10	102	40	07	01
3.	Dr. M. Ganapathy (Retd.) Professor	35	Climatology, Agroforestry	21	5	75	28	8	7
4.	Dr. S. Natarajan Professor	32	SRI, Organic Agriculture and Irrigation management	18	3	40	15	5	2
5.	Dr.(Mrs.) A. Sundari Professor	28	Weed management and Irrigation management	20	6	42	4	2	1

6.	Dr. R. Raman Professor	28	Post-harvest Technology, Organic farming, Pulses	5	-	25	18	6	2
7.	Dr. S. Kandasamy Professor	23	Post-Harvest Technology, Cropping System	11	-	24	8	4	-
8.	Dr. M. Meyyappan Associate Professor	22	Water management, Forestry, Weed management and Cropping system	9	-	22	19	11	10
9.	Dr. S. Manimaran Associate Professor	20	Nutrient management, Weed management, Sugarcane production	9	1	19	10	10	3
10.	Dr. M. Thiruppathi Associate Professor	20	Cropping system and Irrigation Agronomy	9	-	54	14	12	10
11.	Dr. P. Sudhakar Associate Professor	20	Soil fertility, Cropping system and Agri. Meteorology	9	-	15	10	5	1
12.	Dr. C. Kalaiyaran Associate Professor	20	Nutrient management, Dry farming and weed management	8	-	65	18	33	11
13.	Dr. G. Baradhan Associate Professor	19	Nutrient management, Agro meteorology	7	1	64	22	17	7
14.	Dr. S. Babu Associate Professor	18	Soil fertility and Weed	9	1	32	6	9	-

			Management						
15.	Dr. N. Ramesh Associate Professor	19	Agro meteorology and Irrigation management	7	0	27	21	5	1
16.	Dr. S. Ramesh Associate Professor	20	Cropping system, Soil fertility and Nutrient management	9	0	79	13	24	5
17.	Dr.S.M.Suresh Kumar Associate Professor	16	Weed management and Agricultural meteorology	6	1	60	20	9	5
18.	Dr. S. Elankavi Associate Professor	17	Agronomy- Nutrient Management	8	-	45	14	8	2
19.	Dr. J. Nambi Associate Professor	17	Weed science	6	-	13	2	8	-
20.	Dr.(Mrs.) D.KumariManimuthuV eerai Assistant Professor	20	Organic Agriculture, Nutrient management	9	1	59	21	21	5
21.	Dr. K. Suseendran Assistant Professor	20	Nutrient management and Integrated weed management	6	-	34	10	17	1
22.	Dr. R. Krishnamoorthy Assistant Professor	20	Organic Agriculture, Commercial crop	5	-	10	-	1	1
23.	Dr. S. Krishna Prabu Assistant Professor	19	Nutrient management	6	-	84	10	52	9
24.	Dr.M.SaravanaPeruma l Assistant Professor	19	Irrigation management and crop	8	-	21	2	8	-

			production						
25.	Mr. S.R. Vinod Kumar Assistant Professor	19	Soil fertility, Cropping system	7	-	18	-	6	-
26.	Dr. G. Murugan Assistant Professor	19	Weed science, Farm mechanization	7	-	16	2	11	1
27.	Dr. R. Rex Immanuel Assistant Professor	19	Natural resource management (degraded agro-eco system Rehabilitation), Farming systems research	7	-	42	14	30	2
28.	Dr. P. Stalin Assistant Professor	19	Cropping system and integrated nutrient management	7	-	34	6	2	1
29.	Dr. P. Anandan Assistant Professor	18	Nutrient management	8	-	20	7	2	2
30.	Mr. K.P. Senthilkumar Assistant Professor	18	System of Rice Intensification	9	-	-	2	-	-
31.	Dr. K. Arivukkarasu Assistant Professor	17	Weed science	8	-	5	2	6	1
32.	Dr. C. Ravikumar Assistant Professor	16	Nutrient management	2	-	40	5	23	3
33.	Dr. S. Jawahar Assistant Professor	16	Nutrient management	8	-	146	21	28	6
34.	Dr. R. Gobi Assistant Professor	16	Crop production and Agricultural meteorology	9	-	23	3	13	-

35.	Dr.A.Balasubramanian Assistant Professor	16	Crop production, Nutrient management	8	-	22	3	13	-
36.	Dr.S.Kalaisudarson Assistant Professor	16	Weed management	6	-	12	-	13	2
37.	Dr. G. Sivakumar Assistant Professor	20	Dryland farming, Organic farming	8	-	13	2	11	3
38.	Dr.A.P.SrinivasaPeru mal Assistant Professor	16	Weed management, crop cultivation	7	-	12	3	10	-
39.	Dr. A. Karthikeyan Assistant Professor	14	Weed management, Nutrient Management, Sugarcane production technology	5	-	11	26	3	2
40.	Dr.G.B. Sudhagar Rao Assistant Professor	14	Nutrient Management, crop production	6	-	46	10	13	8

**Awards/ Recognitions & Abroad visits of the Faculty members (2017-2022)**

Sl. No.	Name of the Faculty	Awards/Recognitions	Countries visited & purpose
1.	Dr.Rm.Kathiresan	Heroes of Indian Agriculture (MSIAA 2017) Award AIASA Harit Puraskar Award, 2018	Nepal (2018) - Project discussion
2.	Dr. R. Raman	Academic Excellence Awards 2021	Japan (2019) - International conference Srilanka (2019) – Expert member visit
3.	Dr.S.Manimaran	Outstanding Agronomist Award by Green Agri Professional Society, Dhanbad, 2019 Star performer, Career college, Bhopal,MP 2021 Best Researcher – Weed Management, 2021	Sri Lanka (2018) - International conference

4.	Dr.M.Thiruppathi	Young Scientist Award, 2019 Distinguished Scientist Award, 2021	Thailand (2019) - International conference
5.	Dr.P.Sudhakar	First price for Best poster presentation,2017 Excellence in research award by Green Agri Professional Society, Dhanbad, 2019 Recognition Award for the services rendered in release of AU1- GSR Variety, 2021 National Best Scientist Award 2021 in Agronomy M.S. Swaminathan Award, 2022 ICETMR, 2022	Sri Lanka (2018) - International conference
6.	Dr. C. Kalaiyaran	Best Teacher Award, 2022	
7.	Dr.G. Baradan	Best Scientist Award 2018 Distinguished Scientist Award, 2019 Best researcher award by ICEACBS-2020 Best oral presentation in international e- conference, 2021 National Best Researcher Award 2021 Catch of the Day Competition Winner, 2021 Dr. Rajendra Singh Paroda Award 2022	Sri Lanka (2018) - International conference
8.	Dr.S.Babu	Best oral presentation award, 2019 Best Paper Award, 2020 Best Paper Award, 2020	
9.	Dr.N. Ramesh	Best Scientist Award by PEARL foundation, 2020 Dr.AP.J. Abdul kalam Research excellence Award, 2021	
10.	Dr. S. Ramesh	Outstanding Scientist award,2019 Best Researcher Award, 2021 National Best Researcher Award – 2021 Outstanding Agronomist Award, 2021 Best Scientist Award, 2022	
11.	Dr S. M. Suresh Kumar	Scientist of the year award, 2019 Best Scientist award, 2019 Best Scientist award, 2020 Best oral presentation award, 2021 Certificate of Star Performer, 2021 Best Researcher award, 2021 Best and Creativity Award, 2022	Sri Lanka (2018)- International conference
12.	Dr.S. Elankavi	Best Researcher Award, 2020	

13.	Dr. J.Nambi	Distinguished Scientist Award, 2018 Best Associate Professor Award, 2020 Award of Recognition, 2020 Scientist of the year Award, 2021 Best Oral Presentation Award, 2021	
14.	Dr. D.Kumari Manimuthu Veeral	Best researcher Award, 2018 Best scientist Award, 2019	
15.	Dr. K. Suseendran	Excellence in Research Award, 2019 Best Researcher Award, 2019. Special Recognition under Outstanding Scientist by AIRF, 2019	
16.	Dr.M. Saravanaperumal	Best Scientist Award, 2020	
17.	Dr. R. Rex Immanuel	Outstanding Agronomist Award by Green Agri Professional Society, Dhanbad, 2019 Excellence in Research Award, Puducherry, 2020	
18.	Dr. P.Stalin	Distinguished Scientist Award, 2019 Excellence in Teaching Award, 2019 Best Oral Presentation Award, 2019 Best Researcher Award, 2020	
19.	Dr. P.Anandan	Best mentor award, 2020 Best oral presentation, 2020	
20.	Dr. K. Arivukkarasu	Outstanding Scientist, 2019 Adarsh Vidya Saraswathi Rastriya Puraskar (National Award of Excellence 2019) Best scientist Award, 2020 Young professional Award, 2020 Best Young Scientist Award, 2021 Best oral presentation award, 2021 Nation Builder Award-2021 National Education Excellence Acheivers Award 2022 Fellow- Bose science society, 2022	
21.	Dr. C. Ravikumar	Best oral presentation, 2019 Best Paper Award, 2021 Best Faculty Award, 2022	
22.	Dr.S.Jawahar	Best Researcher Award, 2018 Outstanding Scientist Award – Arunai International Research Foundation, 2019	

		International Highest Publication for the year, 2020 Dr. CV Raman International Innovative Research Award	
23.	Dr.R.Gobi	Young Scientist Award by Madhumitha foundation, 2019 Excellent Paper Award, 2017	
24.	Dr.A. Balasubramaniam	Excellence research Award by Madhumitha foundation, 2019 Best poster presentation Award, Annamalai University, 2020	
25.	Dr. S. Kalaisudarson	Best Researcher State Award, 2019 Best researcher Award – Puducherry, 2020	
26.	Dr. G. Siva Kumar	Excellence in Teaching Award, 2019 Best Researcher, 2021 World book of records *Longest Intl. Conference of 150 hours non stop presentation, 2020	
27.	Dr.AP. Srinivasa Perumal	Excellence in teaching award by SIRI Society, 2019 Best researcher state award by Bahujana Sahitya Academy, 2019 Excellence in Research Award, Puducherry, 2020	
28.	Dr. A. Karthikeyan	Best oral presentation Award - Life Science Society of Hyderabad, 2019	
29.	Dr. GB. Sudhagar Rao	Best paper award, 2019 Indo Asian best agronomist award, 2020	

**List of funded projects (2017 to 2022)**

	<b>Type of Projects</b>	<b>Total out lay (in Lakh Rupees)</b>
A	Government funded projects	329.87
B	Industrial funded projects	332.41
	<b>Grand Total</b>	<b>662.28</b>

<b>Sl. No.</b>	<b>Title of the Project</b>	<b>Name of the Principal Investigator/ Co-Investigator</b>	<b>Period</b>	<b>Sponsoring Agency</b>	<b>Amount Sanctioned (in Lakh Rupees)</b>
1	Annamalai Rice + Fish + Poultry Farming System for Improving Nutrition and Livelihoods of Small farmers in Nepal	Dr. RM. Kathiresan & Mr. Badri Narayan Chaudri, CAA, Nepal (Along with Interdisciplinary a team of 13 scientists)	2017-2019	USAID & IKP	120.00
2	Agronomic Integration of Technologies for Productivity management and Optimal Water Use in Wetlands of Cauvery River Delta	Dr. RM. Kathiresan (With an Interdisciplinary Team of 13 Scientists & Dr. A. Ramesh, IIBAT and Dr. K. Revathi, Ethiraj College for Women, Chennai)	2018-2021	DST	209.87
<b>Total (A)</b>					<b>329.87</b>

Sl. No.	Title of the Project	Name of the Principal Investigator/ Co-Investigator	Period	Sponsoring Agency	Amount Sanctioned (in Lakh Rupees)
1	Bio-efficacy studies of new herbicides viz., Lumax and Atrazine in Maize, Basmati and Bensulfuran in Rice, Atrazine in Sugarcane and Diquat dibromide in Cotton for weed control	Dr. S.Manimaran / Dr. S.Ramesh	2014-2017	Syngenta India Ltd.	7.74
2	Bio-efficacy studies of new herbicides viz., Krismat 75 WG in sugarcane and Atrazine in Maize for weed control with succeeding crop.	Dr. S.Manimaran / Dr. S.Ramesh	2015-2017	Syngenta India Ltd.	3.35
3	Bio efficacy and Phytotoxicity studies of new herbicides viz., CMHH 142 on Rice and CMHH 135 on Soyabean including succeeding crops	Dr. S. Manimaran/ Mr. S.R.Vinodkumar	2015-2017	Coromandel International Ltd.	3.90
4	Evaluation of new herbicide	Dr. RM. Kathiresan	2015-2017	M/s. Anu products Limited	1.00
5	Soil fertility evaluation of bio - efficacy and phytotoxicity of coded herbicides in comparison to standard treatments on transplanted rice as pre- emergence	Dr. K.Thanunathan/ Dr. M.Thiruppathi	2016-2017	Crystal Crop Protection Pvt Ltd., New Delhi.	1.95
6	Bio efficacy trials of coded herbicides on transplanted rice as pre-emergence and late post emergence	Dr. K. Thanunathan/ Dr. M. Thiruppathi	2016-2018	Crystal Crop Protection Pvt Ltd., New Delhi	9.75

7	Bio - efficacy and Phyto toxicity of Flumioxazin 50 % SC against major weeds in sugarcane and its effect on succeeding crop	Dr. P.Sudhakar/ Dr.S.Ramesh	2016-2018	Sumitomo chemicals India Pvt Ltd., New Delhi.	3.90
8	Bio efficacy of Gibberellic acid 0.01% Gr (Progibb) for enhancement of growth & yield in Rice and its effect on succeeding crop	Dr. P. Sudhakar/ Dr. S. Elankavi	2016-2018	Sumitomo chemicals India Pvt Ltd., New Delhi.	3.64
9	Bio efficacy & phytotoxicity evaluation of Flumioxazin 50% SC against major broad leaf & Grassy weeds in groundnut & its effect on succeeding crop	Dr. P. Sudhakar / Dr. S. Ramesh	2016-2018	Sumitomo chemicals India Pvt. Ltd., New Delhi.	3.90
10	Bio-efficacy & phytotoxicity of Paraquat dichloride 24%SL against total weed control in Tea & Coffee	Dr. S.Manimaran, Dr. P.Sudhakar & Dr. N.Ramesh	2016-2019	Syngenta India Ltd.	5.20
11	Bio-efficacy and phytotoxicity of Paraquat dichloride 24%SL against total weed control in Sugarcane & Cotton and its effect on succeeding crop	Dr. S.Manimaran/ Dr.P.Sudhakar & Dr.N.Ramesh	2016-2019	Syngenta India Ltd.	6.80
12	Studies to determine the effect of CAM modulator on the expression, growth and development of field and vegetable crop	Dr.G.Baradhan, Dr.S.M.Suresh Kumar & Dr.S.Murugan	2017-2018	T Stanes & Co.	2.08
13	Evaluation of new herbicide	Dr. RM. Kathiresan	2017-2018	Bharat Rasayan Limited	6.50
14	Evaluation of Bio efficacy & Phytotoxicity of Carfentrazone-ethyl 40% DF against Ludiwigia Parviflora, Digerarvensis, Phyllanthus niruri, Eclipta alba in Direct	Dr. RM. Kathiresan	2017-2018	Bharat Rasayan Limited	1.50

	seeded rice				
15	Evaluation of Bio efficacy & Phytotoxicity of Topramezone 336 G IISC against the weed flora of Maize	Dr. RM. Kathiresan	2017-2018	Bharat Rasayan Limited	1.50
16	Bioefficacy, phytotoxicity and residue trials of Halosulfuron Methyl 75% WG against major weeds of Sugarcane	Dr. S.Manimaran/ Dr. S.Elankavi	2017 -2019	Coromandel International Ltd.	1.69
17	Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	Dr.G.Baradhan, Dr.S.M.Suresh Kumar & Dr.S.Ramesh Kumar	2017-2019	T Stanes & Co.	4.42
18	Bio efficacy studies of Pepto on the growth, metabolism and yield of field rice	Dr.G.Baradhan Dr.S.M.Suresh Kumar & Dr.S.Ramesh Kumar	2017-2019	T Stanes & Co.	1.10
19	“Bio –Efficacy and phyto toxicity evaluation of LAATU premium (Gibberellic Acid 0.001% Gr) as plant growth regulator on growth and yield of rice and its effect on succeeding crop” for two seasons	Dr.P.Sudhakar Dr.S.Ramesh & Dr. B.Sunil Kumar	2017-2019	Sumitomo chemicals India Pvt Ltd.	5.04
20	Bio efficacy and Phytotoxicity trials of Sodium Para-Nitrophenolate 0.3%SL (Plant Growth Regulator) in Rice	Dr.K.Suseendran & Dr.R.Kannan	2017 -2019	M/s NACL Industries Limited, Hyderabad.	2.99
21	Evaluation of bio efficacy of new herbicide Clethodim 12% EC for controlling of grassy weeds in cotton, onion & soybean and its phytotoxicity effect on succeeding crops	Dr. R. Raman	2018 -2019	Deccan fine Chemicals Pvt. Ltd.	7.50

22	Physico-chemical & biological analysis of soil samples of CCP 90072	Dr. M. Thiruppathi	2018-2019	UPL Pvt. Ltd.,	1.00
23	Studies on Bio-efficacy and phytotoxicity of Homobrossionloide 0.04% EC w/w in paddy, groundnut and tomato	Dr.R.Raman	2018 - 2020	Godrej Agrovvet Ltd.,	9.00
24	Bioefficacy and phyto toxicity studies of LATTO for enhancement of growth and yield in tomato and its effect on succeeding crop	Dr.P.Sudhakar& Dr.S.Elankavi	2018-2020	Sumitomo chemicals India Pvt Ltd., New Delhi.	3.90
25	Bio efficacy & phytotoxicity evaluation of LAATU (Gibberllic acid 0.001% Gr) as plant growth regulator on growth and yield of rice and its effect on succeeding crop	Dr. P. Sudhakar, Dr.S. Ramesh & Dr. B.Sunilkumar	2018-2020	Sumitomo chemicals India Pvt Ltd., New Delhi.	5.04
26	Bioefficacy & phytotoxicity of homobrossionloide 0.04% EC w/w inPaddy, Groundnut & Tomato	Dr. R. Raman & Dr.R.Krishnamoorthy	2018-2020	Godrej Agrovvet Ltd.	9.00
27	Bio efficacy & phytotoxicity evaluation of IHCO12 against major weeds in Maize and its effect on succeeding crop	Dr. P. Sudhakar & Dr. S. Elankavi	2018-2020	Indofil Chemicals Ltd, Mumbai.	4.94
28	Bioefficacy, phytotoxicity and residue of Ethalfluralin 36% EC on Cotton against monocot and dicot weeds	Dr. S.Manimaran & Dr. P.Sudhakar	2018-2020	Saraswati Agro Chemicals (India) Pvt. Ltd & Gowan India Ltd.	3.50
29	Studies on bio efficacy on Non crop area & residue effects of GOD-H007 43% SG	Dr. R. Raman & Dr. S. Babu	2018-2020	Godrej Agrovvet Ltd.,	3.00

30	Effect of Active ORG on the nutrient availability, growth, metabolism and yield of Tomato	Dr.G.Baradhan Dr.S.M.Suresh Kumar & Dr.S.Ramesh Kumar	2018-2020	T Stanes & Co.	1.36
31	Effect of WAKS-16 on the nutrient availability, growth, metabolism, and yield in tomato/rice	Dr.G.Baradhan Dr.S.M.Suresh Kumar & Dr.S.Ramesh Kumar	2018-2020	T Stanes & Co.	2.73
32	Bio – efficacy and phytotoxicity evaluation of coded herbicide “CCP – 90072” in comparison to standard treatment on transplanted rice as pre – emergence.	Dr. M. Thiruppathi	2018-2020	Crystal Crop Protection Ltd., Delhi	5.05
33	Evaluation of Bio-efficacy, Phytotoxicity and effect on succeeding crops of Council prime (Triafamone 200 SC) in direct seeded rice	Dr. R.Gobi & Dr.A. Balasubramanian	2018-2020	Bayer CropScience, Trichy	5.07
34	Bio-efficacy and Phytotoxicity evaluation of Ingrain (Abscisic Acid) for enhancement of grain filling and yield in Rice and its effect on succeeding crop	Dr. P.Sudhakar	2018-2020	Sumitomo chemicals India Pvt Ltd., New Delhi	5.07
35	Bio efficacy toxicity evaluation of Glufosinate Ammonium 13.5% SC against weed flora in Grapes & its effect on succeeding crop	Dr. P. Sudhakar	2018-2021	UPL Pvt. Ltd.,	4.44
36	Bio -efficacy and phyto toxicity evaluation of Flumioxazin 50 % SC against major broad leaved and grassy weeds in gram (Chickpea) and its effect on succeeding crops	Dr. P.Sudhakar	2018-2021	Sumitomo chemicals India Pvt Ltd., New Delhi	5.07

37	Evaluation of bio efficacy of silica granules and silixol rice on productivity of rice	S.Jawahar	Jan – June, 2019	Privi Life Sciences Pvt.Ltd., Navi Mumbai	2.25
38	Bio efficacy trials on Orthosulfamuron 50% WG on transplanted rice	Dr. S. Elankavi & Dr. P. Sudhakar	2019-2020	Nichino chemical India Pvt. Ltd.,	2.34
39	Bio efficacy and phytotoxicity evaluation of Orthosulfamuron 0.6% + Pretilachlor 6% GR on transplanted rice and its effect on succeeding crops	Dr. P. Sudhakar & Dr. SM. Suresh Kumar	2019-2021	Nichino chemical India Pvt. Ltd.	4.68
40	Evaluation of bio efficacy of PIX 10006 43% WG against major weeds in transplanted rice and its effect on succeeding crop	Dr. S. Ramesh & Dr. P. Sudhakar	2019-2021	PI industries Ltd, Mumbai	4.00
41	Evaluation of silica-based formulation for their efficacy & phytotoxicity on sugarcane	Dr. S. Babu & Dr. A.Karthikeyan	2019-2021	Advance pesticides, Nashik	1.95
42	Evaluation of silica-based formulation (liquid) and bactericide for their efficacy & Phytotoxicity on (1. Direct seeded rice plus fallow crop of black gram & 2. Transplanted rice plus fallow crop of green gram)	Dr. S. Babu & Dr. A. Karthikeyan	2019-2021	Advance pesticides, Nashik	5.20
43	Evaluation of Bio-efficacy of crop tiger on paddy and sugarcane	Dr.R.Raman	2019-2021	Peptech Bio Science	3.50
44	Bio efficacy & Phytotoxicity of Rinscor + Sofit 310 Ec (Pretilachlor 300 + Flopyrauxifen benzyl 10) against total weed control in wet direct sown rice and its effect on succeeding crop	Dr.S. Manimaran & Dr. G. Baradhan	2019-2021	Syngenta India Ltd.	2.95

45	Bio-efficacy and phyto toxicity of Rinskor+Sofit 310 EC (Pretilachlor 30% w/v +Florpyrauxifen-benzyl 1% w/v) against total weed control in Transplanted Rice	Dr. S.Manimaran / Dr. N.Ramesh	2019-2021	Syngenta India Ltd.,	5.05
46	Evaluating of bio-efficacy of Pix 10006 43% Wg against major weeds in transplanted rice and its effect on succeeding crop	Dr. P.Sudhakar	2019-2021	PI Industries Ltd. Gurgaon	4.00
47	Evaluation of Physico-Chemical and biological analysis of soil samples	Dr. M. Thiruppathi & Dr. R. Rex Immanuel	2020-2021	Crystal crop protection Ltd.	1.00
48	Evaluation of studies on bioefficacy of CROP TIGER on paddy & sugarcane	Dr. R. Raman & Dr.R.Krishnamoorthy	2020-2021	Petech bio science	7.00
49	Bio-efficacy and Phytotoxicity evaluation of flumioxazin 50% SC against mixed weed flora in Tea and non-cropped area	Dr. P.Sudhakar	2020-2022	Sumitomo chemicals India Pvt Ltd., New Delhi	5.46
50	Bio-efficacy trial Carfentrazone ethyl 40% DF against major weeds of Direct seeded of Paddy crop	Dr. M. Thiruppathi	2020-2022	Crystal Crop Protection Ltd., New Delhi	1.65
51	Bio-efficacy trial Bensulfuron methyl 60% DF as post-emergence herbicide against major weeds of transplanted Rice crop	Dr. M. Thiruppathi	2020-2022	Crystal Crop Protection n Ltd., New Delhi	1.65
52	Bio-efficacy trial Bensulfuron methyl 60% DF as pre-emergence herbicide against major weeds of transplanted Rice crop	Dr. M. Thiruppathi	2020-2022	Crystal Crop Protection Ltd., New Delhi	1.65

53	Studies on Bio Efficacy and photo toxicity of Direct Seed Rice and carry over and residue effects GOD H008	Dr. R. Raman	2020-2022	Godre Agrovet Ltd.	4.0
54	*Effect of Sea weed and humic acid extract (Talwar Gold) on the growth and yield of black gram	Dr.G.Baradhan & Dr.S.M.Suresh Kumar	2021-2022	M/s. Gentech Crop Sciences Private Limited, Hyderabad	1.05
55	Bio efficacy evaluation of Bio stimulant Macarena on Soybean, Tomato & Cotton and Brique on Chilli and Tomato	Dr. R. Raman	2021-2022	UPL Ltd.	10.5
56	Bio efficacy evaluation of Bio stimulant Gaxy on Cotton & Grapes and Opteine on Soybean, Groundnut and Pilantus on Tomato	Dr. R. Raman	2021-2022	UPL Ltd.	10.5
57	Phytotoxicity Evaluation of herbicides GPH 1521 and GPH 1621 on Soybean	Dr. R. Raman	2021-2022	UPL Ltd.	15
58	Bio efficacy evaluation of Bio stimulant Biosurge on Paddy, Soybean and Cotton	Dr. R. Raman	2021-2022	UPL Ltd.	6.3
59	Bio efficacy and phytotoxicity evaluation of herbicide GPH 1821 on Onion	Dr. R. Raman	2021-2022	UPL Ltd.	7.5
60	Bio efficacy evaluation of Bio stimulant – Bioclassic on Chilli and Soybean	Dr. R. Raman	2021-2022	UPL Ltd.	4.2
61	Standardization of bone sludge compost for maximizing the yield of field crops	Dr. G.Sivakumar	2021-2022	Pioneer Jellice India Pvt. Ltd, Cuddalore	5.46
62	*Bio - efficacy and phyto toxicity evaluation of Imazosulfuron 1% + Pretilachlor 8% GR against grassy weeds, sedges and broad-leaved	Dr. P.Sudhakar	2021-2023	Sumitomo chemicals India Pvt Ltd.,	5.33

	weed prevalent in rice crop and its effect on succeeding crop for two seasons”			New Delhi	
63	Bio-efficacy and Phytotoxicity Evaluation of coded Herbicide CCP-8175 on Onion as Post-emergence (25-30 days after transplanting) in Onion zones of Tamil Nadu	Dr. M. Thiruppathi	2021-2023	Crystal Crop Protection Ltd., New Delhi	4.0
64	Bio-efficacy and phtotoxicityevaluation of “Mesotrione solo (Callisto)” against total weed control in sugarcane and its effect on succeeding crop”	S.Manimaran C.Ravikumar	2021-2024	Syngenta India Ltd.,	5.00
65	Evaluation Bio-efficacy and Phytotoxicity evaluation of Glyphosate 41% SL IPA Salt Herbicide in comparison to standard treatment on tomato and Mango Orchard	S. Babu	2021-2024	Crystal crop protection	9.60
66	Evaluation of Soil Physico-Chemical study for Carfentazone ethyl 40% DF.	Dr. M. Thiruppathi	2022-2023	Crystal Crop Protection Ltd., New Delhi	1.20
67	Evaluation of the bioefficacy of Dr.ROOT on the yield of onion	Dr.G.Baradhan & Dr.S.M.Suresh Kumar	2022-2023	T Stanes & Co Ltd.	1.56
68	Bio-efficacy and phytotoxicity evaluation of BiovitaX (Granule) on growth, yield and quality of rice” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s PI Industries Ltd. Gurgaon	2.275
69	Bio-efficacy and phytotoxicity evaluation of BiovitaX (Liquid) on growth, yield, and quality of rice” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s PI Industries Ltd. Gurgaon	2.275
70	Bio-efficacy and phytotoxicity evaluation of Humisol on growth, yield, and quality of rice” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s PI Industries Ltd. Gurgaon	2.275

71	Bio-efficacy and phytotoxicity evaluation of SIAPTON 10L on growth, yield, and quality of Grapes” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s Jivagro Ltd. Mumbai	2.275
72	Bio-efficacy and phytotoxicity evaluation of SIAPTON 10L on growth, yield, and quality of rice” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s Jivagro Ltd. Mumbai	2.34
73	Evaluation of Bio efficacy for a post emergence herbicide 2,4-D Sodium Salt 95% against weed flora in Sugarcane	S.R. Vinod Kumar	2022-2024	Atul India Ltd., Gujarat	6.5
74	Testing new herbicide in rice for its Bio-efficacy, phytotoxicity and residue analysis	S.R. Vinod Kumar	2022-2024	Atul India Ltd., Gujarat	2.0
75	Bio-efficacy, phytotoxicityand residue studies of CMHH 142 against weeds in Paddy in Transplanted and Direct seeded rice and its effect on succeeding crop	S.Manimaran / G.Baradhan	2022-2025	Coromandel International Ltd.,	6.66
76	Bio-efficacy, phytotoxicityand residue studies of CIX – 4001 against weeds in Paddy in Transplanted and Direct seeded rice and its effect on succeeding crop	S.Manimaran / S.M.Sureshkumar	2022-2025	Coromandel International Ltd.,	6.66
<b>Total (B)</b>					<b>332.41</b>

#### 6.4.4. Classrooms and Laboratories

The Department has well equipped high-tech classroom and Instrument laboratories with wide range of instruments and provide hassle free experience in learning and research. Nine staff rooms and a separate storeroom is available in addition to the facilities furnished.

Sl. No.	Facility	No.	Area (sq. ft)	Description
1.	Prof. G Kuppusamy PG hall	1	625	A fully air-conditioned classroom with smart TV (android) along with the high-tech hall with 50 numbers of seating capacity.
2.	PG - Analytical Lab (Capacity - 20)	1	800	Laboratory with all basic instrumentation facilities viz., Micro-kjeldahl, 3 Macro- kjeldahl, 3 Soxhlet apparatus, 1 Automatic nitrogen/ Protein estimation system. 1 Centrifuge 1
3.	PG - Instrumentation Lab (Capacity - 15)	1	300	pH meter, 1 EC meter, 1 Atomic Adsorption Spectrophotometer, 1



PG – Analytical Lab

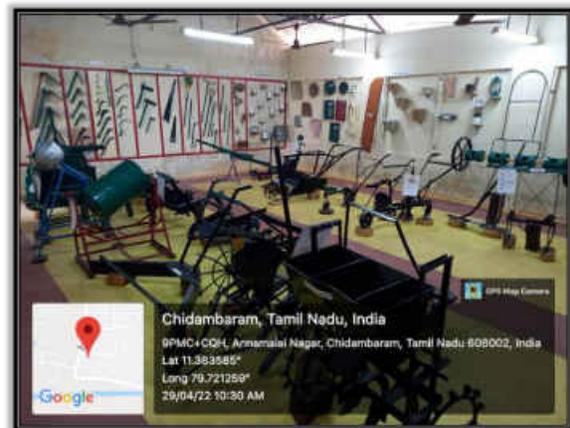


Prof. G Kuppusamy PG hall

Sl. No.	Facility	Number	Area (sq. ft)	Description
4.	Meteorology Observatory Museum Observatory	1	252	Climatological atlas, Maximum and minimum thermometer 3 Wet and dry thermometer 2 Soil thermometer 3 Grass minimum thermometer 1 Whirling psychrometer 1 Dew Gauge 1 USWB open pan evaporimeter 1 Hygrometer 1 Thermo hygrograph 1 Sunshine recorder 1 Wind vane 1 Anemometer and Model observatory 1
5.	Farm machinery lab	1	600	To identify different tools and implement models.
6.	Weed Science & Irrigation Lab	1	600	To identify different Weeds, Herbicides, Sprayers, Irrigation models, Soil moisture measuring devices etc.,
7.	Agri-input Museum	1	800	Exhibits of seeds of important field crops, fertilizers, manures and other inputs



Meteorology Observatory Lab



Farm tools and implements Lab

Sl. No.	Facility	Number	Area (sq. ft)	Description
8.	Experimental farm facility	1	29.64 ha	The Experimental Farm is meeting the teaching and research requirements of both the under-graduate and post-graduate students in various disciplines, besides extending facilities for the conduct of research programs to all the faculty students and scholars for imparting practical aspects in farming and carrying out the research works.
9.	Grass farm	1	6.68 ha	Sewer collected from the hostels and quarters of the University Campus used for irrigation after proper treatment.
10.	Crop Cafeteria	1	0.5 acre	Live specimens for important field crops
11.	Pot cultureyard	1	1,000	Pot culture studies are conducted for preliminary research work as well as for student study purpose.
12.	Poly house	1	300	Poly house is used to grow the crop under control conditions for the research purpose.
13.	1) Farm office, 2) Tractor shed, 3) Fertilizer Godown	3	1305 800 1891	Utilized for student study and research purpose

Sl. No.	Facility	Number	Area (sq. ft)	Description
1.	Prof. Rm Alagappan Department Library	1	625	The Department Library is provided with 1477 text and reference books, 614 PG, 74 Ph.D. and 1 D.Sc thesis, more than 12 national and 15 international journals with 100 bound back volumes, journals, UG project report 400. E-Journals – 226, Complimentary annual report 37, Complimentary journal 40, CD- 91.
2.	Prof. A R Laxmanan farmers Training Hall	1	450	Conducting training to the Government Agricultural Officers and farmers. (Seating capacity – 60)
3.	Prof. Rm Kathiresan Conference Hall	1	495	Conducting meeting with faculty, dignitaries & progressive farmers. (Seating capacity – 25)



Prof. Rm Kathiresan Conference Hall



Prof. Rm Alagappan Department Library

#### 6.4.5. Conduct of Practical and Hands-On-Training

Students are engaged directly in the different field work *viz.*, methods of ploughing, sowing, transplanting, fertilizer application, pressurized irrigation systems, handling laboratory equipment, mechanized agriculture and using meteorological instruments for observation and recording. Models on farming systems, agro-forestry, watershed and irrigation methods are developed by the students for their course curriculum. Herbarium collection on crop and weed samples are done for the respective courses. Term papers and assignments are periodically given and evaluated. Field and industrial visits are regularly scheduled for every semester as part of the curriculum.



**NATIONAL AGRO FOUNDATION (NAF)  
- Field demonstration about soil sampling**



**Hands-on –Training - Field Preparation**

#### 6.4.6. Supervision of students in PG programmes

During their research, each Post Graduate student shall have an advisory committee which is formed before end of the first semester to help the student in carrying out the assigned thesis research program. The advisory committee shall comprise of a chairman and two members, of which one member shall be from the major Discipline and another from any other Discipline in the related field of thesis research. The advisory committee will counsel the student in the selection of major and minor courses and seminar topics. The research student is continuously monitored by periodical review of work done and verification of data. At the end of each semester the evaluation of research is done by the advisory committee members.

Sl. No.	No. of PG recognized teachers	Academic year	Admitted Students	Students-Teacher ratio
1	39	2016-2017	35	1:1.1
2	39	2017-2018	33	1:1.2
3	39	2018-2019	31	1:1.3
4	39	2019-2020	25	1:1.6
5	39	2020-2021	29	1:1.3
6	39	2021-2022	30	1:1.3

### M.Sc. (Ag.) Agronomy Dissertations

Sl. no.	Name of the guide	Name of the student	Year	Title of the thesis
1.	Mr. S.R. Vinod Kumar	Balaji. P	2017	Yield maximization strategies for irrigated blackgram Cv. ADT 3
2.	Dr. G. Murugan	Bhagavathi. M.S	2017	Study on irrigation practices in different rice ecosystems
3.	Dr. P.Stalin	Darthiya. M	2017	Studies on integrated plant nutrient supply system for augmenting rice production in tailend area of Cauvery delta region
4.	Dr. K. Arivukkarasu	Gudapati Ashoka Chakravarthy	2017	Studies on weed management in irrigated maize
5.	Dr. S. Elankavi	Indhu. S	2017	Weed management for yield maximization in irrigated blackgram
6.	Dr. S.M. Suresh Kumar	Krishna. S	2017	Studies on integration of inorganic fertilizers and organic granules in hybrid maize ( <i>Zea mays</i> L.)
7.	Dr. S. Jawahar	Naveen Kumar. M.	2017	Response of maize to silicon fertilization
8.	Dr. R. Gobi	Naveenkumar. S	2017	Agronomic approaches for improving growth and yield of low land rice
9.	Dr. A. Balasubramanian	Nivedidhaa. B.S.R	2017	Studies on the various agronomic strategies to improve the productivity and economic advantages on hybrid maize
10.	Dr. G. Sivakumar	Priyanka. A	2017	Impact of integrated nutrient management in increasing the production of rice
11.	Dr. K. Dhanunathan	Shobana. M.	2017	Effect of chelated nutrient on the growth and yield of irrigated greengram
12.	Dr. Rm. Kathiresan	Sornalatha. N	2017	Integrated weed management in rice farming system
13.	Dr. M. Ganapathy	Sowmya. S	2017	Effect of different sulphur sources on the seed yield and oil content of sesame
14.	Dr. S. Natarajan	Srinivasu. V	2017	Effect of spacing and nutrient sources on system of ragi intensification (SRI)
15.	Dr. V. Imayavaramban	Srujan. G.V.	2017	Studies on split applications of N & K under varied integrated nutrient management approaches in groundnut ( <i>Arachis hypogea</i> L.)
16.	Dr. A. Sundari	Subash Chandran. S	2017	Response of irrigated maize to new herbicides
17.	Dr. S. Kandasamy	Thuyavanan. S	2017	Effect of nutrient management on the productivity and profitability enhancement of maize ( <i>Zea mays</i> L.)
18.	Dr. M. Meyyappan	Venkateshprasath. G	2017	Nutrient management in rice
19.	Dr. S. Babu	M.Gokulraj	2017	Studies on the effect of soil and foliar application of Nitrogen, Phosphorus and

				potassium fertilizers on the performance of Hybrid Maize ( <i>Zea Mays L.</i> )
20.	Dr. G.B. Sudhagar Rao	P. Sangameshwari	2017	Integration of poultry manure with chemical fertilizers on yield maximization of maize ( <i>Zea mays L.</i> )
21.	Dr. J.Nambi	J. Kilintonraja	2017	Weed Management in Redgram Based Intercropping system
22.	Dr. R. Rex Immanuel	K. Boopathi	2017	Studies on sustainable fodder Azolla production technology under resource constraint situation
23.	Mr. K.P. Senthil Kumar	Guda. Bhargavi	2017	Irrigation Regimes and potassium levels on the performance of rice
24.	Dr. P. Anandhan	K. Girija	2017	Effect of different depth of planting and <i>Salvinia molesta</i> as nutrient source for rice
25.	Dr. R. Raman	K Suganya	2017	Effect of spacing and nutrient management on the growth and yield of hybrid maize ( <i>Zea mays L.</i> )
26.	Dr.Rm. Kathiresan	C Vinothkumar	2018	Impact of organic manures on rice weed control
27.	Dr.K Thanunathan	S. Vijayakumar	2018	Foliar feeding for augmenting the productivity of rice fallow blackgram
28.	Dr.M. Ganapathy	Ariraman R	2018	Effect of Sulphur nutrition on the yield components, yield and oil content of summer groundnut in loamy soils
29.	Dr.S. Manimaran	I. Gokulakannan	2018	Evaluation of different weed management practices on maize
30.	Dr. Thiruppathi	R. Kavitha	2018	Coded herbicide on transplanted rice.
31.	Dr. P. Sudhakar	R. Anupriya	2018	Efficacy of gibberellic acid on yield maximization in rice
32.	Dr.C. Kalaiyaran	B.Kalaivani	2018	Response of sunflower –legume intercropping system to different fertility sources
33.	Dr. G.Baradhan	A. Muthhamizharasi	2018	Studies on graded dose of NPK with different granular organic manures in low land rice
34.	Dr.S. Babu	U. Ragupathiraja	2018	Productivity and profitability enhancement of hybrid maize ( <i>Zea mays L.</i> ) through weed management.
35.	Dr.N. Ramesh	P. Nivetha Devi	2018	Evaluation of new herbicides for weed management in hybrid sorghum
36.	Dr.S. Ramesh	S. Keerthana	2018	Strategies for yield enhancement in traditional rice varieties ( <i>Oryza sativa</i> )
37.	Dr. S.M. Suresh kumar	V. Saravanan	2018	Effect of different organic manure granules with graded levels of NPK in hybrid maize
38.	Dr.S Elankavi	S Raveendran	2018	Methods of sowing and foliar nutrition on yield enhancement in blackgram

39.	Dr.J.Nambi	K Sandhiyadevi	2018	Evaluation of spacing and weed management practices in system of ragi intensification
40.	Dr. D. Kumarimanimuthu veeral	P.Kalaimathi	2018	Studies on direct and residual effects of agro industrial wastes and biofertilizers in groundnut ( <i>Arachis hypogea</i> L.) Cv. VRI 2 and succeeding finger millet ( <i>Eleusine coracana</i> L.) Cv. Co 14
41.	Dr.K.Suseendran	D.Kalaiselvi	2018	Performance of newer herbicides for weed management in irrigated groundnut ( <i>Arachis hypogaea</i> L)
42.	Dr.R.Krishnamoorthy	A.Kaviarasan	2018	Effect of organic foliar nutrition on the growth and yield of cowpea ( <i>Vigna unguiculata</i> L.)
43.	Dr.S. Krishnaprabu	P. Keerthanan	2018	Response of irrigated blackgram to integrated nutrient management
44.	Dr. M.Saravana Perumal	C. Mohanasundar	2018	Studies on integrated nutrient management in rice
45.	Mr.S.R. Vinod Kumar	S. Parthiban	2018	Productivity and profitability enhancement through nutrient management practices in rice
46.	Dr. G. Murugan	Paulraj suryakala	2018	Study on weed management with new generation herbicides in transplanted rice
47.	Dr.R. Rex Immanuel	Preethi, K	2018	Sustainable nutrient management in groundnut
48.	Dr. P. Stalin	B. Priyanka	2018	Productivity and yield maximization of baby corn ( <i>Zea mays</i> L.) As influenced by integrated nutrient management practices and foliar application
49.	Dr. P. Anandan	M.Radhakrishnan	2018	Performance of rice varieties in different dates of transplanting at late samba season
50.	Mr.K.P. Senthilkumar	Rajeshwaran R	2018	Agronomic strategies for maximizing yield of Traditional rice (Kuzhiyadi chain)
51.	Dr.K.Arivukkarasu	J.R.Ramachandiran	2018	Evaluation of early post emergence herbicides application on transplanted rice
52.	Dr.C.Ravikumar	A.Snehaa	2018	Studies on the effect of different organic manures on the productivity of organic baby corn in clay soil ( <i>Zea mays</i> . L.)
53.	Dr.S.Jawahar	A. Sowbika	2018	Response of low land rice to silicon sources
54.	Dr.R.Gobi	G. Srinivasan	2018	Studies on yield maximization with nutrients and nipping in irrigated redgram
55.	Dr. A. Balasubramanian	M. Susithra	2018	Yield maximization with nutrient management and nursery practices on transplanted irrigated redgram ( <i>Cajanus cajan</i> L.)
56.	Dr.S.Kalaisudarson	K.K.Suvain	2018	Evaluation of irrigation scheduling and weed management practices on growth and yield of

				cowpea.
57.	Dr. G.sivakumar	R.Tamilselvan	2018	Effect of sustainable nutrient management strategies to enhance the production potential of sorghum
58.	Dr.A.P.Srinivassaperuma 1	R.Thamizhmani	2018	Evaluation of nutrient management techniques for production potential of fodder sorghum Co(fs)29
59.	Dr.A. Karthikeyan	J. Vanathi	2018	Evaluation of foliar application of nutrients on the productivity enhancement of blackgram Cv.vamban 6
60.	Dr.V. Imayavaramban	Ajitha .P	2019	“Studies on yield enhancement in hybrid maize ( <i>Zea mays</i> L.)”
61.	Dr.S. Natarajan	Abinaya K	2019	Studies on the performance of finger millet ( <i>Eleusine coracana</i> L.) With certain intercrops using SRI principles
62.	Dr.A.Sundari	M.Ambika	2019	Weed management in irrigated sesame ( <i>Sesamum indicum</i> L.)
63.	Dr. R. Raman	R Anusha	2019	Effect of nutrient management on traditional pearl millet varieties
64.	Dr. D. Kalyanasundaram	E Arthi	2019	Agronomic practices for yield maximization of direct sown rice under water constraint situation
65.	Dr. S. Kandasamy	M Arthy	2019	Effect of nutrient management practices on growth and yield enhancement in maize ( <i>Zea mays</i> L.)
66.	Dr.M.Meyyappan	Balaji.E	2019	Effect of foliar application of organic and inorganic preparations on the growth and yield of rice
67.	Dr.S.Manimaran	Elakkiya Priya.P	2019	Effect of foliar nutrition on growth and yield of irrigated greengram
68.	Dr. Thiruppathi	D. Janani	2019	Nutrient management for maize based intercropping under maize – rice – blackgram sequence
69.	Dr. P. Sudhakar	D. Bhuvaneshwari	2019	Influence of various irrigation levels and stress management tools on enhancement of productivity in black gram
70.	Dr.C.Kalaiyaran	N.Indiyanraj	2019	A study to mitigate drought ridden crop through foliar fertilization
71.	Dr.G.Baradhan	Mr.A.Joyson	2019	Effect of sulphur fertilization and foliar nutrition on growth and yield of black gram
72.	Dr.S. Babu	S. Sharmi	2019	Evaluation of new generation herbicides on productivity and profitability enhancement of transplanted rice.
73.	Dr.N. Ramesh	M. Kalaimani	2019	Efficacy of some promising herbicides on hybrid pearl millet ( <i>Pennisetum glaucum</i> (L) R. Br.)

74.	Dr.S.Ramesh	M.Jayaraj	2019	Influence of organic manures and foliar nutrition on productivity enhancement of irrigated blackgram
75.	Dr. S.M. Suresh Kumar	R. Suganya	2019	Effect of sulphur application with organic foliar nutrition in irrigated blackgram
76.	Dr.S Elankavi	K Srinivasan	2019	Influence of seed hardening and foliar nutrition of green gram under rainfed conditions
77.	Dr. J.Nambi	M Suderson Pradeep	2019	Weed management practices for enhancing the productivity of zero tillage maize grown under rice fallow condition
78.	Dr. D. Kumarimanimuthu veeral	Giri nayakanti	2019	Yield maximization of sesame ( <i>Sesamum indicum</i> L.) Cv. Tmv3 through organic practices
79.	Dr.K.Suseendran	M.Haripriya	2019	Studies on the performance of rice to the foliar application of plant growth regulators
80.	Dr.R.Krishnamoorthy	J.Jayaprakash	2019	Studies on the effect of seed treatment and organic foliar nutrition on the growth and yield of traditional rice variety (poongar) ( <i>Oryza sativa</i> L.)
81.	Dr.S. Krishnaprabu	S. Jeevabharathi	2019	Studies on improving production potential of maize through integrated nutrient management
82.	Dr. M.saravana Perumal	H. Johnson	2019	Weed management in maize ( <i>Zea mays</i> L.)
83.	Dr.S.R. Vinod Kumar	M. Kowsalya	2019	Productivity enhancement strategies through nutrient management practices in rice var.co-47
84.	Dr. G. Murugan	S. Krithika Kumari	2019	Study on weed management in maize
85.	Dr.R. Rex Immanuel	Mullaivandan, V	2019	Integrated nutrient management for maximizing the yield of maize under <i>utera</i> cropping system
86.	Dr. P. Stalin	P. Poovarasana	2019	Influence of foliar nutrition on the performance of blackgram under irrigated condition
87.	Dr. P. Anandan	M Sasikala	2019	Biointensive complementary cropping system in north western zone of Tamil Nadu
88.	Mr. K.P. Senthil Kumar	S. Shobekadevi	2019	Response of traditional rice Cv. Poongar under organic nutrient management
89.	Dr.K.Arivukkarasu	T.Srinithan	2019	Performance of early post emergence herbicides weed management in transplanted rice
90.	Dr.S.Jawahar	P.V. Thangaraj	2019	Response of groundnut to sulphur and silicon nutrition in coastal saline soil
91.	Dr.R.Gobi	S. Uma	2019	Studies on integrated nutrient management in cowpea

92.	Dr. A. Balasubramanian	Yuvaraj	2019	Integrated nutrient management on growth and yield of hybrid maize ( <i>Zea mays</i> L.)
93.	Dr.G.B.Sudhagar Rao	E.T.Vignesh	2019	Response of lowland rice to effective use of organic and inorganic amendments
94.	Dr.Rm. Kathiresan	M Deepa	2020	Impact of organic manures and intercrops on weed management in maize
95.	Dr.M. Ganapathy	S Devi	2020	Effect of integrated nutrient management on the yield of traditional rice varieties
96.	Dr.V.Imayavaramban	Gayathri. S	2020	Intergrated nitrogen management for augmenting the productivity of rice
97.	Dr.A.Sundari	R.Gowtham	2020	Response of sweet corn to biostimulants through fertigation and foliar spraying
98.	Dr. R. Raman	S Gowtham	2020	Impact of integrated nutrient management on growth and yield of groundnut
99.	Dr.D. Kalyana Sundaram	S Harini Sri	2020	Enhancing the productivity of rice fallow cotton through foliar nutrition and hormonal application
100.	Dr.S. Kandasamy	B Janani	2020	Impact of foliar nutrition on yield maximization irrigated blackgram
101.	Dr.M.Meyyappan	S.Kauya	2020	Agronomic strategies to improve the yield of rice
102.	Dr.S.Manimaran	Naveen Prasath.P	2020	Effect of foliar application on growth and yield of black gram
103.	Dr. Thiruppathi	R. Princy Raveena	2020	Efficacy evaluation of coded herbicide CCP 90072 in comparison to standard treatments for weed control in transplanted rice.
104.	Dr. P. Sudhakar	S. Kumaravel	2020	Effect of different plant growth regulators on growth and yield of transplanted rice
105.	Dr.C.Kalaiyaran	M.Pragatheshvaran	2020	Studies on different planting geometry and sulphur fertilization in sunflower – greengram intercropping
106.	Dr.G.Baradhan	M.Saranya	2020	Effect of different levels of fertilizers and organic manures on growth and yield of hybrid maize
107.	Dr.S. Babu	S. Swathi	2020	Productivity enhancement of direct-seeded rice through weed management practices.
108.	Dr.S.Ramesh	G.Rama Prabavathi	2020	Productivity enhancement through enriched organic compost and foliar nutrition on irrigated ragi
109.	Dr.S Elankavi	K Lavanya	2020	Effect of graded doses of fertilizer and foliar nutrition on rice
110.	Dr. D. Kumarimanimuthu veeral	T. Naveen	2020	Studies on organic source for sustainable yield and soil health in ragi ( <i>Eleusine coracana</i> ) cv. Co 9
111.	Dr.K.Suseendran	S.Nidheesh	2020	Studies on the evaluation of different

				herbicides for weed control in irrigated blackgram ( <i>Vigna mungo</i> )
112.	Dr.R.Krishnamoorthy	V.Priyadarsini	2020	Effect of age of seedlings and nutrient management on the growth and yield of redgram
113.	Dr.S. Krishnaprabu	D. Ranjithkumar	2020	Response of green gram to integrated Nutrient management practices
114.	Dr. M.Saravana Perumal	A. Sangothari	2020	Strategies for yield maximization in rice fallow black gram through foliar application
115.	Dr. G. Murugan	T. Sivalingam	2020	Study on weed management in drip irrigated sunflower
116.	Dr.R. Rex Immanuel	Sivasakthi, K	2020	Agro-techniques for sustainable productivity of groundnut + redgram intercropping system
117.	Dr. P. Stalin	S. Sowmiya	2020	Integrated nutrient management in hybrid maize
118.	Dr. P. Anandan	T. Sureshkumar	2020	Evaluation of groundnut based intercropping system model for coastal sandy soil of cuddalore district
119.	Mr. K.P. Senthil Kumar	S Udhayan	2020	Agronomic strategies for yield maximization of traditional rice (Cv. Poongar) under direct sown puddled condition
120.	Dr.K.Arivukkarasu	J.K.Vidhya Bharathi	2020	Chemical weed management in transplanted ragi
121.	Dr. G.sivakumar	R. Arunprasath	2020	Effect of integrated nutrient management in ensuring effective yields in maize
122.	Dr.A.P.Srinivassaperumal	S.Arun	2020	Effect of cultural and chemical weed management practices in irrigated cowpea ( <i>Vigna unguiculata</i> L.)Co (cp)7
123.	Dr.A. Karthikeyan	S. Arunadevi	2020	Evaluation of new generation herbicides on growth and yield of blackgram
124.	Dr.G.B.Sudhagar Rao	V.Balalachandrakumar	2020	Agronomic biofortification of rice through zinc and iron fertilization
125.	Dr.A.Sundari	Ponmathi. R	2021	Chemical and cultural weed management in irrigated pearl millet
126.	Dr. R. Raman	S Prakash	2021	Effect of organic foliar nutrition on the growth and yield of groundnut ( <i>Arachis hypogaea</i> L.)
127.	Dr.S. Kandasamy	A Prasanth	2021	Effect of foliar nutrition on growth and yield of irrigated green gram
128.	Dr.D. Kalyana Sundaram	R Rajavathini	2021	Studies on the effect irrigation management and other agronomic practices on hybrid maize
129.	Dr.M.Meyyappan	R.Ranjith	2021	Sustainable sesame production
130.	Dr.S.Manimaran	Sakkappan.M	2021	Effect of foliar nutrition on productivity enhancement in green gram.
131.	Dr. Thiruppathi	S. Selvakumar	2021	Effect of foliar fertilization on quantitative

				and qualitative properties of cotton.
132.	Dr. P. Sudhakar	S. Selvamuthukumar	2021	Influence of various irrigation levels and stress management tools on enhancement of productivity in green gram
133.	Dr.C.Kalaiyaran	E.Senthamil	2021	Effect of VAM, boron and sulphur on transplanted ragi
134.	Dr.S. Babu	K. Sindhu	2021	Evaluation of silica-based efficacy on the productivity enhancement of direct-seeded paddy.
135.	Dr.N. Ramesh	A. Sivapriya	2021	Weed management in irrigated blackgram ( <i>Vigna mungo</i> (L.))
136.	Dr.N. Ramesh	C. Sathish Kumar	2021	Studies on the integrated weed management in hybrid sorghum
137.	Dr.S.Ramesh	M.Suresh Kannan	2021	Agronomic strategies yield enhancement in irrigated ragi
138.	Dr. S.M. Suresh Kumar	R. Thangadurai	2021	Efficacy of new generation herbicides in direct seeded rice
139.	Dr.S Elankavi	S Vanjinayaki	2021	Effect of seed hardening and foliar nutrition in blackgram
140.	Dr. J. Nambi	P. Vinothini	2021	Effect of different weed management practices in irrigated groundnut
141.	Dr.C.Ravikumar	E.Elavarasan	2021	Effect of nano n, p, k and znso <sub>4</sub> fertilizers on rice production
142.	Dr.S.Jawahar	G. Janani	2021	Effect of planting geometry and NPK levels on productivity of barnyard millet under transplanted condition
143.	Dr.R.Gobi	K. Kalaiarasi	2021	Agronomic approaches for enhancing the growth and yield of irrigated maize ( <i>Zea mays</i> L.)
144.	Dr.A. Balasubramanian	Kaviyaran	2021	sustainable nutrient management practices to enhance the productivity of irrigated sorghum
145.	Dr.S.Kalaisudarson	J.Keerthana	2021	Integrated weed management in irrigated ragi.
146.	Dr. G.Sivakumar	R.Keerthana	2021	Impact of integrated nutrient management in tapping the production potential of sorghum
147.	Dr.A.P.Srinivassaperumal	M.Manickaselvi	2021	Evaluation of cotton based intercropping system
148.	Dr.A. Karthikeyan	S. Meena	2021	Effect of silicon on growth and yield attributes of transplanted paddy under wetland ecosystem
149.	Dr. G.B.Sudhagar Rao	G Muthu	2021	Integrated nutrient management for practices of sustainable cotton production in the north western zone of Tamil Nadu
150.	Dr.S. Natarajan	Srikantha SN	2022	Studies on different levels and sources of nitrogen with an aim of augmenting the yield

				of fodder maize ( <i>Zea mays</i> L.)
151.	Mr. K. P. Senthilkumar	S. Manibharathi	2022	Studies on the effect of seed hardening, soil and foliar nutrition on the growth and yield of Pearl millet ( <i>Pennisetum glaucum</i> )
152.	Dr. V. Imayavaramban	Sridevika. K	2022	Effects of NPK levels and micronutrient application on productivity of finger millet
153.	Dr. A. Karthikeyan	M. G. Sreemathi	2022	studies on the effect of INM practices for yield maximization in irrigated transplanted ragi
154.	Dr.M.Meyyappan	Tejaswini Venna	2022	Yield enhancement techniques through foliar spray in green gram
155.	Dr. P. Anandan	S.Kaviyazhagan	2022	Nitrogen scheduling and conjoined application of nano and granular forms of urea in sweet corn
156.	Dr. P. Stalin	R. Jayasoorya	2022	Studies on Integrated Plant Nutrient Supply System for Sustaining Yield of Hybrid Maize
157.	Dr. S. Manimaran.	Veerasiva G	2022	Enhancing the productivity of maize through nutrient management
158.	Dr. R. Krishnamoorthy	Deimonlang Nongtdu	2022	Studies on the effect of organic foliar nutrients on the growth and yield of rice ( <i>Oryza sativa</i> L.)
159.	Dr. S. Krishnaprabu	I. Duraimurugan	2022	Studies on the effect of integrated nutrient management on the growth and yield of maize
160.	Dr. D. Kumarimanimuthu veeral	A.Akshaya	2022	Studies on Direct and Residual effects of different organic sources in Groundnut- Pearl millet Cropping Sequence.
161.	Dr.P.Sudhakar	V.T.Mukeshkumar	2022	studies on influence of graded levels of INM practices of yield maximization on blackgram
162.	Dr. G. Murugan	M. Gowsalya	2022	Enhancing machine sown groundnut productivity through integrated nutrient management (INM) practices
163.	Dr. R. Rex Immanuel	Sasikumar T S	2022	Effect of foliar application of drought tolerance inducing substances on the performance of transplanted rice under moisture under moisture stress condition
164.	Dr. C. Ravikumar	S. Naveenkumar	2022	Studies on potassium and sulphur management in groundnut
165.	Dr. K. Arivukkarasu	K. Sharmitha	2022	Chemical weed management in irrigated blackgram
166.	Dr. A. Sundari	Pasupuleti supriya	2022	Response of irrigated maize chemical and cultural weed management practices
167.	Dr. M. Saravana Perumal	R. Easwari	2022	Efficacy of Pre and Post emergence herbicides for weed control in greengram
168.	Dr. S. Kalaisudarson.	Seenikkannaiyan S	2022	Response of irrigated greengram to different weed management practices
169.	Dr. A.P. Srnivasaperumal	Soundharrajan.S	2022	Effect of spacing and weed management

				practices on irrigated hybrid maize
170.	Dr. G. Sivakumar	M.Mesiya Naveen Doss	2022	Standardization of enriched bio digested bone sludge compost for maximizing the yield of sugarcane
171.	Dr. A. Balasubramanian	M.P.Priyadharshini	2022	Studies on integrated weed management in direct seeded rice
172.	Dr .R.Gobi	Prathivraj Kumar C	2022	Studies on integrated nutrient management in irrigated groundnut ( <i>Arachis hypogaea</i> L.)
173.	Dr. K. Suseendran	M. Arutkumar	2022	Enhancing greengram crop architecture through intervention of foliar nutrition
174.	Mr.S.R.Vinod Kumar	Fizza S	2022	Evaluation of bio efficacy for a Post emergence Herbicide 2,4 - D Sodium Salt 95 % WDG against weed flora in Rice.
175.	Dr. G.B. Sudhagar Rao,	P. Sujithkumar	2022	effect of various organic inputs on the growth and yield of transplanted rice
176.	Dr. S. Jawahar	Prakash.B	2022	Response of kodo millet to silicon nutrition
177.	Dr. R. Raman	T. Tamil Vani	2022	Studies on the Effect of micronutrient on growth and yield of irrigated blackgram
178.	Dr. S. Kandasamy	Tamizhvendhan. M	2022	Studies on the effect of phosphorous level and biofertilizers on growth and yield of irrigated blackgram

#### 6.4.7. Feedback of stakeholders (Students, farmers, company, parents etc.)

An effective Mentor – mentee system is functioning at department level to get feedback from the students regarding curricula and extracurricular activities. Individual staff members obtained feedback from the students regarding content delivery, addition and deletion etc., at the end of each semester. The feedback obtained is discussed in the Department staff meeting for necessary improvement. Feedback from nearby farming communities is regularly obtained by field visits and farmers meetings and from government department of agriculture. The farmer’s feedback is used for undertaking need based research to solve the issues. Informal feedback from entrepreneurs and agro industries are obtained during reunion meet and visit of industrialist to the campus. Based on the input, structural modifications in the syllabus, importance, distribution and multi-disciplinary courses are structured.

#### Action Taken Report (ATR)

1. As per the request of students PG Scholars waiting hall was arranged
2. For PG students internship programme was introduced from the year 2020 – 2021
3. More number of value added courses are introduced to enhance the skill, employability and professional competence

4. Special lectures on various fields of knowledge and skills organized, through AAA (Annamalai Agronomic Association)
5. As per the request, Agricultural periodicals and daily and weekly news magazines were arranged to be available in the department library.
6. PG lecture hall was equipped with ICT facilities for efficient learning
7. QR code was developed to know real time weather data for efficient learning
8. Demonstration unit for pressured irrigation system was established
9. Number of field visits in the practical classes were increased

#### 6.4.8. Student intake and attrition in the programme for the last five years

Name of the programme	Actual students admitted in the last five years						Attrition (%)					
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
M.Sc., (Ag.) Agronomy	35	33	32	25	29	30	0	0	0	0	0	0

#### Student Progression

Academic Year	Name of the Student		
	Ph.D. in ICAR institutes & State SAUs	Name of the students for Ph.D. in ICAR & SAUs	Enrolment Number
2018	Ph.D., TNAU	Ariraman. R	1650020015
	Ph.D., TNAU	Suvain.K.	1650020020
	Ph.D., TNAU	P. Suryakala	
	Ph.D., TNAU	C. Mohanasundar	
2019	Ph.D., TNAU	Mullaivendhan. V	1750020005
	Ph. D., BCKVV, West Bengal.	Poovarasam. P	1750020022
	Ph.D., TNAU	Jayaraj. M	1750020021
2020	Ph.D., TNAU	Sangothari.A	1850020004
	Ph.D., TNAU	Pragatheeswaran. M	1850020005
	Ph.D., TNAU	Sowmya. S	1850020006
2021	Ph.D., DHARWAD	Senthamil.E	1950020015
	Ph.D., TNAU	Selvakumar. S	1950020007

**List of students qualified in ICAR- NET Exam**

Sl. No.	Name of the Students	Roll Number	Year of Passing
1.	Ms. Suganya. R	4094332529	2021
2.	Mr. Srinithan. T	4114333391	2021
3.	Mr. Jayaraj. M	4114332100	2021
4.	Ms. Elakkiya Priya. P	4094332700	2021
5.	Ms. Janani. G	4114335644	2021
6.	Mr. Gokulakannan. K	4094336398	2021
7.	Ms. Vishudevi. S	4094336849	2021
8.	Ms. Sangothari. A	4114332762	2021
9.	Ms. Gayathri. S	4114334279	2021
10.	Ms. Deepa. M	4114334399	2021
11.	Mr. Ranjith Kumar. R	4114333566	2021
12.	Mr. Balachandra Kumar. V	4114332860	2021
13.	Mr. Sivasakthi. K	4094335978	2021
14.	Ms. Keerthana. J	4094336712	2021
15.	Ms. Guda Bhargavi	4094333163	2021
16.	Ms. Mege Duchok	4094335806	2021
17.	Mr. Anbarasan. S	4114336542	2021
18.	Mr. J. Ramachandiran	4114334766	2021
19.	Ms. Rajavarthini. R	4094336561	2021
20.	Ms. Harini Sri. S	4094332312	2021
21.	Mr. Kumaravel. S	4094331916	2021
22.	Ms. Vinodhini. P	4094331767	2021
23.	Mr. Madhavan. G	4014335341	2021
24.	Mr. Prasanth. A	4114336939	2021
25.	Mr. Sureshkannan. M	4114333119	2021
26.	Mr. Senthamil. E	4114333116	2021
27.	Mr. Muthu. G	4114335157	2021
28.	Mr. Bada Maheswara Reddy	4094336722	2021
29.	Mr. Sundaravathanan R	4094334834	2021

**PLACEMENT DETAILS**

<b>M.Sc. (Ag.) Agronomy (2016 – 2022)</b>					
<b>S.No.</b>	<b>Student Name</b>	<b>Enrolment Number</b>	<b>Cell Number</b>	<b>Current Position</b>	<b>Year of Joining</b>
1.	Tamilselvan.R	1650020004	9790473211	Relationship Manager, Samunnati financial intermediate finance	2022
2.	Ravindran.S	1650020008	9789665012 9443711348	Phytopsanitary Inspector, Agro Care Laboratories	2020
3.	Tamilmani.R	1650020013	8682010371 9750497343	Manager, Innovative Retail Concept Pvt Ltd, Thindivanam	2020
4.	Saravanan.V	1650020016	9524671191 9942060875	Assistant Gr.-III, FCI	2018
5.	Suvain.K.K	1650020020	9842098091 9688211048	Assistant professor, Dept. of Agrl. Engg., Nandha Engineering college, Erode.	2022
6.	Srinivasan.G	1650020022	9965503593 9715126357	Senior Research Fellow, TNAU	2022
7.	Sandhiya Devi.K	1650020025	8754015347	Assistant Professor, Thangai Rovar Institute of Agricultural and Rural Development	2021
8.	Paulraj Suryakala	1650020026	9655500170	Assistant Professor, JSA agriculture college, Avati	2022
9.	Parthipan.S	1650020028	8940415589	Supervisor, NAF	2018
10.	Ramachandran. J	1650020032	9092363045 9571077796	Assistant Professor, CIT, Madhurai	2018
11.	Ajitha. P	1750020017	8903744588	Chief Executive Officer, TNIAMP Thirumanimuthar – Valarpirai Farmer Production Company	2021
12.	Anusha. R	1750020032	9445573534	Technical Assistant, Five Star	2021
13.	Jayaprakash.J	1750020013	9788135231	Production executive at Rasi seeds	2020
14.	Jeevabharathi. S	1750020001	7397079106/ 9842780510	Assistant Professor, Don Bosco College of Agriculture	2021
15.	Joyson. S	1750020006	8940258662/ 9345705628	Agronomist, Rivulus Irrigation	2022
16.	Kowsalya. M	1750020002	7639056410/ 9626649449	AO	2022
17.	Suderson Pradeep. M	1750020009	7904934979	Asst.Professor, Adiparasakthi College	2021
18.	Arunprasath.R	1850020034	9976508299	Enterprise Finance Officer in	2022

				TN rural transformation project	
19.	Gowtham.R	1850020021	9488141273	Assistant Professor, Krishna College of Agriculture and Technology	2021
20.	Lavanya.K	1850020022	9943783330	Assistant Professor, Dept. of Agrl. Engg., Sri Shanmuga College of Engineering and Technology	2022
21.	Nidheesh.S	1850020019	8940828230	Asst. Prof. PGP College, Nammakkal	2021
22.	Suresh kumar.T	1850020028	8940918762	Technical officer, VJS Phytosanitary service	2021
23.	Manickaselvi.M	1950020013	8807709753	Assistant Professor, Pushkaram College of Agriculture Sciences	2021
24.	Muthu.G	1950020019	9626301756	Assistant Professor, Don Bosco college , Arakkonam	2021
25.	Prakash.S	1950020016	8973368633	NACL Industries Limited	2022
26.	Suresh Kannan.M	1950020009	8015871408	Senior Research Fellow, TNAU	2022
27.	Vanjinayaki.S	1950020025	9445881903	Chief Executive Officer, Madurai Agri business Incubation Forum	2022
28.	Sakkappan.M	1950020008	8220961194	Technical Support Officer, Syngenta India Pvt.Ltd.	2021
29.	Keerthana.R	1950020017	9488228365	Project officer in agremy Pvt. Ltd.	2022
30.	Kalaiarasi.K	1950020004	9790172530	Assistant Professor, Don Bosco College of Agriculture	2021
31.	Ponmathi.R	1950020020	8838655186	Assistant Professor, PRIST College, Thanjavur	2021
32.	Elavarasan.E	1950020027	9443747998	Technical Assistant, State Govt.	2021

#### 6.4.9. ICT application in curricular delivery

ICT tools viz., computer, Internet, Google forms, WhatsApp messenger, Youtube, Google drive, google classroom, cloud sharing is some of the methods employed in handling classes for the students within a given time frame. Students' dissertation materials are shared by the cloud drive and with the teachers for further modification. As far as possible, out of office timing, students are communicated and interacted through ICT practical instructions for the next class are being shared via internet. PowerPoint

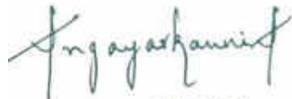
presentation of a teacher is shared with the students well in advance, so that it would be very easy in the classroom to follow it. ICT is fast replacing the traditional methods. Apart from the above; college is provided with PG computer lab. The PG students are utilising the facility.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean ..... **A. Angayarkanni** ..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
MBA Agri-Business Management**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



**M.B.A. Agri-Business Management**  
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#### 6.4. Self Study Report for the Programme

Name of the Programme: MBA (Agri-Business Management)

Offered by: Department of Agricultural Economics

##### 6.4.1. Brief History of MBA (Agri-Business Management) Programme

The Department of Agricultural Economics was established in 1993 which had its beginning as Division of Agricultural Economics in 1987 with an aim to develop a strong programme in agricultural and rural development with emphasis on teaching, research and extension. MBA (Agri-Business Management) programme was started during 2007.

Historical Itinerary	Year of Commencement
Division of Economics	1987
Department Status	1993
Post Graduate Programme in Agri Business Management	2007
Ph.D. (Agri Business Management ) Programme	2007

For MBA (Agri-Business Management) degree programme, a total of 70 credits are offered which includes 20 credits for major courses, 8 credits for minor courses, 6 credits for supporting courses, 5 credits for common courses, 01 credit for seminar and 30 credits for master's thesis research. The latest revision of the curriculum was carried out in the academic year 2021-22 which would be effected from 2022-23.

#### Distribution Pattern of Courses and Credit (Project Work)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Internship	Project	Credit
I	8	-	6	2	-	4	1	<b>21</b>
II	12	-	-	2	-	6	2	<b>22</b>
III	-	6	-	1	1	-	7	<b>15</b>
IV	-	2	-	-	-	-	10	<b>12</b>
Credit Load	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>20</b>	<b>70</b>

### Distribution Pattern of Courses and Credit

S.no.	Course Code	Course Title	Credit
		<b>Compulsory Major Courses</b>	
1	ABM 501	Principles of Management and Organisational Behaviour	2+0
2	ABM 502	Managerial Accounting and Control	1+1
3	ABM 503	Applied Agribusiness Economics	1+1
4	ABM 504	Human Resource Management for Agricultural Organizations	1+1
5	ABM 505	Production and Operations Management	1+1
6	ABM 506	Financial Management in Agri Business	2+0
7	ABM 507	Agricultural and Food Marketing Management- I	2+0
8	ABM 508	Agricultural and Food Marketing Management- II	2+0
9	ABM 511	Marketing management	2+0
		<b>Optional Major Courses</b>	
10	ABM 509	Agri Supply Chain Management	2+0
11	ABM 510	International Trade for Agricultural Products	2+0
12	ABM 512	Management of Agricultural Input Marketing	2+0
		<b>Minor Courses</b>	
13	ABM 513	Food Technology and Processing Management	2+0
14	ABM 514	Management of Agro-Chemical Industry	2+0
15	ABM 515	Rural Marketing	1+1
16	ABM 516	Agri Commodity Markets and Futures Trading	1+1
17	ABM 517	Food Retail Management	1+1

18	ABM 518	Risk Management in Agri Business	2+0
19	ABM 519	Management of Agri-Business Co-Operatives	2+0
20	ABM 520	Quality Management for Agri Business	2+0
21	ABM 521	Advertising and Brand Management	2+0
22	ABM 522	Contract Farming	2+0
23	ABM 523	Strategic Management for Agri Business Enterprises	2+0
24	ABM 524	Management of Veterinary Hospitals	2+0
25	ABM 525	Management of Floriculture and Landscaping	2+0
26	ABM 526	Farm Power and Machinery Management	2+0
		<b>Supporting Courses</b>	
27	STA 502	Statistical Methods for social Sciences	2+1
28	COM 501	Information Technology in Agriculture	2+1
		<b>Common Courses</b>	
29	PGS 501	Agricultural Research, Research Ethics and Rural Development Programmes	1+0
30	PGS 502	Technical Writing and Communications Skills	0+1
31	PGS 503	Basic Analytical Techniques	0+1
32	PGS 504	Library and Information Services	0+1
33	PGS 505	Intellectual Property and its Management in Agriculture	1+0
		<b>Non Gradial Courses</b>	
	NGC 511	Disaster Management (1+ 0)	-
	NGC 512	Constitution of India (1+ 0)	-

	VAC	Value added course	-
	ABM 591	<b>Master's Seminar</b>	0+1
	ABM 599	<b>Research Project</b>	30

**Research (Summer Internship + Project) : Total credits - 30 (10+20)**

ABM xxx	Summer Internship	10
ABM xxx	Project	20
	<b>Total</b>	<b>30</b>

**a) Summer Internship / Industrial Attachment**

Course code	Course Title	Credit hours	Semester
ABM 011	Internship I	0+3	I
ABM 021	Internship II	0+4	II
	<b>Summer Internship*</b>	<b>0+7</b>	
	<b>Basic Courses Mandatory</b>		
ABM 527	Communication for Management and Agri Business	0+1	I
ABM 528	Research Methodology for Agri Business Management	1+1	II
	<b>Total</b>	<b>0+3</b>	

**\*After Internship programme, the student can submit the report**

**b) Project**

Course code	Course Title	Credit hours	Semester
ABM xxx	Project	0+5	III

ABM xxx	Project	0+9*	IV
	<b>Project</b>	<b>0+14</b>	
	<b>Basic Courses mandatory</b>		
ABM 529	Operations Research	1+0	I
ABM 530	Project Management and Agri Business Entrepreneurship	1+1	II
ABM 531	Agribusiness Environment and Policy	2+0	III
ABM 532	Agri Business Laws and Ethics	1+0	IV
	<b>Total</b>	<b>0+6</b>	

(\* In the fourth semester, out of 9 credits, 7 credits will be for evaluation of research and remaining 2 credits for evaluation of viva voce)

#### Vision

- To establish a Centre for Entrepreneurship Development
- To establish a Centre for Agri-Business Incubation

#### Goals

- To foster the spirit of entrepreneurship and provide training for enriching entrepreneurial skills.
- To provide training programmes to agri- entrepreneurs to start up various agri-business ventures for self employment

#### Objectives

- To motivate the young Agricultural graduates to venture into new agri-business projects and impart the entrepreneurial skills.
- To create awareness and expose agri-preneurs to innovative and market based agri-business ventures.

### Strategic plan to achieve Vision and Goal - MBA (Agri-Business Management)

Goal	Objectives	Implementation plan	Performance Metrics/Timeline	Out come
To foster the spirit of entrepreneurship and provide training for enriching entrepreneurial skills.	To motivate the young agrl. graduates to venture into new agri-business projects and impart the entrepreneurial skills.	One week Motivational programme will be conducted involving academicians, experts and practitioners with successful experience,	2024	Creating self employment opportunities
Providing training programmes to agri-entrepreneurs to start up various agri- business ventures for self employment	To create awareness and expose agri-preneuers to innovative and market based agri- business ventures	In plant training on agribusiness will be given to the graduates	Every Year	Improving efficiency and profitability of agri-preneuers

#### Accomplishments

Division of Agrl. Economics was established by the dedicated efforts taken by the former Head of the Department Dr. P.Zeaudeen. The MBA (Agri Business Management) programme was started during 2007 under the headship of Dr.K.R.Sundaravaradarajan, Department of Agrl. Economics has successfully produced 48 MBA (Agri Business Management) graduates, since its inception.

Research is the other major focus of the Department besides teaching. The staff members of the Department are working in various fields of their specialization and periodically submitting research proposals on thrust areas viz., agricultural marketing, agri-business management, entrepreneurship development and finance for funding from national and international agencies. The expertise of the staff members in the specialized fields caters to the needs of the present day education systems and the research works relevant to the rapidly changing socio - economic environment. The Research Projects have been funded by various agencies viz., DBT, UGC, NMPB, ICSSR, ICAR-NATP, SANEI, DST-NIMAT, NABARD, REPCO, MHRD, MOFPI, TNSCHE, TNSCST, NGO, etc.. PG and Ph.D scholars are using available learning resources 311 text and reference books, 201 PG and 19 Ph.D. theses, four national journals with 10 bound back volumes for their research.

Two staff members of the Department have completed MBA course. They are handling MBA (Agri Business Management) classes along with the faculty members from the Department of Business Administration, Annamalai University. The department offers Diploma in Agribusiness Management both in Tamil and English medium by Distance Education mode (DDE). Three Endowments *viz.*, Srilochani Varadarajulu Prize, Vallalar endowment and GVR Kodialam Trust Prize are constituted for the first rank holders in Agri- Business Management programme every year.

The Department has mobilized research funds to the tune of Rs 33.74 lakhs from various funding agencies, Rs. 8 lakhs from IMPRESS-ICSSR, Rs. 3.74 lakhs from State Planning Commission, Rs. 22 lakhs from Tamil Nadu State Council for Higher Education, during the period 2017-2022.

Category	Total Period (Upto 2016)	Last five year period (2017-2022)
Number of Publications (Journal articles)	212	101
Number of Publications (Seminars/Conferences/Symposia)	92	40
Number of Books & Book chapters	12	15
Number of Projects obtained	11	5
Grant mobilization (Lakh rupees)	54	35
Number of Ph.D.s produced	11	08
Number of PGs produced	119	82
Number of Seminars/Conferences/Workshops organized	17	8
Number of Awards received by the Faculty	4	3
Number of professional visits of the faculty to abroad	10	-

### Salient research achievements of the Department

1. Agricultural Market Intelligence Cell (AMIC) is functioning in the Department to equip the PG students in the art of using various software packages in price forecasting of various agricultural commodities in Cuddalore district. In future, it would be transformed into a farmer centric cell in updating market information on agricultural commodities to farmers of Cuddalore District.
2. The modalities of social and economic and entrepreneurial empowerment of fisherwomen (SHGs) identified by the Department research would be helpful for the upliftment of fisherwomen in the coastal areas of Cuddalore district.
3. The research on "Labour scarcity and its impact on agriculture" has suggested that community level approach needs to be encouraged among the farmer for adopting very high expensive labour saving technologies and implements.

#### 6.4.2. Faculty Strength

Presently the Department's teaching, research and extension mandates are well taken care of with thirteen faculty members who have specialized in various fields of Agri Economics and agri-business management.

Sl. No.	Cadre	Faculty in place (as on August 2022)	Vacant Position	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	5	-	-
2	Associate Professor*	5	-	1
3	Assistant Professor*	3	-	5
	<b>Total</b>	<b>13</b>	<b>-</b>	<b>6</b>

\*Assigned Responsibilities for Multiple Programmes

**Faculties from other Department to undertake the MBA students**

Sl. No.	Cadre	Faculty in place (as on August 2022)	Other Department	
1	Professor**	-		
2	Associate Professor**	1	1.Statistics	
3	Assistant Professor**	2	2. Computer Science	
		1	3.English	
		4	4.Business Administration	
	<b>Total</b>	<b>8</b>		

\*\* The services of staff from Department of Statistics, Department of Computer and Information Science, Department of Business Administration and Department of English are availed.

### Credentials of the Faculty

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided (2017-2022)		Total number of publications (Till Date)	Total number of Publications (2017 to 2022)
				PG	Ph.D.		
1.	Dr. G. Ramanathan, M.Sc. (Ag.), Ph.D. Professor & Head	28	Production Economics and Econometrics	6	-	12	2
2.	Dr.K.R.Sundaravaradarajan, M.Sc. (Ag.), M.B.A., Ph.D. Professor	35	Natural Resource Economics, Agri business Management & Trade	6	1	47	3
3.	Dr. K. Sita Devi, M.Sc. (Ag.), Ph.D. Professor	30	Development and Policy & Women Studies	6	1	58	24
4.	Dr. V. Banumathy, M.Sc. (Ag.), Ph.D. Professor	29	Agricultural Marketing & Supply Chain Management	4	1	26	5
5.	Dr. R. Venkataraman, M.Sc. (Ag.), Ph.D. Professor	28	Natural Resource and Environmental Economics	6	3	24	6
6.	Dr. S. Ravichandran, M.Sc. (Ag.), Ph.D. Associate Professor	22	Agricultural Marketing and Resource Economics	5	-	17	6
7.	Dr. G. Srinivasan, M.Sc. (Ag.), M.B.A., Ph.D. Associate Professor	20	Agricultural Finance and Agribusiness Management	5	-	15	5

8.	Dr. T. Ponnarasi, M.Sc. (Ag.), Ph.D. Associate Professor	21	Development and Policy & Women Studies	5	-	30	16
9.	Dr. C. Prabakar, M.Sc. (Ag.), Ph.D. Associate Professor	19	Macro Economics	7	2	30	20
10.	Dr. D. Velmurugan, M.Sc. (Ag.), Ph.D. Associate Professor	18	Environmental Economics	7	-	12	4
11.	Dr. R. Rengaraju, M.Sc. (Ag.), Ph.D. Assistant Professor	21	Agricultural Marketing	3	-	12	2
12.	Dr. L.K. Velayutham, M.Sc. (Ag.), Ph.D. Assistant Professor	18	Production Economics	6	-	14	4
13.	Dr.R.Selvakumar, M.Sc. (Ag.), Ph.D. Assistant Professor	15	Natural Resource and Environmental Economics	7	-	16	4

#### Awards/ Recognitions & Abroad visits of the Faculty

Sl. No.	Name of the Faculty	Awards / Recognitions	Countries visited & purpose
1.	Dr. K.R. Sundaravardarajan	Best Agricultural Trainer, 2019	
2.	Dr. K.R. Sundaravardarajan	Doctor Issac Award, 2019	
3.	Dr. C. Prabakar	World Intellectual Property Accreditation Ingenious Award, 2021	

**List of funded Projects (2017 to 2022)**

<b>Sl. No.</b>	<b>Title of the Project</b>	<b>Name of the Principal Investigator/ Co-Investigator</b>	<b>Period</b>	<b>Sponsoring Agency</b>	<b>Amount Sanctioned (in lakh Rupees)</b>
1.	Constraint Analysis on Getting Land Availability in Coastal Areas of Tamil Nadu.	Dr.K.R. Sundaravaradarajan	2017-19	State Planning Commission	2.99
2.	Tree Farming as a Choice for Land Use Pattern in Coastal Areas of Northern Tamil Nadu.	Dr.K.R. Sundaravaradarajan	2021-22	State Planning Commission	0.75
3.	Doubling the Farmers Income Through Protected Cultivation Technology – An Economic Evaluation Study in Tamil Nadu	Dr. S. Ravichandran Dr. R. Venkataraman	2019-21	IMPRESS, ICSSR	8.00
4.	Remodeling of Existing Farming System Towards Risk Optimization in Cauvery Delta Zone of Tamil Nadu	Dr. C. Prabakar Dr. K. Sita Devi Dr. R. Selvakumar	2021-24	Tamil Nadu State Council for Higher Education, Chennai	22.00
				<b>Total</b>	<b>33.74</b>

### 6.4.3 Technical and Supporting staff

Four technical and supporting staff members in the Department are helping in academic, research and administrative activities (as on August 2022).

Sl. No.	Sanctioned Posts	Staff in place	Responsibilities
1.	Assistant (Helper)	1	Office file maintenance, department stock maintenance, assisting in the preparation of department level academic and administration reports and leave register maintenance. Preparation of work load, time table preparation, helping in the PG and Ph.D admission process.
2.	Lab Assistant (Programmer, Asst. section officer, Helper)	3	Assists and guides students in computer lab during practical classes.

### 6.4.4. Classrooms and Laboratories

The Department (Computer Science + Statistics) has 30 computers, one camera and one interactive smart class room for conducting UG and PG programmes. The software SPSS, STRATA, R-Programming and E-views are available in the Department for the use of students to pursue their research and data analysis.

Sl. No.	Facility	Number	Area (Sq.ft)	Description
1.	Computer room (at Agrl. Economics)	1	285	Wi-Fi enabled with computer lab with 5 PCs.
2.	Library	1	266	311 - Text and Reference Books 201 - PG Theses, 19 Ph.D thesis
3.	Ph.D. Class room (Hi-Tech Hall)	1	551	Interactive smart class room with LED TV and e-Podium
4.	PG Class room	1	551	LCD projector enabled class room
5.	UG Lab (New Block)	1	1218	Class room with necessary e-teaching aids.
	<b>Common facility</b>			
6.	Statistics & Computer Lab	1	1139	Wi-Fi enabled with computer lab with 30 PCs. (Software -SPSS, STRATA, R-Programming and E-Views)

#### **6.4.5. Conduct of Practical and Hands-on-Training**

The strength of 10 students of M.B.A (Agri Business Management) will be treated as one batch for the regular practical class. Teacher student ratio is 1:1. The focus is given on imparting knowledge of the basic concepts related to particular topic and case analysis will be given to the students. Outdoor visits are arranged to have a practical knowledge of different aspects related to agri business management. The students are placed in different agro industries as a part of their curriculum and a short trip of 7 to 10 days is arranged with an objective to expose the students to the various business activities of agri business units. Term papers are assigned to the students for subjects with theory and practical. The topic of term paper are different from that of the credit seminar. Student has to collect and submit the term paper before final practical examination and the same will be evaluated by the teacher during the practical examination. Besides, class assignments are also given to motivate the students to improve their skill in presentation.

#### **6.4.6 Supervision of Students in PG programme**

During project, each PG student will have an advisory committee which is formed before the end of the first semester to facilitate the student in carrying out the assigned project. The advisory committee shall comprise of a chairman and two members of which, one member shall be from the major discipline and another from any other discipline in the related field of project research. The chairman of the advisory committee will guide the student for the selection of topic for project research and seminar. Continuous monitoring of project research is made by maintaining project monitoring register for each student. The student's progress is reviewed by the chairman weekly once. At the end of the each semester, the evaluation of research is done by the advisory committee members.

The outline of project work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the third semester. The student's plan for the M.B.A. (Agri Business Management) work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester.

Passing a qualifying examination at the end of 3rd semester is a pre requisite for continuation of the degree programme and research. Only those students who successfully completed the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of written and oral examination. The advisory committee shall conduct the qualifying viva-voce examination with the external member, who shall be a specialist in the subject from outside the university. The Head of the department will monitor and coordinate the conduct of the qualifying viva. The performance of the candidate will be graded as Satisfactory / Unsatisfactory.

Mid-semester examinations are conducted for each subject as per the scheme drawn by the Head of the Department/ PG coordinator and evaluated. The evaluated answer scripts are shown to the students. If a student does not appear for MSE, he/she is not eligible to appear for the final examinations. Such candidate has to reappear for the MSE as and when the respective examinations are conducted only after getting permission from the Dean, Faculty of Agriculture on payment of fee prescribed by the University. A student who fails to attend a mid-semester

examination due to unavoidable circumstances shall be permitted with prior approval of the Dean to take up missing examination of the particular course, on payment of fee prescribed by the University. Such tests should be completed ordinarily within 15 working days after the respective MSE. The final theory and practical examinations will be of three hours duration each conducted separately by the University. Theory examinations will be conducted before practical examinations. The final theory and practical examinations will be evaluated by two examiners (one will be the internal and another will be external).



**M.B.A. (Agri Business Management) – Thesis List (2017-2021)**

<b>Name of the Faculty</b>	<b>Name of the Students Guided</b>	<b>Year of Submission</b>	<b>Thesis Title</b>
Dr. G. Ramanathan	C.Arul Murugan	2017	Consumer perception towards selected brands of package milk in Salem District
Dr. K. Sita Devi	R. Raj Kumar	2017	Export performance of mango in Krishnagiri district-An Economic Analysis
Dr. R. Selva Kumar	D.Satish Kumar	2017	Economic study of Shrimp production unit Cuddalore District in Tamil Nadu
Dr. D. Velmurugan	S. Senthil Kumar	2017	A study on consumer satisfaction with reference to Texmo irrigation pumps in Coimbatore District
Dr. L. K.Velayutham	V.Sridar	2017	A study on brand luxury Ice Cream parlours in Namakkal Municipality
Dr. T. Ponnarasi	R.Valeeswaran	2017	Consumer preference on Mansanto hybrids Maize in Salem District
Dr. R. Venkataraman	Akula Madhukar	2017	Supply chain management in cotton ginning mills – A managerial study in Karimnagar District in Telangana
Dr. C. Prabakar	A.Arul Kumar	2017	An economic analysis of production and marketing of Sorghum in Dindigul District
Dr. G. Srinivasan	P.Ashok Kumar	2018	A study on consumer preference and their willingness to pay for Country Chicken in the municipal area of Cuddalore District of Tamil Nadu
Dr. R. Rengaraju	V. Kathiravan	2018	Comparative study on dairy farm of Organised and Unorganised sector in Cuddalore District
Dr. T. Ponnarasi	K. Mohan Raj	2018	Impact of entrepreneurship on livelihood Assets management by Fisher Women in Cuddalore District
Dr. S. Ravichandran	S.Pugalendhi	2018	Study on consumer preference on Minor Millets in Dharmapuri District
Dr. R. Venkataraman	R. Rakesh	2018	Capacity utilisation in Pulse processing in firms- An economic study in Pudukottai District

Dr. G. Ramanathan	Reshma T.Roshin	2018	Value chain analysis for Coffee in Wayanad District of Kerala
Dr. V. Banumathy	A.Sarath Kumar	2018	Study on consumer preference for Pathanjali products in Chidambaram
Dr. K. Sita Devi	S. Subhashanthini	2018	An economic analysis of Banana value chain in Thiruchirapalli District of Tamil Nadu
Dr. K. R. Sundaravaradarajan	D.VivekChandar	2018	Management perspectives of Solar irrigation pumps in Theni District Tamil Nadu
Dr. R. Selva Kumar	R. Dhinesh	2019	Consumer behaviour and preference towards Branded and Un Branded Milk in Chidambaram Town of Cuddalore District in Tamil Nadu.
Dr. D. Velmurugan	S. Iraniyan	2019	A study on consumer preference towards ready to eat snacks in Chidambaram Town.
Dr. L. K.Velayutham	Porutselvi	2019	Socio economic impact of Farmer Producer Organization in Tiruvarur District.
Dr. C. Prabakar	Praveen Kumar	2019	An economic analysis on the price dynamics of Tapioca industries.
Dr. G. Srinivasan	G. Puratchikodi	2019	A study on consumer preference and their willingness to pay for Palmyrah farm products in Trichy City of Tamil Nadu.
Dr. R. Rengaraju	R. Radha	2019	An economic analysis of production and marketing of Pearl Millet in Villupuram District.
Dr. T. Ponnarasi	V. Ranjith	2019	Consumer preference towards Britannia Biscuits- A study in Chidambaram Town
Dr. S. Ravichandran	R. Salman	2019	A managerial study on farmer's pesticide brand preference in Villupuram District, Tamil Nadu.
Dr. R. Venkataraman	N. Veni	2019	Supply chain management of irrigation pumps in Namakkal District of Tamil Nadu.
Dr. G. Ramanathan	Aishwarya	2020	An economic analysis of production and marketing of Glory Lilli in Karur District, Tamil Nadu.

Department of Agricultural Economics

Dr. K. R. Sundaravaradarajan	Jaffar Sadiq Ali	2020	Agri-business potential of Vermi-compost in Erode District.
Dr. V. Banumathy	S. Jayanthi	2020	Study on consumer preference towards Desiccated Coconut in Chidambaram Town
Dr. R. Selva Kumar	T. Lingavarayan	2020	An Economic analysis of silk worm rearing units in Krishnagiri District of Tamil Nadu.
Dr. K. Sita Devi	T. Brintha	2020	Impact of Women entrepreneurship development through NGOs- An economic analysis in Villupuram District.
Dr. D. Velmurugan	N. Kabilan	2021	A comparative study on awareness and risk management in crop insurance scheme (PMFPY) among loanee and Non-loanee farmers in Cuddalore District of Tamil Nadu.
Dr. L. K. Velayutham	Keerthi	2021	A study on producer's satisfaction on different marketing channels for major Vegetables in Villupuram District.
Dr. C. Prabakar	N. Poongothai	2021	Prospects and Problems in Apiculture- An economic analysis.
Dr. G. Srinivasan	S. Deepan Raj	2022	'A Study on Market Potential for Agro Tourism Centers with Palmyrah Farm as Major Component in Ramanathapuram District of Tamil Nadu.
Dr. R. Rengaraju	'D. Kannan	2022	An Economic Analysis of Production and Marketing of Cashew Nut in Pudukkottai District.
Dr. T. Ponnarasi	S. Keerthini	2022	A Study on Consumer Perception Towards Organic Food Products in Salem District.
Dr. S. Ravichandran	P.M. Niranjan Kumar	2022	Economic Viability of Grape Vign Yard and Problems in Production and Marketing of Grapes in Cumbum Valley of Theni District.
Dr. R. Venkataraman	D. Suganthi	2022	Impact Evaluation of Banana Producer Company in Production and Marketing of Banana – An Economic Study in Trichy District of Tamil Nadu.
Dr. G. Ramanathan	R. Sujith Sankar	2022	A Study on Consumer Perception on Cold Pressed Oil in Chidambaram Taluk, Cuddalore.

Dr. V. Banumathy	R. Vishvahini	2022	A Study on Area, Production, Price and Trade Analysis of Small Cardamom in India with Special Reference to Theni District of Tamil Nadu.
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#### 6.4.7 Feedback of Stakeholders (Students, farmers, company, parents etc.,)

An effective Mentor - mentee system is functioning at the Department level to get the feedback from the students. The institution evaluates the teachers on their teaching and research performance periodically by way of getting students' feedback and self appraisal of teachers which will be reviewed by the Head of the Department. The results of the critical review and evaluation of the feedback will be incorporated accordingly in refining the teaching skills of the faculty. The young teachers are assigned to deliver special lectures in the department to elicit constructive criticism for improvement. Parents are regularly informed about the progress of the students by the Mentor and in-turn the feedback is also received from them. Based on the feedback, necessary actions are taken by the mentor of concerned student to improve his/her progress in studies and advice him/her to develop their personality.

#### Action Taken Report

1.As per request of the students, Special lectures on new topics related to agri-business entrepreneurship are organised at regular intervals to develop their skills.

2.Coaching classes for competitive examinations like for UPSC, TNPSC, Banks and Higher education programmes are also being conducted to enable the students for their career development and employability.

#### 6.4.8 Student intake and attrition in the programme for the last five years

Name of the programme	Actual students admitted in the last five years					Attrition (%)				
	2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
MBA (Agri - Business Management)	6	10	9	5	3	-	-	-	-	-

**Employment Details of PG students**

Academic Year	Number of students graduated (PG)		No. Of students Joined in Ph.D.	Employed in					Total	Percent employed
				Central	State	Bank	Private	Entrepreneur		
	M	F								
2017-18	6	-	-				2	4	6	100
2018-19	8	2	-				4	6	10	100
2019-20	5	4	4				2	3	5	56
2020-21	2	3	3				1	1	2	40
2021-22	1	2	-				1	2	3	100

**Employment Details****MBA Agri Business - Alumni List**

Name of the Students	Year of Completion	Contact Number	Present Position
C.Arulmurugan	2017	9629381670	Chief Executive Officer in Pugazh Poly Houses FPCL - Krishnagiri.
R.Rajkumar	2017	7550318218	Assistant Professor
R.Rakesh	2018	9092895637	Working as a Assistant Manager(Micro credit) in City union bank Ltd Kumbakonam.
Reshma T.Roshin	2018	8547804305	Agricultural Officer Kottayam Kerala
A.Sarathkumar	2018	9042131985	Relationship Manager Samunnati Financial Intermediation and Services Private Limited. Tiruvannamalai
G.Puratchkodi	2019		Ph.D student
R.Radha	2019	9626434745	Ph.D student
V.Ranjith	2019		Ph.D student

N.Veni	2019		Ph.D Student
B.Aiswarya	2020		Ph.D student
A.Jaffer Sadiq Ali	2020		Ph.D student
T.Lingavarayan	2020		Ph.D student

#### 6.4.9 ICT Application in Curricular Delivery

Students are motivated and encouraged to participate actively in the class room and to have interaction with teachers using ICT tools. Students are familiar with apps and online resources related to their subjects and they learn their subjects in speedy manner. Using ICT tools, students gain skills to solve complex problems through critical thinking. To enhance the quality in research, students are encouraged to access relevant literatures from various e-websites. Students are motivated to present recent topics of relevant subjects with the use of ICT tools. Department staff members are using ICT tools for class room teaching and seminar purposes.

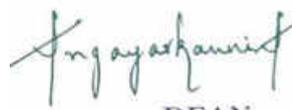
6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

A. Angayarkanni

I, the Dean ..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
 DEAN  
 FACULTY OF AGRICULTURE  
 ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Agricultural Economics

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



**M.Sc. (Agri.) Agricultural Economics**  
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6.4.12	Certificate (Applicable when SSR is submitted for Programme)	28

#### 6.4. Self Study Report for the Programme

Name of the Programme: M.Sc. (Agri.) Agricultural Economics

Offered by: Department of Agricultural Economics

##### 6.4.1. Brief History of M.Sc. (Agri.) Agricultural Economics Programme

The Department of Agricultural Economics was established in 1993 which had its beginning as Division of Agricultural Economics in 1987 with an aim to develop a strong programme in agricultural and rural development with emphasis on teaching, research and extension. The M.Sc. (Agri.) degree programme in Agricultural Economics was started during 1987.

Historical Itinerary	Year of commencement
Division of Economics	1987
Post Graduate Programme in Agricultural Economics	1987
Ph.D. Programme	1987
Department Status	1993

For the M.Sc. (Agri.) Agricultural Economics degree programme, a total of 70 credits are offered which includes 20 credits for major courses, 8 credits for minor courses, 6 credits for supporting courses, 5 credits for common courses, 01 credit for seminar and 30 credits for master's thesis research. Based on the ICAR V<sup>th</sup> Deans committee recommendations, the latest revision of the curriculum was carried out in the academic year 2022-23.

##### Distribution Pattern of Courses and Credit (Research)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Research	Credit
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14
Credit Load	20	8	6	5	1	30	70

##### Distribution Pattern of Courses and Credit (IDEA)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	IDEA	Credit
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10+10	22
Credit Load	20	8	6	5	1	30	70

### Distribution Pattern of Courses and Credit

S.no.	Course Code	Course Title	Credit
		<b>Compulsory Major Courses</b>	
1	AEC-501	Micro Economic Theory And Applications	(2+1)
2	AEC-502	Agricultural Production Economics	(1+1)
3	AEC-503	Agricultural Marketing and Price Analysis	(2+1)
4	AEC-504	Macro Economics And Policy	(2+0)
5	AEC-505	Econometrics	(2+1)
6	AEC-507	Agricultural Finance and Project Management	(2+1)
7	AEC-509	Research Methodology for Social Sciences	(1+1)
		<b>Optional Major Courses</b>	
8	AEC-506	Agricultural Development and Policy Analysis	(2+0)
9	AEC-508	Linear Programming	(1+1)
10	AEC -510	Indian Economy: History and Contemporary Issues	(2+0)
11	AEC -511	International Economics	(2+0)
		<b>Minor Courses</b>	
12	AEC 512	Institutional Economics	(2+0)
13	AEC-513	Natural Resource and Environmental Economics	(1+1)
14	AEC-514	Commodity Future Trading	(2+0)
15	AEC-515	Development Economics	(2+0)
16	AEC-516	Rural Marketing	(2+0)
17	AEC-517	Evolution of Economic Thought	(2+0)
		<b>Supporting Courses</b>	
18	STA 502	Statistical Methods for social Sciences	(2+1)
19	COM 501	Information Technology in Agriculture	(2+1)
		<b>Common Courses</b>	
20	PGS 501	Agricultural Research, Research Ethics and Rural Development Programmes	1+0

21	PGS 502	Technical Writing and Communications Skills	0+1
22	PGS 503	Basic Analytical Techniques	0+1
23	PGS 504	Library and Information Services	0+1
24	PGS 505	Intellectual Property and its Management in Agriculture	1+0
		<b>Non Gradial Courses</b>	
25	NGC 511	Disaster Management (1+ 0)	-
26	NGC 512	Constitution of India (1+ 0)	-
27	VAC	Value added course	-
28	AEC 591	<b>Master's Seminar</b>	1 (0+1)
29	AEC 599	<b>Research / IDEA</b>	30

### Vision

- To establish a Centre for Agricultural Development Policy
- To establish a Centre for Agricultural Resource Management

### Goals

- To identify and diagnose regional specific problems and evolve development policy with micro approach
- To carry out empirical research for improving agricultural resource productivity matching with the existing market conditions with the long term goal of ensuring conservation and sustainable use of resource endowments.

### Objectives

- To study the socio economic problems of agricultural labourers and the need for intervention with partial farm mechanisation.
- To undertake research on improving the economic efficiency and its optimization of resources like water and other capital inputs.

### Strategic plan to achieve Vision and Goal (M.Sc. (Agri.) Agricultural Economics)

Goal	Objectives	Implementation plan	Performance Metrics/Timeline	Out come
Identify and diagnose regional specific problems and evolve development policy with micro approach	To Study The Socio Economic Problems of Agrl Labour and the Need For Intervention With Partial Farm Mechanisation.	Base line survey for assessing the socio economic status exploring the farm mechanisation opportunities assessing the economic feasibility of labour substitution	2023	accommodating the labour shift and ensuring their livelihood security
To carry out empirical research for improving agricultural resource productivity matching with the existing market conditions with the long term goal of ensuring conservation and sustainable use of resource endowments.	to undertake research on improving the economic efficiency and its optimization of resources like water and other capital inputs.	- collect primary data for specific objectives set forth  - developing models for resource optimization	2023	reduce the cost of resource use, conserving the resources and ensuring its sustainability.

#### Accomplishments

- The Division of Agricultural Economics was established by the dedicated efforts taken by the first and former Head of the Department Dr.P.Zeauden. Subsequently, the Department was headed by Dr.K.R.Sundaravaradarajan (2004-2015), by Dr.K.Sita Devi (2015-2018), by Dr. V. Banumathy (2018-2021) and presently by Dr.G.Ramanathan.
- Alumni of this Department occupied various positions in State Planning Commission, Nationalized banks, Coconut board and state universities. Research is the other major focus of the Department besides teaching.
- The staff members of the Department are working in various fields of their specialization and periodically submitting research proposals on thrust areas viz., natural resource economics, environmental economics and trade, agricultural finance, women studies, agricultural marketing, and fisheries economics for funding from national and international agencies.
- The expertise of the staff members in the specialized fields caters to the needs of the present day education systems and the research works relevant to the rapidly changing socio – economic environment.

- The Research Projects are funded by various agencies viz., DBT, UGC, NMPB, ICSSR, ICAR-NATP, SANEI, DST-NIMAT, NABARD, REPCO, MHRD, MOFPI, TNSCHE, TNSCST, NGO, etc. Three Endowments viz., Srilochani Varadarajulu Prize, Vallalar endowment and GVR Kodialam Trust Prize are constituted for the first rank holders in Agrl. Economics.
- PG and Ph.D. scholars are using available learning resources such as 311 text and reference books, 201 PG and 19 Ph.D. theses, four national journals with 10 bound back volumes for their research.
- Agricultural Marketing Intelligence Cell was established in the year 2013 with the objective to cater to the needs of the farmers regarding the market prices of agricultural commodities in Cuddalore district and the neighbouring districts.
- The Department has mobilized research funds to the tune of Rs 33.74 lakhs from various funding agencies, Rs 8 lakhs from IMPRESS-ICSSR, Rs. 3.74 lakhs from State Planning Commission, Rs. 22 Lakhs from Tamil Nadu State Council for Higher Education.

Category	Total Period (Upto 2016)	Last five year period (2017-2022)
Number of Publications (Journal articles)	212	101
Number of Publications (Seminars/Conferences/Symposia)	92	40
Number of Books & Book chapters	12	15
Number of Projects obtained	11	5
Grant mobilization (Lakh rupees)	54	35
Number of Ph.D.s produced	11	08
Number of PGs produced	119	82
Number of Seminars/Conferences/Workshops organized	17	8
Number of Awards received by the Faculty	4	3
Number of professional visits of the faculty to abroad	10	-

### Salient research achievements of the Department

1. Agricultural Market Intelligence Cell (AMIC) is functioning in the Department to equip the PG students in the art of using various software packages in price forecasting of various agricultural commodities in Cuddalore district. In future, it would be extended to benefit the farmers of Cuddalore and neighbouring districts in updating market information on agricultural commodities.
2. The policies recommended by the department from its research output will help in implementing the modalities for socio-economic empowerment of fisher women SHGs.
3. The research findings for the study in "Labour Scarcity and its impact on Agriculture" will help in evolving cost effective technological intervention strategies to solve the problems of labour scarcity in agriculture.

#### 6.4.2. Faculty Strength

Presently the Department's teaching, research and extension mandates are well taken care of with thirteen faculty members who have specialized in various fields of Agricultural Economics.

Sl. No.	Cadre	Faculty in place (as on August 2022)	Vacant Position	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	5	-	-
2	Associate Professor*	5	-	1
3	Assistant Professor*	3	-	3
	<b>Total</b>	<b>13</b>	<b>-</b>	<b>4</b>

\*Assigned Responsibilities for Multiple Programmes

**Faculties from other Department to undertake the M.Sc.(Agri.) common course**

Sl. No.	Cadre	Faculty in place (as on August 2022)	Other Department	
1	Professor**	-		-
2	Associate Professor**	1	• Statistics	-
3	Assistant Professor**	2	• Computer Science • English	-

\*\* The services of staff from Department of Statistics, Department of Computer and Information Science, and Department of English are availed.

### Credentials of the Faculty

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided (2017-2022)		Total number of publications (Till Date)	Total number of Publications (2017 to 2022)
				PG	Ph.D.		
1.	Dr. G. Ramanathan, M.Sc. (Ag.), Ph.D. Professor & Head	28	Production Economics and Econometrics	6	-	12	2
2.	Dr.K.R.Sundaravaradarajan, M.Sc. (Ag.), M.B.A., Ph.D. Professor	35	Natural Resource Economics, Agri business Management & Trade	6	1	47	3
3.	Dr. K. Sita Devi, M.Sc. (Ag.), Ph.D. Professor	30	Development and Policy & Women Studies	6	1	58	24
4.	Dr. V. Banumathy, M.Sc. (Ag.), Ph.D. Professor	29	Agricultural Marketing & Supply Chain Management	4	1	26	5
5.	Dr. R. Venkataraman, M.Sc. (Ag.), Ph.D. Professor	28	Natural Resource and Environmental Economics	6	3	24	6
6.	Dr. S. Ravichandran, M.Sc. (Ag.), Ph.D. Associate Professor	22	Agricultural Marketing and Resource Economics	5	-	17	6
7.	Dr. G. Srinivasan, M.Sc. (Ag.), M.B.A., Ph.D. Associate Professor	20	Agricultural Finance and Agribusiness Management	5	-	15	5

8.	Dr. T. Ponnarasi, M.Sc. (Ag.), Ph.D. Associate Professor	21	Development and Policy & Women Studies	5	-	30	16
9.	Dr. C. Prabakar, M.Sc. (Ag.), Ph.D. Associate Professor	19	Macro Economics	7	2	30	20
10.	Dr. D. Velmurugan, M.Sc. (Ag.), Ph.D. Associate Professor	18	Environmental Economics	7	-	12	4
11.	Dr. R. Rengaraju, M.Sc. (Ag.), Ph.D. Assistant Professor	21	Agricultural Marketing	3	-	12	2
12.	Dr. L.K. Velayutham, M.Sc. (Ag.), Ph.D. Assistant Professor	18	Production Economics	6	-	14	4
13.	Dr.R.Selvakumar, M.Sc. (Ag.), Ph.D. Assistant Professor	15	Natural Resource and Environmental Economics	7	-	16	4

**Awards/ Recognitions & Abroad visits of the Faculty**

Sl. No.	Name of the Faculty	Awards / Recognitions	Countries visited & purpose
1.	Dr. K.R. Sundaravardarajan	Best Agricultural Trainer, 2019	
2.	Dr. K.R. Sundaravardarajan	Doctor Issac Award, 2019	
3.	Dr. C. Prabakar	World Intellectual Property Accreditation Ingenious Award, 2021	



## List of funded Projects (2017 to 2022)

Sl. No.	Title of the Project	Name of the Principal Investigator/ Co-Investigator	Period	Sponsoring Agency	Amount Sanctioned (in lakh Rupees)
1.	Constraint Analysis on Getting Land Availability in Coastal Areas of Tamil Nadu.	Dr.K.R. Sundaravaradarajan	2017-19	State Planning Commission	2.99
2.	Tree Farming as a Choice for Land Use Pattern in Coastal Areas of Northern Tamil Nadu.	Dr.K.R. Sundaravaradarajan	2021-22	State Planning Commission	0.75
3.	Doubling the Farmers Income Through Protected Cultivation Technology – An Economic Evaluation Study in Tamil Nadu	Dr. S. Ravichandran Dr. R. Venkataraman	2019-21	IMPRESS, ICSSR	8.00
4.	Remodeling of Existing Farming System Towards Risk Optimization in Cauvery Delta Zone of Tamil Nadu	Dr. C. Prabakar Dr. K. Sita Devi Dr. R. Selvakumar	2021-24	Tamil Nadu State Council for Higher Education, Chennai	22.00
				<b>Total</b>	<b>33.74</b>



### 6.4.3. Technical and Supporting Staff

Four technical and supporting staff members in the Department are helping in academic, research and administrative activities (as on August 2022).

Sl. No.	Sanctioned Posts	Staff in place	Responsibilities
1.	Assistant (Helper)	1	Office file maintenance, department stock maintenance, assisting in the preparation of department level academic and administration reports and leave register maintenance. Preparation of work load, time table preparation, helping in the PG and Ph.D admission process.
2.	Lab Assistant (Programmer, Asst. section officer, Helper)	3	Assists and guides students in computer lab during practical classes.

### 6.4.4. Classrooms and Laboratories

The Department (Computer Science + Statistics) has 30 computers, one camera and one interactive smart class room for conducting UG and PG programmes. The software SPSS, STRATA, R-Programming and E-views are available in the Department for the use of students to pursue their research and data analysis.

Sl. No.	Facility	Number	Area (Sq.ft)	Description
1.	Computer room (at Agrl. Economics)	1	285	Wi-Fi enabled with computer lab with 5 PCs.
2.	Library	1	266	311 - Text and Reference Books 201 - PG Theses, 19 Ph.D thesis
3.	Ph.D. Class room (Hi-Tech Hall)	1	551	Interactive smart class room with LED TV and e-Podium
4.	PG Class room	1	551	LCD projector enabled class room
5.	UG Lab (New Block)	1	1218	Class room with necessary e-teaching aids.
	<b>Common facility</b>			
6.	Statistics & Computer Lab	1	1139	Wi-Fi enabled with computer lab with 30 PCs.

7.	Software			Software -SPSS, STRATA, R-Programming and E-Views
7.	Digital Still Camera	1		Sony Cyber-shot(DSC-H70)
8.	Handy cam 50X	1		Sony (DCR-SR20)

#### 6.4.5. Conduct of Practical and Hands-on-Training

For M.Sc.,(Agri) practical class, total strength of 20 students will be treated as one batch. Teacher student ratio is 1:4. Practical classes are handled to expose the students to practical utility of agricultural economics principles by explaining them and solving the example problems using hypothetical data. Field visits are arranged to collect the actual data from farmers regarding cost of cultivation, cropping pattern, production details to understand production economics and farm management techniques. Visits are also arranged to various marketing and financial institutions to know the objectives, function and role of these institutions in agricultural development. Term papers are assigned to the students by the teacher for subjects with theory and practical. Term papers should cover a wide range of topics within the subject limits. The topic should be different from that of the credit seminar. Term paper will be evaluated during practical examination. Class assignments have also given to the students and asked them to present during class hours.

#### 6.4.6. Supervision of students in PG programme

During thesis research, each PG student will have an advisory committee which is formed before end of the first semester to facilitate the student in carrying the assigned thesis programme. For master's programme, the advisory committee shall comprise of a chairman and two members of which, one member shall be from the major discipline and another from any other discipline in the related field of thesis research. The chairman of the advisory committee will guide throughout the program of the student for the selection of topic for thesis research and seminar, continuous monitoring of thesis research and maintaining research monitoring register for each student. Weekly once the student's progress is reviewed by the chairman. At the end of the each semester, the evaluation of research is done by the advisory committee members.

Only those students who successfully completed the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of written and oral examination. The advisory committee shall conduct the qualifying viva-voce examination with the external member, who shall be a specialist in the subject from outside the university. The Heads of departments will monitor and coordinate the conduct of the qualifying viva. The performance of the candidate will be graded as Satisfactory / Unsatisfactory.

The topic of thesis research to be carried out by the student will be assigned by the Chairman of the Advisory Committee in consultation with the Head of the Department concerned. After assigning the topic, each student may be instructed to submit a detailed programme of work to be carried out by him/her during the semester in the prescribed proforma. The evaluation of research work done by the student should be based on the approved programme. After completion of 80% attendance for research and on or before the last day of the semester, the advisory committee should evaluate the progress of research work as per the approved programme and monitoring

register and award satisfactory or unsatisfactory depending upon quantity and quality of work done by the student during the semester.

Mid-semester examinations are conducted for each subject as per the scheme drawn by the Head of the Department/ PG coordinator and evaluated. The evaluated answer scripts are shown to the students. Writing the mid-semester examination is a pre-requisite for writing the final theory and practical examinations. If a student does not appear for MSE, he/she is not eligible to appear for the final examinations. Such candidate has to reappear for the MSE as and when the respective examinations are conducted only after getting permission from the Dean, Faculty of Agriculture on payment of fee prescribed by the University. The final theory and practical examinations will be conducted separately by the University. Theory examinations will be conducted before practical examinations. The final theory and practical examinations will be evaluated by two examiners (one will be the internal and another will be external).

**List of M.Sc.(Agri.) Agricultural Economics Thesis work Completed**

S.NO	Name of the Faculty	Name of the Students Guided	Year of Submission	Title of Thesis
1	Dr. R. Rengaraju	S. AgalyaRubasri	2017	Economic analysis in marketing of minor herbal crops in Keeralalayam Block.
2	Dr. G. Srinivasan	K. Arulmani	2017	An economic analysis of production and marketing of tamarind in Dharmapuri district of Tamil Nadu
3	Dr. C. Prabakar	G. Geethanjali	2017	An economic analysis of Layer poultry in Namakkal District
4	Dr. L. K. Velayutham	G. Kokila	2017	An economic analysis of production and marketing of Rose in Hosur Taluk of Krishnagiri district
5	Dr. D. Velmurugan	M. Merlin	2017	An economic analysis of production and marketing of natural Rubber in Kanyakumari District of Tamil Nadu
6	Dr. R. Selva Kumar	R. Mohanraj	2017	Economic study of Sago processing industries in Salem District of Tamil Nadu
7	Dr. V. Banumathy	C. Palanisamy	2017	Study on Sugarcane production using Sustainable Sugarcane Initiative (SSI) in Thirukovilur Block Villupuram district – An Economic Analysis
8	Dr. K. Sita Devi	T. Pavithra	2017	Impact of MGNREGA on Rural women livelihood in Krishnagiri district

9	Dr. Venkataraman R.	R. Rubanesh	2017	Comparative advantage Conjunctive water use over independent surface in ground water uses – an economic study in Karur district of Tamil Nadu
10	Dr. S. Ravichandran	S. Santhakumar	2017	Economic analysis of Mango production and Pulp processing industries in Krishnagiri district of Tamil Nadu
11	Dr. R. Rengaraju	S.R. Sikku	2017	An economic analysis of production and marketing of Coconut intercropping in Thiruvattar District
12	Dr. T. Ponnarasi	M. Sathish	2017	Food Security- Evidence from the Households of Cuddalore District
13	Dr. G. Ramanathan	B. Prasanth	2017	An economic analysis study of production and marketing of Grapes in Theni District of Tamil Nadu
14	Dr. G. Srinivasan	S.M. Sutharsanam	2017	An economic analysis of production and marketing of major pulses in Salem district of Tamil Nadu
15	Dr. C. Prabakar	S. Vengadesh	2017	An economic analysis of production and marketing of Madurai Malli in Tamil Nadu
16	Dr. R. Rengaraju	S. Pramothkumar	2018	An economic analysis of production and marketing of turmeric in Erode District of Tamil Nadu
17	Dr. L. K. Velayutham	M. Arulkumar	2018	An economic analysis of production and marketing of maize in Veppanthattai Taluk of Perambalur District
18	Dr. D. Velmurugan	M.Ashok Kumar	2018	An economic study on women dairy co-operative society in Thiruvannamalai District of Tamil Nadu
19	Dr. R. Selva Kumar	R. Azhagesan	2018	An economic study of crop insurance (PMFBY) on paddy farming in Thiruvannamalai District in Tamil Nadu
20	Dr. K. R. Sundaravaradarajan	K. Bhuvenshwari	2018	Impact of Agriclincs and AgriBusinessCentres (ACABC) in Tamil Nadu – An economic Analysis
21	Dr. K. Sita Devi	Chinnatonia	2018	An economic analysis of production,

		Rajesh		marketing and export of FCV Tobacco in Prakasam District
22	Dr. V. Banumathy	A.Gawaskar	2018	Study on Consumption pattern and Food security status of Rural household in Cuddalore district
23	Dr. G. Ramanathan	M. Kalaivani	2018	An economic analysis of precision farming in Krishnagiri district of Tamil Nadu
24	Dr. R. Venkataraman	N. Mohanasundaram	2018	Economical and Environmental Impact of Sago effluents of agriculture in Salem district
25	Dr. S. Ravichandran	P.Mohan Raj	2018	Demand and supply of agricultural credit farm sector in Namakkal district of Tamil Nadu
26	Dr. T. Ponnarasi	K.Muthulakshmi	2018	Study of marketing and price spread of fish in Cuddalore district of Tamil Nadu
27	Dr. G. Srinivasan	S.Radhakrishnan	2018	An economic analysis of production and marketing of tuberose in Thiruvannamalai district of Tamil Nadu
28	Dr. C. Prabakar	K.Rahul	2018	Economic analysis of production and marketing of tapioca in Salem district
29	Dr. D. Velmurugan	S.Santhosh Kumar	2018	An economic analysis of drought in Thoothukudidistrict in Tamil Nadu
30	Dr. R. Selva Kumar	R.Satheesh	2018	An economic analysis of production and marketing of Aggregatum Onion in Perambulaur district of Tamil Nadu
31	Dr. K. R. Sundaravaradarajan	M.Sathish Kumar	2018	Economics of land availability for greening the coastal area in selected district of Tamil Nadu
32	Dr. K. Sita Devi	K.Sivaranjini	2018	A comparative study on socio economic status of farm and non – farm women labourers in Trichirrapalli district
33	Dr. V. Banumathy	M.Vignesh	2018	An analytical study of marketing of milk in Krishnagiri district
34	Dr. G. Ramanathan	M.Vijay Anand	2018	A study on impact MGNREGS on 35agricultural labour in Villupuram district of Tamil Nadu

35	Dr. Venkataraman R.	R. Bala	2019	Economic efficiency of internal water markets in irrigated agriculture – A study in Cuddalore District
36	Dr. S. Ravichandran	G. Banumathi	2019	A Socio – Economic analysis of Cashew production in Ariyalur District, Tamil Nadu.
37	Dr. T. Ponnarasi	Esaiyaruvi	2019	Socio – economic status of SHG and Non – SHG, Women in Nagapattinam District, a comparative study
38	Dr. K. Sita Devi	E. Gayathri	2019	Impact of migration on livelihood diversification o rural households in Pudukkottai District – An economic analysis
39	Dr. G. Srinivasan	V. Gokulnath	2019	An economic analysis of production and marketing of Gerbera under greenhouse cultivation in Hosur Block of Krishnagiri District
40	Dr. C. Prabakar	K. Indhirakumari	2019	An economic analysis on the production and marketing of Arecanut in Salem District
41	Dr. L. K. Velayutham	J. Jeevamathi	2019	An economic analysis of production and marketing of Guava in Thiruvannainallur Block of Villupuram District
42	Dr. D. Velmurugan	R. Karthick	2019	An economic analysis of production and marketing of Chrysanthemum in Nallampalli Block of Dharmapuri District
43	Dr. R. Selva Kumar	M. Mangaiyarkarasi	2019	An economic analysis of production and marketing of Amla in Tiruppur District
44	Dr. K. R. Sundaravaradarajan	M. Manimegalai	2019	Economic analysis of bio-inputs usage with special reference to Paddy Crop in Puducherry District
45	Dr.K.Sita Devi	C. Manimozhi	2019	Impact of tannery effluents on agriculture in Alangayam Block of Vellore District – An economic analysis.
46	Dr. V. Banumathy	V. Manimozhi	2019	An economic analysis of production and marketing of Capsicum under protected cultivation in Hosur Block.

47	Dr. G. Ramanathan	S. Muzhamilkhan	2019	An economic analysis of production and marketing of Sunflower in Karur District of Tamil Nadu.
48	Dr. Venkataraman R.	R. Rajalakshmi	2019	Water quality and its impact on agriculture – An economic study in the tannery effluents polluted areas of Dindigul District, Tamil Nadu.
49	Dr. S. Ravichandran	J. Roselyn	2019	An economic analysis of production and marketing of Natural Rubber in Kanyakumari District, Tamil Nadu.
50	Dr. T. Ponnarasi	N. Srinath	2019	An economic analysis of household consumption expenditure in Cuddalore District.
51	Dr. G. Ramanathan	M. Subha Shree	2019	Technical efficiency in paddy production a comparative study of System of Rice Intensification (SRI) and Traditional method of cultivation in Nagapattinam District.
52	Dr. G. Srinivasan	Rp. Suregaa Sri	2019	An economic analysis of production of Desiccated Coconut in Coimbatore District of Tamil Nadu.
53	Dr. C. Prabakar	V. Vaitheeswari	2019	An economic analysis on the production and trade prospects of Coconut
54	Dr. L. K. Velayutham	S. Vishnu Prabhu	2019	An economic analysis of production and marketing of Horse Gram in Denkanikottai Taluk of Krishnagiri District.
55	Dr. D. Velmurugan	G. Arun Prasath	2020	Economic research on contuning impact of Noyyal river pollution in ground water agriculture in Avinosh Block of Tiruppur District of Tamil Nadu.
56	Dr. R. Selva Kumar	V. Balaji	2020	An economic analysis of production and marketing of Cabbage in Krishnagiri District, Tamil Nadu.
57	Dr. V. Banumathy	D. Balakumar	2020	An economic analysis of production and marketing of Honey in Virudhunagar District, Tamil Nadu.
58	Dr. K. R.	K. Girija	2020	An economic analysis of production and marketing of Casuarina in

	Sundaravaradarajan			Villupuram, Tamil Nadu.
59	Dr. K. Sita Devi	K. T. Jayanandhan	2020	Impact of financial inclusion through Pradhan Mantri Jan Dhan Yojana (PMJDY) on rural livelihoods of Salem District – An economic analysis.
60	Dr. G. Ramanathan	R. Keerthana	2020	An economic analysis of production and marketing of Moringa in Tiruppur District, Tamil Nadu.
61	Dr. R. Venkataraman	V. Nandhini	2020	Economic efficiency of Solar and electric powered well irrigation system in Villupuram District of Tamil Nadu.
62	Dr. S. Ravichandran	M. Prakash	2020	An economic analysis of production and marketing of Hybrid Seed and Fiber Cotton in Kallakurichi District, Tamil Nadu.
63	Dr. R. Rengaraju	T. Sakthivel	2020	Comparative economic analysis of Organic and Inorganic Turmeric production in Erode District.
64	Dr. G. Srinivasan	S. Sanjeev Kumar	2020	An economic analysis of Castor value chain in Namakkal District of Tamil Nadu.
65	Dr. C. Prabakar	R. Singaravel	2020	An economic analysis of production and marketing of Banana leaf in Thanjavur District of Tamil Nadu.
66	Dr. L. K. Velayutham	M. Soundariyan	2020	An economic analysis of production and marketing of Groundnut in Thiruvannamalai District.
67	Dr. D. Velmurugan	S. Venkatesan	2020	An economic study among members and non-members of a farmer producer organization in Dharmapuri District of Tamil Nadu.
68	Dr. R. Selva Kumar	M. Vignesh	2020	An economic analysis of production and marketing of Banana in Kanyakumari District.
69	Dr. T. Ponnarasi	N. Prasanth	2020	An economic analysis of household consumption expenditure in Nagapattinam District.
70	Dr. K. R.	Indiya	2021	An economic analysis of price fluctuations

	Sundaravaradarajan			for Tomato and Onion.
71	Dr. K. Sita Devi	M. Jasim Ahemed	2021	An economic analysis of production and marketing of annual Moringa in Ariyalur District.
72	Dr. V. Banumathy	M. Karthikeyan	2021	An economic analysis of production and marketing of Carrot in Hosur Taluk of Krishnagiri District.
73	Dr. G. Ramanathan	T. Kathirolu	2021	An economic analysis of production and marketing of Papaya in Modakurichi Block of Erode District.
74	Dr. R. Venkataraman	T. KuzhalArasan	2021	Economic evaluation of tank irrigation system – A case study of Uthiramerur Tank in Kanchipuram District of Tamil Nadu.
75	Dr. S. Ravichandran	R. Rajkumar	2021	An Economic Study of Livestock and Livelihood of Small and Marginal Farmers in Morappur Block of Dharmapuri District of Tamil nadu
76	Dr. T. Ponnarasi	M. Sethuraman	2021	An economic analysis of production and marketing of Chilli in Ramanathapuram District
77	Dr. R. Rengaraju	P. Sivasakthi	2021	Comparative study of Cotton production under contract and non- contract farming in Kallakurichi District of Tamil Nadu.
78	Dr. G. Srinivasan	K. Sownsel	2021	An economic analysis of production and marketing of Jaggery in Namakkal District.
79	Dr. C. Prabakar	R. Surjith	2021	Oppurtunities and obstacles in onion trade- an economic analysis
80	Dr. L. K. Velayutham	M. Sushmitha	2021	An economic analysis of production and marketing of Black Gram in Thiruvannamalai District.
81	Dr. D. Velmurugan	K. Susmitha	2021	A comparative study on livelihood of tribal and non-tribal households in Coimbatore District of Tamil Nadu.
82	Dr. R. Selva Kumar	S. Swathi	2021	An analysis of contract farming and non-contract farming in Sugarcane cultivation of Namakkal District in Tamil Nadu.

83	Dr. K. R. Sundaravaradarajan	G. Vinoth Kumar	2021	Economic impact of fall Armyworm on Maize in Villupuram District, Tamil Nadu.
84	Dr. K. Sita Devi	M. Kuppusamy	2022	A Comparative Economics of Irrigated and Rainfed Cotton in Dharmapuri District.
85	Dr. V. Banumathy	V. Moushiga	2022	An Economic Analysis of Gherkin Cultivation in Natham Block of Dindigul District, Tamil Nadu.
86	Dr. G. Ramanathan	S.S. Pooja	2022	Growth and Export Performance of Coconut Products in India.
87	Dr. S. Ravichandran	S. Preethi	2022	Comparative Economics of Production, Processing and Marketing of Sugarcane and Jaggery in Salem District of Tamil Nadu.
88	Dr. T. Ponnarasi	T. Ram Kumar	2022	An Economic Analysis of Production and Marketing of Groundnut in Bargur Block of Krishnagiri District.
89	Dr. R. Rengaraju	D. Rithika	2022	An Economic Analysis of Production and Marketing of Tomato in Tirupathur District.
90	Dr. G. Srinivasan	C. Saranya	2022	A Study of Impact of Covid-19 on Rural Women Self Help Groups in Pondicherry District of Pondicherry Union Territory.
91	Dr. C. Prabakar	Chowdula Shireesha	2022	A Socio-Economic Analysis on Shrimp Culture in Coastal Andhra Pradesh.
92	Dr. D. Velmurugan	V. Vijay	2022	An Economic Analysis of Goat Rearing in Villupuram District of Tamil Nadu.
93	Dr. R. Selvakumar	R. Yogeshwari	2022	A Socio-Economic Analysis of Marine Fisheries in Cuddalore District of Tamil Nadu.

**6.4.7. Feedback of stakeholders (Students, farmers, company, parents etc.)** An effective Mentor - mentee system is functioning at Department level to get feedback from the students. The institution evaluates the teachers on their teaching and research performance periodically by way of getting students' feedback and self appraisal of teachers which will be reviewed by the Head of the Department. The results of the critical review and evaluation of the feedback will be incorporated accordingly in refining the teaching skills of the faculty. The young teachers are assigned to deliver special lectures in the department to elicit constructive criticism for improvement. Parents are regularly informed about the progress of the students by the Mentor and in-turn the feedback is also received from them. Based on the feedback, necessary actions are taken by the mentor of concerned student to improve his/her progress in studies and advice him/her to develop their personality.

**Action Taken Report**

1.As per request of the students , Special lectures on new topics were organised to develop their skills.

2.Coaching classes were conducted for UPSC, TNPSC, Banks and Higher studies to improve their personality development skills, analytical , reasoning ability etc.,

**6.4.8. Student intake and attrition in the programme for the last five years**

Name of the programme	Actual students admitted in the last five years					Attrition (%)				
	2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
M.Sc. (Ag) Agricultural Economics	15	19	20	15	14	-	-	5	-	

**Student Progression**

Academic year	Name of the student		Year of Passing
	Ph.D in ICAR Institutes and State SAU's	NET/ARS qualified	
2016-2018	K.Muthulakshmi (1650140022)		2018
2018-2020		G. Arun prasanth (1850140011) S. Sanjeevkumar (1850140016)	2021

**Employment Details of PG students**

Academic Year	Number of students graduated (PG)		No. Of students Joined in Ph.D.	Employed in					Total	Percent employed
				Central	State	Bank	Private	Entrepreneur		
	M	F								
2017-18	11	4	3	-	-	3	5	4	12	80
2018-19	15	4	4	-	-	5	9	1	15	79
2019-20	5	15	7	-	-	1	8	4	13	65
2020-21	12	3	6	-	-	-	6	3	9	60
2021-22	9	5	2	-	-	-	10	2	12	86

**Employment Details****M. Sc. (Agricultural Economics) Alumni List (2017 - 2022)**

Name of the Students	Year of Completion	Contact Number	Present Position
S. Agalya Rubasri	2017	7403333992	Ph.D, Annamalai University
K. Arulmani	2017	9655969663	Ph.D. Annamalai University
G. Kokila	2017	8870785128	Ph.D,

Department of Agricultural Economics

			Annamalai University
T. Pavithra	2017	9865652603	Assistant Technology Manager, ATMA Scheme – Krishnagiri District
R. Rubanesh	2017	9159149554	Assistant Professor, Dhanalakshmi Srinivasan Agriculture College
S. Santhakumar	2017	9600250430	Ph.D, Annamalai University
M. Sathish	2017	9585841033	Development Officer SPIC Chennai Region

M. Arulkumar	2018	9025445836	Branch Sales Officer HDFC Bank, Chennai.
M.Ashok Kumar	2018	82203 66834	Vennaru collective FPC limited Nagapattinam
R. Azhagesan	2018	8838898496	Ph.D, Annamalai University
K. Bhuvenshwari	2018	7845526051	Ph.D, Annamalai University
A.Gawaskar	2018	7639233865	Chief Executive Officer Farmers Producers Company Pudukottai.
P.Mohan Raj	2018	9629654598	Crop Insurance Scheme, Namakkal
K.Muthulakshmi	2018	8438117050	Ph.D, TNAU, Coimbatore
S.Radhakrishnan	2018	9025734569	Ph.D, Annamalai University
K.Rahul	2018	8838539211	Ph.D, Annamalai University
S.Santhosh Kumar	2018	96398961604	Paramparagat Krichi Vikas Yojana Scheme (Organic Farming) Krishnagiri.
R. Bala	2019		Ph.D Annamalai University
G. Banumathi	2019	9080436906	Assistant Professor, PRIST University, Thanjavur
E. Gayathri	2019	7904097185	Ph.D Annamalai University
V. Gokulnath	2019	90476 1007	CEO- Aravai Murungi FPO Karur

Department of Agricultural Economics

J. Jeevamathi	2019	9751707076	Ph.D Annamalai University
R. Karthick	2019	9750724896	Ph.D Annamalai University
M. Manimegalai	2019	9361292515	Ph.D Annamalai University
J. Roselyn	2019	9524262232	Ph.D Annamalai University
N. Srinath	2019	8072218524	Ph.D Annamalai University
S. Vishnu Prabhu	2019	9944226183	Assistant Professor, Pushkaram College of Agriculture Sciences, Pudukkottai
G. Arun Prasath	2020	7373396384	Ph.D Annamalai University
V. Balaji	2020	9994453580	Ph.D Annamalai University
V. Nandhini	2020	9597651143	Ph.D, Annamalai University
M. Prakash	2020	8344957857	Assistant Professor, Don Bosco College of Agriculture, Ranipet
S. Sanjeev Kumar	2020		Ph.D, Annamalai University
R. Singaravel	2020	8122668671	Ph.D, Annamalai University
M. Soundariyan	2020	9361918910	Assistant Professor, Thanthai Roever Institute of Agriculture & Rural Development, Perambalur
M. Vignesh	2020	7867992767	Ph.D,

			Annamalai University
N. Prasanth	2020	9942969173	Ph.D, Annamalai University
M. Karthikeyan	2021		Ph.D, Annamalai University
T. Kathirolu	2021	9095770258	Assistant Professor, SRS Institute of Agriculture & Technology,
R. Rajkumar	2021	7550318218	Assistant Professor, MIT College of Agriculture & Technology, Musuri
K. Susmitha	2021		Ph.D, Annamalai University

#### 6.4.9. ICT Application in Curricular Delivery

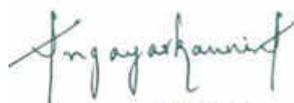
Students are motivated and encouraged to participate actively in the class room and to have interaction with teachers using ICT tools. Students are familiar with apps and online resources related to their subjects and they learn their subjects in speedy manner. Using ICT tools, students gain skills to solve complex problems through critical thinking. To enhance the quality in research, students are encouraged to access relevant literatures from various e-websites. Students are motivated to present recent topics of relevant subjects with the use of ICT tools. Department staff members are using ICT tools for class room teaching and seminar.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean .....A. Angayarkanni..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Agricultural Extension Education

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



## M.Sc. (Agri.) Agricultural Extension Education

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6.4.12	Certificate (Applicable when SSR is submitted for Programme)	

**6.4. SELF STUDY REPORT**  
**M.Sc. (Agri.) Agricultural Extension Education**

**Offered by: Department of Agricultural Extension**

**6.4.1 BRIEF HISTORY OF PROGRAMMES OFFERED**

The Division of Agricultural Extension was established in 1958 and it was uplifted as a department in 1994.

Historical Itinerary	Year of Commencement
Division of Agricultural Extension	1958
Department of Agricultural Extension	1994
M.Sc. (Agri.) Agricultural Extension	1994-2021
M.Sc. (Agri.) Agricultural Extension Education	2022

The Department of Agricultural Extension is offering M.Sc.(Agri.) Agricultural Extension Education degree programme as per the 5<sup>th</sup> Deans committee recommendations and ICAR- BSMA recommendations 2021.

**Distribution Pattern of Courses and Credits (Research)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Research	Credit Load
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14
Credit Load	20	8	6	5	1	30	70

**Distribution Pattern of Courses and Credits (IDEA)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	IDEA	Credit Load
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10 +10	22
Credit Load	20	8	6	5	1	30	70

**Distribution of Courses**

S.No.	Course Code	Course Title	Credit Hours
		<b>Major courses (Any seven)</b>	
1	EXT 501	Extension Landscape	2(2+0)
2	EXT 502	Applied Behaviour Change	3(2+1)
3	EXT 503	Organisational Behaviour and Development	3(2+1)
4	EXT 504	Research Methodology in Extension	3(2+1)
5	EXT 505	Capacity Development	3(2+1)

6	EXT 506	ICTs for Agricultural Extension and Advisory Services	3(2+1)
7	EXT 507	Evaluation and Impact Assessment	3(2+1)
8	EXT 511	Advances In Communication and Extension Management	3(2+1)
9	EXT 512	Development Perspectives of Extension Education	2(1+1)
<b>Minor Courses(Any three)</b>			
10	EXT 508	Managing Extension Organizations	3(2+1)
11	EXT 509	Enabling Innovation	2 (1+1)
12	EXT 510	Gender Mainstreaming	3(2+1)
13	EXT 513	Advances in Agricultural Extension	3(2+1)
<b>Supporting Courses</b>			
14	STA 502	Statistical Methods for Social Sciences	3(2+1)
15	COM 502	Computer Applications for Agricultural Extension Research	3(2+1)
<b>Common Compulsory Courses</b>			
16	PGS 501	Library and Information Services (Library Science)	1 (0+1)
17	PGS 502	Technical Writing and Communication Skills (English)	1 (0+1)
18	PGS 503	Intellectual Property and its Management in Agriculture	1 (1+0)
19	PGS 505	Agricultural Research, Research Ethics and Rural Development Programme	1(1+0)
20	PGS 506	Laboratory Techniques for Audio and Video Production	1 (0+1)
<b>Non Credit Courses</b>			
21	NGC 511	Disaster Management (Contact hour: 1)	-
22	NGC 512	Constitution of India (Contact hour: 1)	-
23	VAC	<b>Value Added Course</b>	-
24	EXT 591	<b>Master's Seminar</b>	1(0+1)
25	EXT 596/ 597/598/599	<b>Research / IDEA</b>	30

### Vision

- To train students in the process of transfer of technology and to conduct research for evolving efficient methods of transfer of technology.
- To organize seminars and conferences and bring out research publications.
- Organizing and conducting research on extension aspects.
- To train the PG scholars to become good leaders and motivators.
- To train the PG scholars to become good administrators with social responsibility.

### Goals

- To train the students keeping in mind the guidelines of ICAR.
- To provide hands on training to the students on the extension aspects.
- To enhance the field knowledge and instructive skills of the students
- To motivate the students to develop new extension technologies and publish in high impact journals.
- To encourage the scholars to take agro based industries.
- To promote research on sustainable agricultural development

### Objectives

- To teach various extension techniques.

- To teach the principles and steps in programme planning and about development programmes for rural development
- To teach the various concepts related to diffusion and adoption of agricultural innovations.
- To train the students to gain knowledge and skills in understanding the concepts of Information and communication technologies.
- To impart quality education to PG scholars

### Strategic plan to achieve Vision and Goals

Goals	Objectives	Implementation plan	Performance Metrics/Timeline	Outcomes
Providing quality education with instructional capacity and inculcating new approach and skills in the field of Extension with a wide range of learning experiences.	To provide advanced education in the field of Agricultural Extension.	Regular upgradation of course content.	Once in three years.	A regularly updated curriculum adds up to the domain knowledge of the students. They are well trained as future ambassadors of Extension equipped with better communication and soft skills
	To inculcate instructional capacity and problem-solving skills through intensive seminars and group discussions with stake holders.	Definitive implementation of class seminars & credit seminar to impart interactive ability among students	Once in a year	
	To guide post graduates in identifying professional and research career opportunities	Acquainting the students for E - access bay	Once in a year	

### Accomplishments

At the early stage, the department had enthusiastic heads of the departments like Prof. S.V Pandurangan, Dr.J.Vasanthakumar, Dr.Santha Govind and Dr.K.Kanagasabapathi, who nurtured the department. Since January 2020, the department is functioning under the stewardship of Dr.M.Vetriselvan with the committed support of 24 staff members. The staff

strive hard to make the department to excel in research and academic activities. Imparting effective self-learning process including skill oriented training is regularly done.

- The Department has organizes coaching classes for ICAR and other competitive examinations.
- The department has conducted research on the diffusion and adoption patterns of various crops growers regarding the latest recommended technologies. Research is being focused on the impact of various agricultural and rural development programmes of both central and state governments.
- The effectiveness of various extension and training organizations which are involved in the agricultural development are also studied.
- The department is training B.Sc (Ag.) students on practical extension strategies during their village stay programme for the course RAWA (Rural Agricultural Work Experience).
- The department has been entrusted with the responsibility of final year UG students and PG students for arranging all india educational tour for the students for the past 25 years.
- The department also has organized two National Conferences, one e-workshop and five International Virtual Conferences.
- The department is conducting demonstrations, campaigns, meetings etc to maintain relationship with the farming community of the Cuddalore and Nagapattinam districts.
- The department also organized Agricultural Extension Conference for farmers and farmers day.
- The department is imparting extension skills among the B.Sc (Ag.)/ (Hort.) and M.S.c (Agri) Agricultural Extension Education students.
- The department is associating itself with state Department of Agriculture in conducting extension events and other transfer of technology activities.
- The alumni of department are occupying remarkable positions in several reputed national/international organizations across the globe. Many of them serve as distinguished academicians and administrators in several institutions and agencies

Category	Total	Last five year period (2017-2022)
Number of Publications (Journal articles)	972	219
Number of Publications (Seminars/Conferences/ Symposia)	290	168
Number of Books & Book chapters	15	12
Number of Projects obtained	5	1
Grant mobilization (Rupees in Lakh)	92.50 lakhs	77.35 lakhs
Number of PGs produced	256	102
Number of Seminars/ Conferences/Workshops Organized	3	8
Number of Awards received by the Faculty	80	73
Number of countries visited by the Faculty (Professional visits)	6	-

## II. Salient Research Achievements of the Department

- Identified traditional farming practices
- Identified the constraints in the adoption of recommended farming practices
- Identified the training needs of farmers on various cultivation aspect

- Identified the entrepreneurial performance of the farmers
- Identified the extent of adoption of recommended farming practices
- Identified the communication and Information Management behaviour of various farming communities
- Identified ICT based attitude, perception, knowledge and utilization among the farmer
- Identified Climate change adaptation and Nutrition extension

#### 6.4.2. FACULTY STRENGTH

Sl. No.	Posts	Sanctioned	Filled	Vacant	Faculty in place	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1.	Professor*	3	3	-	3	-
2.	Associate Professor*	9	9	-	9	1
3.	Assistant Professor*	11	11	-	11	3
4.	Assistant Professor/ Programmer	1	1	-	1	-
	<b>Total</b>				<b>24</b>	<b>4</b>

\* Engaged in UG, PG and Ph.D. Programme

#### Services of Faculty Other Department

Sl. No.	Cadre	Faculty in place	Vacancy position	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1.	Professor*	-	-	
2.	Associate Professor*	-	-	
3.	Assistant Professor*	7	-	

**Credentials of the Faculty (2017-2022)**

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
1.	Dr. Santha Govind (Retired on 30.06.2020)	35	Gender studies, ICT, Rural Development	28	8	140	2	5
2.	Dr. K. Kanagasabapathi, Professor (Retired on 30.06.2022)	33	Indigenous knowledge system and climate change	25	9	117	12	19
3.	Dr.M.Vetriselvan, Professor & Head	29	Agricultural Training , HRD	15	2	12	2	1
4.	Dr.G.Tamilselvi, Professor	27	Entrepreneurship development, ICT	13	-	22	6	-
5.	Dr.P.Jeyaseelan, Professor	28	Human Resource Management, ICT & Cyber Extension	14	-	31	0	-
6.	Dr.J.Meenambigai, Associate Professor	20	ICT, HRD, Nutrition Extension	9	1	69	21	16
7.	Dr.D.Vengatesan, Associate Professor	20	Women studies, Technological Development	7	1	65	4	1
8.	Dr.P.Shanmugaraja, Associate Professor	19	Communication behavior, ITK.	6	1	58	29	7
9.	Dr.V.Sakthivel, Associate Professor	18	Training and Adoption studies	5	-	86	28	27
10.	Dr.M.Kavaskar, Associate Professor	18	ICT, Media Studies, Transfer of Technology , Climate Change	6	3	109	21	21
11.	Dr.T.Kalidasan, Associate Professor	20	Communication, Information Management, Learning Experience	5	--	30	9	5

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
12.	Dr.R.Jayasankar, Associate Professor	19	Information Technology	5	-	64	1	15
13.	Dr.T.Raj Pravin, Associate Professor	16	Transfer of Technology, Farm Journalism, ICT	4	-	-	4	2
14.	Dr.R.Jeya, Associate Professor	20	Yield Gap and Adoption Studies	6	-	30	5	6
15.	Mr.S.Durairaj, Assistant Professor	21	Transfer of Agricultural Technology	2	-	10	0	-
16.	Dr.V.Balamurugan, Assistant Professor	20	Communication, Information Management, Learning Experience	6	-	40	40	20
17.	Dr.M.Natarajan, Assistant Professor	20	ITK, Gender Analysis, ICT, Adoption Behaviour, Training & Impact Studies.	8	-	45	1	4
18.	Dr.I.Isaac Devanand, Assistant Professor	19	Indigenous Knowledge and Farming Practices	4	-	-	4	-
19.	Dr. T. Balakrishnan, Assistant Professor	19	Agricultural Training	4	-	45	12	16
20.	Dr.P.Ramesh, Assistant Professor	19	Transfer of Sustainable Technologies	5	-	40	5	1
21.	Dr.B.Sudhakar, Assistant Professor	19	Yield Gap Analysis	5	-	20	0	4
22.	Dr.R.Muthukumar, Assistant Professor	19	Agricultural Training, Marketing Behaviour	5	-	40	0	5
23.	Dr.V.Kalirajan,	18	Organic Farming,	5	-	15	2	5

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
	Assistant Professor		Indigenous Agricultural Practices & Eco Friendly Technologies.					
24.	Dr.T.Sujaivelu, Assistant Professor	17	Marketing Behaviour, Value Adoption	4	-	18	5	4
25.	Dr. Darling B. Suji, Assistant Professor	17	Adoption Studies	4	-	46	6	23

**Publication : Journals/Articles (2017-2022)**

S.No	Name of the author(s)	Title of paper	Name of the Journal	National/ International	Year of publication	ISSN
1	Kanagasabapathi,K and V.Sakthivel	Communication behaviour of Cashew cultivators	Journal of Extension Education	National	2017	29 (3): 5917-5920. ISSN:0971-3123
2	Santha Govind, M.Kavaskar and Ajoickam Christina	Perception of Farmers on usefulness of Mobile Service in Manipur	Journal of Extension Education (Special Issue: Agri. Communication),	National	2017	29(2):5850-5856 . ISSN:2456-1282.
3	J.Meenambigai C. Thatchinamoorthy	Customer Relationship Management and Retention in Street Food Sector	Food & Nutrition Journal	National	2017	2575-7091
4	Sharmila. S and M. Kavaskar. 2017	Knowledge level of Extension Personnel on Information and communication Technology (ICT)	Journal of global communication	International	2017	10(2): 91-95 ISSN:0974-0600
5	Sharmila. A and M.Kavaskar	Attitude of Extension Personnel towards Information and	Research Journal of Agricultural Sciences	International	2017	8 (6):1455-1457 ISSN:0976-1675

		communication Technology (ICT				
6	Meenambigai, J.D.Prathapsingh and C.Thatchinamoorthy	Communication behaviour of banana growers in Delta region of Tamil Nadu.	Agriculture Update	International	2017	ISSN: 0973- 1520, Vol:12(1) P.166-168. NASS Rating 4.39.
7	Meenambigai, J.Siddam Siva Ganga Yeswanth and C.Thatchinamoorthy.	Attitude, Knowledge and Extent of Utilization of ICT Tools among the staff and students of Faculty of Agriculture.	Journal of Global Communication	International	2017	10 (1) 26-28. 0976-2442
8	Merlin Kamala, I., J. S. Kennedy and I. I. Devanand. 2017	Technology gaps analysis in Integrated Management of Jasmine's leaf webworm ( <i>Nausinoe geometralis</i> ) in Tamil Nadu.	Asian Journal of Agricultural Extension, Economics & Sociology.	International	2017	19(2): 1-8. ISSN:2320-7021
9	Loganathan, B. and T. Kalidasan	Technological Gap Analysis of Cotton Growers	International Journal of Management and social science Research Review	International	2017	1(39):125 2349-6746
10	Darling B. Suji , M. Kavaskar and A.M. Sathish Kumar	Knowledge level of the farmers on eco-friendly agricultural technologies in paddy cultivation	International Journal of economic and business review	International	2017	5(5): 57-61 2349-0187
11	V. Balamurugan and M. Vetriselvan	Learning experience of big farmers in sugarcane cultivation	International Journal of Computationally Research and Development	International	2017	2(1) pp. 37-43 2456-3137
12	Tamilselvi.G. and T Balakrishanan	Entrepreneurial performance of women SHG members in Perambalur District of Tamilnadu	International Journal Of Global Economic Light	International	2017	vol. 4(1) 68-74 2250-2017
13	Loganathan, B. and T. Kalidasan	Yield Gap Analysis of Cotton Growers	Ahead International Journal of Recent	International	2017	1(15):21-23 2456-205X

			Research Review			
14	Isaac Devanand, I., and I. Merlin Kamala	Indigenous traditional knowledge on crop protection practices	International Journal of Agricultural Science and Research	International	2017	7(5): 345-352 2321-0087
15	Kasidurai,S. and D.Vengatesan	Information Management Behaviour of Maize Growers of Perambalur District	International Journal of combined Research & Development (IJCRD)	International	2017	6(7):871-880. 2321-225X
16	Kavaskar,M ., SanthaGovind and A. Sharmila.	Awareness of information and Communication Technologies among Extension Personnel of State Department of Agriculture in Tamil Nadu	Progressive Research - An International Journal	International	2017	12 (Special-Part-I) : 1047-1049 0973-6417
17	Raj Pravin. T	Future trading in floriculture sector: Issues and opportunities for sustainable farm development	International Journal of Innovation in Agriculture Sciences	International	2017	1(2): 91-93 2456-7353
18	Dr.J.Meenambigai& C. Thachinamoorthy	Socio-Economic Development of Rural Women in Tamil Nadu: Empowerment through Agriculture. Emperor.	International Journal of Finance and Management Research, volume - III, special issue -1, March 2017.	International	2017	2395-5929 VOL.III
19	Dr. Isaac Devanand	Indigenous traditional knowledge on crop protection practices.	International journal of Agricultural Science and Research.,	International	2017	7(5):345-352.
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142	P. Shanmugaraja, R.Nightingale, V.Prabudoss and S.Jawahar	A study on Relationship between profile characteristics with training needs of groundnut growers in Cuddalore district	Our Heritage	International	2020	0474 - 9030
143	P. Shanmugaraja, R. Sri Shanmugapriyan, V. Prabudoss and S. Jawahar	Extent of Adoption of Precision farming practices by the tomato growers	Journal of Interdisciplinary cycle research	International	2020	0022 - 1945
144	V. Prabudoss, P.Shanmugaraja, S. Jawahar, M. Jayanthi and V. Arivoli	Effect of Sulphur and Silicon fertilization on Post Harvest Soil Fertility in Rice	Journal of Interdisciplinary cycle research	International	2020	0022 - 1945
145	S. Jawahar, C. Kalaiyaran, K. Suseendran, K. Arivukkarasu, V. Prabudoss and P. Shanmugaraja	Yield and economics of groundnut influenced by Sulphur and Silicon nutrition in coastal saline sandy soil	Journal of Interdisciplinary cycle research	International	2020	0022 - 1945
146	S.Jawahar, V.Prabudoss, P.Shanmugaraja, K.Arivukkarasu, K.Suseendran, C.Kalaiyaran and P.Anandan	Positive Influence of Silicon on Yield response of cotton	Studies in Indian Place names	International	2020	2394 - 3114
147	P. Shanmugaraja, R.Nightingale, V.Prabudoss and S.Jawahar	Relationship between profile characteristics with knowledge level of groundnut growers in Cuddalore District	Journal of Information and Computational Science	International	2020	1548 - 7741
148	P. Shanmugaraja, R. Sri Shanmugapriyan, V.	Constraints faced by the Tomato growers in Adoption of Precision	Infokara research	International	2020	1021 - 9056

	Prabudoss and S. Jawahar	Farming Practices				
149	P. Shanmugaraja, V. Prabudoss and S.Jawahar	Factors influencing the characteristics of tribal farmers and their communication behaviour	Infokara research Journal	International	2020	1021 - 9056
150	V. Prabhudoss, P.Shanmugaraja, Divakaran. J, Bharathiraja. S and S. Jawahar	The Effect of PGPB Organisms on the available Soil Nitrogen and Phosphorous Content in the Rhizosphere of Sugarcane	Infokara research	International	2020	1021 - 9056
151	V. Prabudoss, P.Shanmugaraja, S. Jawahar, K. Dhanam, S. Mahalakshmi and M. Vijayapriya	Effect of Azospirillum and Vermicompost with gradedfertility levels on biological yield and soil fertility in transplanted Kodo Millet	Infokara research	International	2020	1021 - 9056
152	V. Prabudoss, P.Shanmugaraja, S. Jawahar, G. Usharani and V. Arivoli	Effect of Sulphur and Silicon fertilization on growth attributes and nodulation behaviour of Rice fallow blackgram	Infokara research	International	2020	1021 - 9056
153	S.Jawahar, V.Prabudoss, P.Shanmugaraja,P.Anandan, C.Kalaiyarasu ,K.Arivukkarasu andK.Suseendran,	Quality response of Groundnut to Sulphur and Silicon Nutrition in Coastal Saline Sandy soil	Infokara research	International	2020	1021 - 9056
154	D.Balu and M. Kavskar	Attitude of Farm Youth Towards ICT Tools in Tiruvannamalai District of Tamil Nadu	Plant Archives	International	2020	0972-5210
155	Kavaskar M, Kalidasan T, Vegatesan D &Santhagovind	Farmers Perception About Interactive Multimedias Compact Disc (IMCD) in TiruvannamalaiDt of T.N	Plant Archives	International	2020	0972-5210
156	S.Sharmila and M. Kavaskar	Social Economic and Psychological Characteristics of Extension	Our Heritage	International	2020	0474-9030

		Personnel of the State Department of Agriculture in Cuddalore Dt.				
157	DarlingB.Suji, M. Tamilselvan, &C.Praveensampathkumar	A Study on the Utilization behaviour of Eco-Friendly Agricultural Practices and the Characteristics of the Respondents in Erode District.	Plant Archives	International	2020	0972-5210
158	M. Kavaskar and S. sharmila	A study on utilization of information and communication technologies by the extension personnel of state department of agriculture in tamilnadu	Plant Archives	International	2020	0972-5210
159	M. Kavaskar&Santhgovind	Factors influencing symbolic adoption behaviour of paddy growers on organic farming practices	Plant Archives	International	2020	0972-5210
160	M. Kavaskar and K. Raman	Constraints and suggestions offered by the Farm youth for effective agricultural communication	Research journal of agricultural science	International	2020	5927-2203
161	E.Suriyapriya and m. Kavaskar	Farmers usage pattern of mobile agro advisory service for attaining the agricultural information	Research journal of agricultural science	International	2020	5926-2202
162	M. Kavaskar& s. Sharmila	Constraints faced by the Extension Personnel in Utilization of Information and Communication Technology Tools	Research journal of agricultural science	International	2020	5850-1001
163	M. Kathiresan& M. Vetrivelvan	Training needs of Malayali Tribal Farmers of Kolli hills in Tapioca Cultivation	Plant Archives	International	2020	0972-5210

164	R. Arukumar and V. Kalirajan	Role of Women in agriculture	Research insights of life science studies	National	2020	978-81-947154-5-0
165	Balamurugan.V Kalirajan.V	A study on scientific orientation and innovativeness of different categories of sugarcane growers	Science , technology and development	international	2020	Vol 9 0950-0707
166	Rajasekaran.R Balamurugan.V	A study on occupational status and annual income of kolli hills tribal farmers in namakkal district of tamilnadu	Science , technology and development	international	2020	Vol 9 0950-0707
167	Balamurugan.V Balakrishnan.T A.P.Srinivasaperumal Nirosha.R	Participation of farm women in groundnut production and post-harvest operations in thiruvannamalai district	Journal of natural remedies	international	2020	Vol-21 E-2320-3358 P-0972-5547
168	Balamurugan.v Nirosha .R	Mass media exposure and information source utilization of farm women in groundnut production and post harvest operation in thiruvannamalai district	European journal of molecular and clinical medicine	international	2020	Vol-07 2515-8260
169	Balamurugan .V Nirosha.R	A study on practice wise knowledge level of the farm women in groundnut production and post harvest operations in thiruvannamalai district	International journal of grid and distributed computing	international	2020	Vol 13 1758-1767
170	DarlingB.Suji	Combining ability analysis for fruit yield and its component traits in bhendi	Research Journal of Agricultural Sciences-	International	2021	16.05-1609
171	R.Jaya& N. Nadim	Extent of Adoption of ATMA Beneficiaries on ragi cultivation practices	Research Journal of Agricultural Sciences-	International	2021	1183-1186

172	Suriyapriya, E and M. Kavaskar	Information Seeking Behaviour of FPO Members and NonMembers on Recommended Paddy Cultivation Practices.	Bulletin of Environment, Pharmacology and Life Sciences	International	2021	2277-1808
173	Sivasubramanian, J and M.Kavaskar	Information Sharing Behaviour of ATMA Beneficiaries and Non-Beneficiaries about Paddy Cultivation Technologies in Puducherry and Karaikal Region of Puducherry	Research Journal of Agricultural Sciences- An International Journal	International	2021	0976-1675
174	Sivasubramanian, J and M Kavaskar	Participation of Agricultural Technology Management Agency Beneficiaries about Different Activities of ATMA	International Journal of Botany Studies	International	2021	2455-541X
175	V. Balamurugan, V. Kalirajan & A. Thirumal	A study on practice-wise knowledge level of the paddy farmers about the Recommended Biofertilizers practices in Paddy cultivation Vellore District	Journal of R.S.C.B	International	2021	
176	N.Nadim,R.Jeya, and M.Natarajan	Relationship of the socio-economic characters of ATMA beneficiaries with their knowledge level on ragi cultivation practices	Research journal of agricultural sciences	International	2021	2249-4538
177	V. Balamurugan	Effect of Integrated Weed Management Practices on Weed parameters in Irrigated Cowpea CO (CP)7	Research Journal of Agricultural Sciences An International Journal	International	2021	0976-1675
178	V. Balamurugan	Constraints faced by the Turmeric Growers of Erode District of Tamil Nadu	Research Journal of Agricultural Sciences An International	International	2021	0976-1675

179	V. Balamurugan	Studies on Impact of Weed management practices on Nutrient Removal by Weeds and Nutrient uptake by Irrigated Sunflower ( <i>Helianthus annus L</i> )	Research Journal of Agricultural Sciences An International Journal	International	2021	0976-1675
180	V. Balamurugan	Use of Farm power and livestock for cultivation practices in groundnut production and post-harvest technologies by farm women in keelpenathur block of thiruvannamalai district	Research Journal of Agricultural Sciences An International Journal	International	2021	0976-1675
181	Darling B. Suji, R.Jeya, R.DivyaBharathi and C. Praveen Sampath Kumar	A study on the Adoption behaviour of Paddy growers in Pudukkottai District	Research Journal of Agricultural Sciences,	International	2021	0976-5670
182	Deshmukh, S.K., Tamilselvi, G and V. Sakthivel	Impact of KVK Training on Knowledge and Adoption Levels of Soybean Growers in Maharashtra State	Research Journal of Agricultural Sciences - An International Journal.	International	2021	0976-1675.
183	Shanmugaraja, P., Kishorkumar, S., Prabudoss, V., Sakthivel, V. and S.Dineshkumar	A Study on Extent of Adoption of Paddy Farmers about the Integrated Nutrient Management Technologies in Nagapattinam District of Tamil Nadu.	International Journal of Botany Studies.	International	2021	2455-541X.
184	PonAlagammai, C. and V. Sakthivel.	Marketing Behaviour of Mango Growers in Dindigul District of Tamil Nadu	Research Journal of Agricultural Sciences - An International Journal)	International	2021	0976-1675.
185	PonAlagammai, C., Sakthivel, V. and K. Kanagasabapathi.	Adoption of Recommended Technologies in Mango Cultivation by the Mango Growers in Dindigul District of Tamil Nadu	International Journal of Botany Studies	International	2021	2455-541X.

186	V.Sakthivel	Influence of Compost, Industrial Refuse on Yield, Yield Attributes of Maize and Post -harvest soil fertility status	Research Journal of Agricultural Sciences	International	2021	0976-1675 Vol(12):911-915
187	Deshmukh, S.K and G.Tamilselvi	Constraints experienced by the soybean growers in adoption of soybean production technology in Maharashtra.	Research journal of Agricultural sciences	International	2021	2249-4538 ISSN:0976-1675
188	T. Kalidasan	An Analysis on communication behaviour of sugarcane growers in Cuddalore districts	Innovative Extension Approaches for effective communication	International	2021	978-81-952546-8-0
189	Sathishwaran. R, T. Kalidasan and M. Kavaskar	Constraints faced by Mango Growers in Krishnagiri District	DogoRangsang Research Journal	National	2021	ISSN: 2347-7180.
190	Sathishwaran. R, T. Kalidasan	Training Components for Mango Growers in Krishnagiri District	DogoRangsang Research Journal	National	2021	ISSN: 2347-7180.
191	Sathishwaran. R, T. Kalidasan	Knowledge level of Mango Growers in Krishnagiri District	Sambodhi	National	2021	ISSN: 2249-6661
192	Sathishwaran. R, T. Kalidasan	Factors Influencing Mango Growers in Krishnagiri District	Sambodhi	National	2021	ISSN: 2249-6661
193	T. Balakrishnan V.Balamurugan S. Kalaisudarsan A.P. Srinivasaperumal B. Uma Maheswari	Groundnuts faced by the turmeric growers of the Erode district of Tamil Nadu	Research journal of agricultural science	International	2021	0976-1675
194	T. Balakrishnan V.Balamurugan S. Kalaisudarsan A.P. Srinivasaperumal	Study on impact of weed management practices in nutrient removal of weeds and nutrient uptake by irrigation sunflower	Research journal of agricultural science	International	2021	0976-1675

	B. Uma Maheswari	(Helianthus annuls)				
195	R.Jeya, M.Natarajan and S.Sivaperumal	Extent of adoption among tomato growers on precision farming practices	Journal of agriculture and allied sciences	International	2021	2582-6336
196	S.Dineshkumar and R.Jeya	A study on knowledge level of cashew growers in Ariyalur district of Tamilnadu	Turkish online journal of qualitative inquiry	International	2021	1309-6591
197	S.Dineshkumar and R.Jeya	Production and marketing constraints faced by cashew growers in Ariyalur district of Tamilnadu	International journal of botany studies	International	2021	2455-541X
198	Meenambigai.J and R. Jalagandeshwaran	Perception towards information technology enabled systems in agriculture among the farmers in krishnagiri district	Research journal of agricultural sciences An international journal	International	2021	P-ISSN:0976-1675 E-ISSN:2249-4538
199	P.Ramesh, P. Vaishnavi and V. Sakthivel	Sociological Empowerment of Women Self Help Group Members through mahalirthittam in Cuddalore district of tamilnadu	Research journal of agricultural sciences An international journal	International	2021	12(3) 1030-1032
200	A.P.Srinivasaperumal S.Kalaisudarson V.Balamurugan Arun	Effect of integrated weed management practices on weed parameters in irrigated cowpea CO-7	Research journal of agricultural sciences	International journal	2021	P-0976-1675 E-2249-4538
201	T.Balakrishnan V.Balamurugan S.Kalaisudarson A.P.Srinivasaperumal B.Uma maheshwari	Constraints faced by the turmeric growers of erode district of tamilnadu	Research journal of agricultural sciences	International journal	2021	P-0976-1675 E-2249-4538

202	V.Balamurugan S.Kalaisudarson T.Balakrishnan A.P.Srinivasaperumal	Use of farm power and livestock for cultivation practices in groundnut production and post harvest technologies by farm women in keelpenathur block of thiruvannamalai district	Research journal of agricultural sciences	International journal	2021	P-0976-1675 E-2249-4538
203	S.Kalaisudarson A.P.Srinivasaperumal S.Srinivasan T.Balakrishnan V.Balamurugan	Studies on impact of weed management practices on nutrient removal by weeds and nutrient uptake by irrigated sunflower	Research journal of agricultural sciences	International journal	2021	P-0976-1675 E-2249-4538
204	R .Jayasankar V.Sneha and T.Balakrishnan	The Relationship between Personal, Socio-economic and Psychological Characteristics of Respondents with their Adoption Level of Cultivation Practices in Grapes under PMKSY Scheme–An Analysis	International Journal of Botany Studies	International	2021	2455-541X
205	K.S Thillaivijay, K.Kanagasabapathi and V. Sakthivel	Adoption of Recommended Practices in Pulse Cultivation - An Analysis	Research Journal of Agricultural Sciences	International	2021	12(1) 274-275, 0976-1675
206	Sesenlo Kath, K. Kanagasabapathi and V. Sakthivel	Factors Influencing the Relationship Between the Profiles of the Farmers with their Knowledge Level to Overcome the adverse effects of climate change	Research Journal of Agricultural Sciences	International	2021	12(1) 274-275, 0976-1675
207	Aarathi, S., Kanagasabapathi, K and V. Sakthivel	Obstacles Experienced in Practising Improved Agricultural Methods to Overcome the Adverse Effects of climate change	Plant Archives	International	2021	Vol:21 1811-1813, 0972-5210

208	Tamilselvi, G., Gayathri, G., Sandhya, V., Sakthivel, V. and T. Balakrishnan.	Extent of Utilization of Uzhavan APP in Madurai District of Tamil Nadu	Research Journal of Agricultural Sciences - An International Journal.	International	2022	0976-1675.
209	Ramesh, P., Vaishnavi, P and V. Sakthivel.	Political Empowerment of Women Self Help Group Members through Mahalir Thittam in Cuddalore District of Tamil Nadu	Research Journal of Agricultural Sciences - An International Journal.	International	2022	0976-1675.
210	Abinaya, A., Sakthivel, V. and K. Kanagasabapathi.	Information Processing Behaviour of Cashew Growers in Cuddalore District of Tamil Nadu	Research Journal of Agricultural Sciences - An International Journal.	International	2022	0976-1675.
211	Punitha.P and J.Meenambigai	Extent of utilization of extension and advisory services of state department of agriculture by the farm women in Cuddalore district	Zeichan journal	International	2022	ISSN No:0932-4747
212	Punitha.P and J.Meenambigai	Perceived effectiveness of extension and advisory services of state department of agriculture among the farm women in Cuddalore district	Journal of xidian university	International	2022	ISSN No:1001-2400
213	Meenambigai.J and M.Keerthana	Utilization behaviour of e-Resources among the reseach scholars of faculty of agriculture, annamalai university,Chidambaram,cuddalore district, tamilnadu.	Journal of xidian university	International	2022	ISSN No:1001-2400
214	Meenambigai.J and M.Keerthana	Impact of utilization of e- resources by the research scholars.	The journal of research ANGRAU	International	2022	ISSN 0970-0226

215	V. Sakthivel	Suggestions offered by the cashew growers for the efficient information management to enhance cashew production	International Journal of Management & Entrepreneurship	International	2022	ISSN: 2229-5348
216	T. Balakrishnan	Extent of utilization of Uzavan App in Madurai District of Tamil nadu	Research Journal of Agricultural Sciences	International	2022	
217	T. Balakrishnan	Constraints faced by the turmeric growers of Erode district of Tamilnadu	Research Journal of Agricultural Sciences	International	2022	
218	T. Balakrishnan	studies on Impact of weed management practices	Research Journal of Agricultural Sciences	International	2022	
219	T. Balakrishnan	Efficiency of pre emergence herbicide and cultural methods of weed management on growth and yield of hybrid cotton	Research Journal of Agricultural Sciences	International	2022	

**BOOKS (AUTHORED / EDITED) 12**

S.No	Author(s)	Title of the book	National / International	Year of publication	ISBN number	Name of the publisher & address
1	Meenambigai, J	Advances in Communication and Extension Management	National	2018	ISBN:978-93-87756-35-9	Maya publication, New Delhi
2	Meenambigai, J.and C.Thatchinamoorthy	Text book of Extension communication and information technology	National	2018	ISBN: 978-81-8321-468-	Agro tech Publishing Academy, Udaipur
3	Meenambigai J	.e-book on e-Extension Kindle Unlimited	National	2019	ASIN:B07MZR7KW	Amazon Publishers
4	SanthaGovind, Kavaskar, M. and D.Vengatesan	Sustainable Agriculture and Rural Livelihoods	International	2019	ISBN 978-0-359-58134-4	published by Lu Lu.com,3101, Hillsborough St. Raleigh , NC 27607,United States:50-54
5	Vengatesan,D., Kavaskar,M., Ramesh,P., Selvamuthukumar an,T., Arivudainambi, S and Santha Govind	Recent Trends in Agriculture towards Food Security & Rural Livelihood (Volume I)	International	2020	978-81-947065-2-6	Archers & Elevators Publishing house, Bangalore
6	Vengatesan,D., Kavaskar,M., Ramesh,P., Selvamuthukumar an,T., Arivudainambi, S and Santha Govind	Recent Trends in Agriculture towards Food Security & Rural Livelihood (Volume II)	International	2020	978-81-949889-3-9.	Archers & Elevators Publishing house, Bangalore
7	Santha Govind., Arivudainambi, S., Selvamuthukumar an,T., Vengatesan,D., Kavaskar,M., and D.Balu.	Edited Book on Recent Trends in Agriculture towards Food Security & Rural Livelihood (Volume III).	International	Jan 2022	9789391131524	Royal Book Publishing House, Salem - 636103. India.
8	Santha Govind., Arivudainambi, S., Selvamuthukumar an,T., Vengatesan,D., Kavaskar,M., and	Recent Trends in Agriculture towards Food Security & Rural Livelihood (Volume IV).	International	Jan 2022	9789391131593	Royal Book Publishing House, Salem - 636103. India.

	D.Balu.					
9	Kalirajan.V., Kavaskar.M., Vengatesan.D., D.Balu and V.Sakthivel	Transforming Agricultural Extension Systems towards Achieving Food and Nutritional Security (Volume I).	International	March 2022	978939113 1265	Royal Book Publishing House, Salem - 636103. India.
10	Kalirajan.V., Kavaskar.M., Vengatesan.D., D.Balu and V.Sakthivel	Transforming Agricultural Extension Systems towards Achieving food and nutritional Security (Volume II).	International	March 2022	978939113 1326	Royal Book Publishing House, Salem - 636103. India.
11	Meenambigai.J. and Siddam siva ganga yeshwanth	Attitude knowledge and utilization of ICT tools among the staff and students	International	Februar y 2021	ISBN: 978- 93-90996- 91-9	Archers & Elevators publishing house N0.54,MM layout, Hesaragatta Main road, Banglore- 560090
12	Meenambigai, J.and C.Thatchinamoort hy	Extension Methodologies and Transfer of Agricultural Technology	National	May 2022	ISBN:978- 93-91373- 51-1	Shanlax Publications, Madurai.

#### Awards and Recognitions by the Faculty

S.No	Year of Award	Name of the Faculty	Awards/Recognitions
1	2017	Dr.P.Shanmugaraja	Best Doctoral Thesis Award
2	2017	Dr.T. Raj Pravin	Best Paper Presentation Award
3	2017	Dr.T.Raj Pravin	First prize in the state level seminar or recent trends in microbial technology
4	2017	Dr.V. Balamurugan	Best YRC Programme Office Award
5	2017	Dr.V.Balamurugan	Best YRC Programme Officer Award
6	2017	Dr.R.Muthukumar	Popular Extension Worker Award
7	2018	Dr.Santha Govind	Out Standing Achievement Award
8	2018	Dr.D.Vengatesan	Excellence in Extension Award
9	2018	Dr.P. Shanmugaraja	Best Researcher Award

10	2018	Dr.V.Sakthivel	Popular Extension Worker
11	2018	Dr.V. Sakthivel	Best Poster Award
12	2018	Dr.M. Kavaskar	Best Young scientist Award
13	2018	Dr.M.Kavaskar	Best Young scientist Award
14	2018	Dr.T. Kalidasan	Dr.Sir.C.V Raman Best Scientist Award
15	2018	Dr.R.Jayasankar	Best Oral Presentation Award
16	2018	Dr.R.Jayasankar	Best Oral Presentation Award
17	2018	Dr.R.Jayasankar	Excellence in Teaching Award
18	2018	Dr.R.Jayasankar	Excellence in Extension Award
19	2018	Dr.T. RajPravin	Best Oral Presentation
20	2018	Dr.T.RajPravin	Best Oral Paper Presentation Award
21	2018	Dr.V. Balamurugan	Scientist of the Year Award
22	2018	Dr.V. Balamurugan	Best Researcher Award
23	2018	Dr.V.Balamurugan	Scientist of the Year Award
24	2018	Dr. P. Ramesh	Best Teacher Award
25	2018	Dr.R.Muthukumar	Best Young Scientist Award
26	2018	Dr.R.Muthukumar	Best Poster Presentation Award
27	2018	Dr.R.Muthukumar	Excellence in Extension Award
28	2018	Dr.V.Kalirajan	Best Young Extension worker
29	2019	Dr. J. Meenambigai	Outstanding Women Scientist Award
30	2019	Dr.D. Vengatesan	Best Oral Presentation Award
31	2019	Dr.D.Vengatesan	Young Scientist Award
32	2019	Dr.P.Shanmugaraja	Best Oral Presentation
33	2019	Dr.P.Shanmugaraja	Excellence in Teaching Award
34	2019	Dr.V.Sakthivel	Excellence in Teaching Award
35	2019	Dr.M.Kavaskar	Outstanding Extension Worker Award

36	2019	Dr. T. Kalidasan	Excellence in Research Award
37	2019	Dr. T. Kalidasan	Dr. A.P.J. Abdul Kalam National Award
38	2019	Dr.R.Jayasankar	Outstanding Extension Worker Award
39	2019	Dr.R.Jayasankar	Best Oral Presentation
40	2019	Dr.R.Jayasankar	Best Oral Presentation
41	2019	Dr.R.Jayasankar	Outstanding Faculty in Agricultural Sciences
42	2019	Dr.V.Balamurugan	Best Researcher National Award
43	2019	Dr.V.Balamurugan	Excellence in Teaching Award
44	2019	Dr. T. Balakrishnan	Best Young Scientist Award
45	2019	Dr. P. Ramesh	Popular Extension Worker
46	2019	Dr. P. Ramesh	Excellence in Extension Award
47	2019	Dr. P. Ramesh	Dr.B.R.Ambedkar National
48	2019	Dr. B. Sudhakar	Best Paper Award
49	2019	Dr. B. Sudhakar	Excellence in Teaching Award
50	2019	Dr.R.Muthukumar	Popular Extension Worker Award
51	2019	Dr.R.Muthukumar	Best Poster Presentation Award
52	2019	Dr.R.Muthukumar	Popular Extension Worker Award
53	2019	Dr.V.Kalirajan	Excellence in Teaching Award
54	2019	Dr.V.Kalirajan	Young Scientist Award
55	2019	Dr. T. Sujaivelu	Excellence in Extension Award
56	2019	Dr.Darling B. Suji	Best Oral Presentation Award
57	2019	Dr. Darling B.Suji	Popular Extension Worker Award
58	2020	Dr. J. Meenambigai	Distinguished Women in Agricultural Sciences

59	2020	Dr.T. Kalidasan	Best Oral Presentation Award
60	2020	Dr.Darling B. Suji	Best Young Scientist Award
61	2021	Dr.V.Sakthivel	Best Extension Scientist Award
62	2021	Dr.V.Sakthivel	Dr. APJ. Abdul Kalam Research Excellence Award
63	2021	Dr.M.Kavaskar	Dr. M.S. Swaminathan Research Excellence Award
64	2021	Dr.M.Kavaskar	Distinguished Scientist Award
65	2021	Dr.M.Kavaskar	Publication of Proceedings
66	2021	Dr.R. Jayasankar	Best Oral Paper
67	2021	Dr.V. Balamurugan	Dr. M.S. Swaminathan Research Excellence Award
68	2021	Dr.V. Balamurugan	Best Teacher Award
69	2021	Dr.DarlingB.Suji	Young scientist
70	2022	Dr. J. Meenambigai	Best Oral Presentation Award
71	2022	Dr. J. Meenambigai	Best Women Academician of the Year Award
72	2022	Dr.V.Sakthivel	Best Paper Award
73	2022	Dr.V. Balamurugan	Best Oral Presentation Award

#### Seminars/Conferences/ Workshops organized

Date	Topics	No. of Participants
01.11.2018 & 01.11.2018	National Seminar on Extension Strategies and Technologies for Sustainable Agricultural Development	255
26.04.2019 & 27.04.2019	National conference on Sustainable Agriculture and Rural Livelihood (SARL)	214
03.01.2020 & 04.01.2022	International Conference on Recent Agricultural Programmes to improve the Livelihood of farmers in Asian and African countries	232
12.09.2021	International Virtual Conference on Recent Agricultural Programmes to Improve the Livelihood of Farmers in Asian and African Countries	232
16.09.2021	International Virtual Conference on Advances in Information and Communication Technology	235
18.09.2021	International Virtual Conference on Nutritional Security for 21 <sup>st</sup> Century	242
21.09.2021	International Virtual Conference on Extension Management Strategies for Sustainable Agriculture	227

29.09.2021	IQUART Virtual Workshop on Skill Development of Youth for Self Employment Opportunities in Agriculture	230
01.10.2021	International Virtual Conference on Improving Rural Economy Through Innovative Extension Approaches	258
21.03.2022 & 22.03.2022	National Conference on Transforming Agricultural Extension Systems towards achieving Food and Nutritional Security	110

#### List of funded Projects (2017-2022)

Sl. No.	Title of the project	Name of Principal & Co Principal investigator	Period	Sponsoring agency	Out lay (in lakh rupees)
1	Rural Urban Connectivity Centers for Technology Dissemination Research and Livelihood Sustainability	Dr. M. Kavaskar (Project Co-Ordinator)	11.06.2019 to Till date	TNSCST - Chennai	77.35
<b>Total</b>					<b>77.35</b>

#### Extension Activities

##### Extension and Farm Advisory Services /Technology Dissemination initiatives

As a extension service the staff members of the Agricultural Extension have well established contacts with farming community in and around the surrounding of Cuddalore district through RAWE programme. They also have well established link with the various stakeholders like State Department of Agriculture, Panchayatraj Institutions, KVK, Regional Research Stations and NGO's. During RAWE programme, the staff members facilitated the students to organize and conduct various commendable extension activities like meeting, demonstrations, campaigns and exhibitions in the villages.

Due to Covid 19 lockdown the staff members of the department rendered online farm advisory services to the farmers in and around Cuddalore district, by sharing information to their whatsapp. Whatsapp group was also started in the name of AU Extension Farmers Group. A total number of 208 farmers joined this link. Extension scientists, TNAU KVK Scientists and State Agriculture Department Officials have also joined as members of this group and shared useful farm information through text, voice messages and videos.

A You Tube channel **AU Agri Extension 360'** has been initiated. So far 19 videos have been uploaded on various agricultural technologies.

<https://youtube.com/channel/UCPINaWNVVEAT25B-mArNXVw>

Link: <https://youtu.be/Z2uK-o0dQKs>

Link: <https://chat.whatsapp.com/FBIv9Mvo0y6G6HFPSkObmr>



### Farmers Agricultural Technology Information Cell (FATIC)

Considering the information needs of the farming community, a separate cell FATIC (Farmers Agricultural Technology Information Cell) was initiated on 14.02.2022 with the following objectives:

1. To satisfy the information needs of farming community
2. To clarify doubts and offer solutions in Agriculture and Animal Husbandry areas.
3. To organize demonstrations and trainings to farmers, Self Help Group members, Farmers producer Organizations, Extension Professionals and Researchers.
4. To disseminate new and latest farm technologies and also to organize awareness campaigns about welfare programmes of central and state governments.

### Farmers Agricultural Technology Information Cell



### Agriculture Museum

The Agriculture Museum, Annamalai University is the epitome of Excellency in the field of agriculture. The museum exhibits genesis of Faculty of Agriculture over the past decades. With its commitment towards Excellency in agriculture, it has manifested indigenous technical knowledge in costal farming system of Tamil Nadu. The museum displays various blocks representing technologies used in the farming. The museum houses different models containing evolution of agriculture models, automatic weather

station, models of agricultural implements models of soil profile, traditional storage of seeds. The models of termite colony and models of glass house & poly house used for growing of vegetables under controlled conditions, models for crop training and food security, models for rearing of honeybees and silkworm rearing also models of animal husbandry, models being displayed and other useful information being displayed about the diseases, pest, cultivation practices etc., along with various activities carried out by various departments, and various information of all the agriculture departments are displayed.

<https://youtube.com/watch?v=ShSGGDSbjDU&feature=share>



### **Agricultural Museum**

The Department of Agricultural Extension regularly organizes farmers day to introduce new agricultural technologies and innovations to the farming community. On the occasion of farmers day, meetings and demonstrations are also organized to enhance knowledge and skill among the farmers, farm women and rural youth. To enhance capacity building, EDP vocational skill oriented training programmes are also organized by the department of agricultural extension. As a recent imitative agricultural extension conference was also organized on 23.12.2021. Farmers Day was conducted on 28.03.2022 and invited lectures were delivered by the Subject Matter Specialist (SMS) of Faculty of Agriculture, Annamalai University.

### **Farmers Day 2022**



## Agricultural Extension Conference for Farmers



## Village Extension Activities - Nakranvanthankudi Demonstration on Panchakavya Preparation



## Awareness Programme on Use of Computers and Mobile Phones in Agriculture for Woman Self- Help Groups in Kumaramangalam Village



**Interaction with Farmers on Crop Protection at Chitthalapadi**



**Discussion about Eco-friendly Technologies of Paddy for Sustainable Agricultural Development -Kumaramangalam**



### 6.4.3. TECHNICAL AND SUPPORTING STAFF

Sl. No.	Posts	Sanctioned	Filled	Vacant	Faculty in place	Responsibilities
1.	Secretarial Staff	1	1		1	<ul style="list-style-type: none"> <li>• Teaching staff and students incoming and outgoing circular maintenance.</li> <li>• RAWE Programme &amp; Rural development file. Visitors service &amp; visitors file.</li> <li>• Issue of all Examination timetable.</li> <li>• Audio, video aids stock maintenance.</li> <li>• UG, PG, PhD - Mid-Semester Marks, attendance and practical exam answer papers collection and maintenance,</li> <li>• Budget Allotment.</li> <li>• Arranging All India Educational Tour.</li> </ul>
2.	Ministerial Staff	2	2		2	<ul style="list-style-type: none"> <li>• All File maintenance,</li> <li>• leave Register maintenance,</li> <li>• Imprest maintenance.</li> <li>• Teaching and Non teaching staff attendance maintenance.</li> <li>• Purchase &amp; bill passing.</li> <li>• To Prepare TA/DA Bill for external,</li> <li>• Board of studies - PG Board of Examination</li> <li>• PG Endowment Functions /Seminars related works.</li> </ul>
	<b>Total</b>				<b>3</b>	

#### 6.4.4. CLASSROOMS AND LABORATORIES

##### Classrooms and laboratories available in the Department of Agricultural Extension

Sl. No.	Name of the instructional unit	Size (sq. ft)	Seating Capacity
1.	Agricultural Extension (Sociology & Psychology) Audio Visual Lab	1,260 sq. ft (42' x 30')	30
2.	PG Class room - I	600 sq. ft(30' x 20)'	30
3	PG Class room -II	600 sq. ft (30' x 20)'	30
4	Library	600 sq. ft (30 x 20)	20



##### Agricultural Extension (Sociology & Psychology) Audio Visual Lab

Particulars	Number
LCD- Epson Multimedia LCD Projector	5
Camera (SLR) with zoom,wide-angle,tele-photo lens	2
Video camera with tripod,lighting accessories and editing facility	2
Computer (Work Station) with editing software	2
Digital Voice recorders	7
Audio -recording mixing console	2
Computation software for statistics	2
Laptop	1
Smart TV	1
Interactive Smart Boards for class room	2

## Common Facilities available from Faculty of Agriculture

### Dr. S. Chandrasekaran Hi-Tech Hall

Apart from the above, college is provided Hi-Tech Hall with Video Conferencing facility with an area of 1,840 Sq. Ft. The PG students are utilising the facility. The details of the Hi-Tech Hall are given below.

Particulars	Number
Computer	4
Laptop	2
LCD- Epson Multimedia LCD Projector	5
Smart TV	1
Interactive Smart Boards for class room	2
Video camera	1

## Common Facilities available from Annamalai University

### 1. Info-Lab

A separate computer lab with internet connectivity (Info - Lab) is also available for the students use.

### 2. Educational Multimedia Centre (EMMC)

The Educational Multimedia Centre (EMMC), Annamalai University extends its support for creating multimedia content.

The EMMC is equipped with high-end professional cameras, editing software, and other technological gadgets to produce digital Teaching and Learning contents. The centre is equipped with latest Audio - Visual gadgets for recording, editing and live streaming of high-quality multimedia educational programs.

The Centre caters to various Departments of study and wings of Directorate of Distance Education to produce teaching assistive multimedia content. Live interactive programs with eminent experts of National repute also can be conducted by this centre.

S.No.	Equipment and Software	Specifications
1.	Video Camera with Tripod	✓ 4k Handheld Camcorder with Camera mounted wireless lavalier microphone system
2.	Video camera - PTZ camera	✓ 1/2.5 Inch based 4K CMOS Color video camera
3.	Handycam	✓ 10 MP video Handheld camcorder
4.	Wireless Microphone, Wireless Hand-Held Microphone & Wired Hand-Held Microphone	✓ Camera mounted wired/wireless lavalier microphone system with adjustable in 25 kHz steps 20 frequency banks, each with up to 12 factory-present channels
5.	i-Mac system with acquisition cards	✓ 27-inch iMac with retina 5k display 3.8ghz 8 core 10 <sup>th</sup> generation intel core i <sub>7</sub> processor ✓ Multi I/O Docking Station
6.	Final Cut Pro	✓ Professional post production software

7.	Audio - Video workstation	<ul style="list-style-type: none"> <li>✓ CPU AMD Ryzon 9 3900X</li> <li>✓ WINDOWS 10 Professional 64bit</li> <li>✓ Graphics card NVIDIA GTX 1660 super</li> <li>✓ Video editing software- Adobe premiere</li> <li>✓ Audio recording and editing software - Adobe audition</li> </ul>
8.	Desktop Computers and Laptop	<ul style="list-style-type: none"> <li>✓ Intel core i7 (10<sup>th</sup> generation) 32 Gb/1000 GB HDD/Windows 10 professional</li> </ul>
9.	Studio Cool Lights with Stand	<ul style="list-style-type: none"> <li>✓ 100w LED soft panel light 3200K/5600Kcolour temperature</li> </ul>
10.	Video Mixer	<ul style="list-style-type: none"> <li>✓ 8-channel Digital Video Mixer with 3G-</li> <li>✓ SDI, HDMI, Composite Video plus dedicated DSK</li> <li>✓ Built-in Multi viewer with Touch Control</li> <li>✓ Mix between 8 video sources</li> </ul>
11.	Audio mixer	<ul style="list-style-type: none"> <li>✓ Built-in 24-bit Lexicon digital effects processor.</li> <li>✓ 8+2 channel frame size</li> </ul>
12.	Motorized chroma screen	<ul style="list-style-type: none"> <li>✓ Wall mount 5x8 sized motorized chroma screen</li> </ul>
13.	USB audio recorder	<ul style="list-style-type: none"> <li>✓ With 8GB Internal Memory</li> </ul>
14.	Web Presenter	<ul style="list-style-type: none"> <li>✓ SDI Video Input - Video Output</li> <li>✓ SDI Rates 1.5G, 3G, 6G, 12G</li> <li>✓ HDMI Video Input 1 HDMI Video Output</li> </ul>
15.	Video Recorder	<ul style="list-style-type: none"> <li>✓ HD/SD-SDI Hard Drive Video Recorder</li> <li>✓ HD/SD-SDI, Time code &amp; Audio Interface. SDI/HDMI outputs.</li> <li>✓ Support up to 120Mbps I-frame recording, 4:2:2 sampling, record MOV/MXF.</li> </ul>
16.	Streaming Server	<ul style="list-style-type: none"> <li>✓ H.264 Video Streaming Encoder</li> <li>✓ Streaming videos in RTMPS, RTMP, RTSP formats to Social media</li> </ul>
17.	Titler pro 7 software	<ul style="list-style-type: none"> <li>✓ Professional Titles maker</li> </ul>
18.	Disk Station +5-Bay NAS Server	<ul style="list-style-type: none"> <li>✓ Access and share data with any Windows, macOS, and Linux computers or mobile device</li> </ul>
19.	55 inch LED Monitor	<ul style="list-style-type: none"> <li>✓ 55 inch 4K Ultra HD TV</li> </ul>
20.	32 inch LED TV	<ul style="list-style-type: none"> <li>✓ 32 inch Full HD TV</li> </ul>
21.	22 inch LED Monitor	<ul style="list-style-type: none"> <li>✓ 22 inch 4K Ultra HD Monitor</li> </ul>
22.	HD Visual Communications System - Full HD video conferencing end point	<ul style="list-style-type: none"> <li>✓ Multipoint (1+3) - Video Conferencing System</li> <li>✓ Full HD 1080p image quality</li> <li>✓ Multi-Device &amp; Camera Control</li> <li>✓ USB Memory Recording &amp; Dual Monitor</li> <li>✓ PTZ CAMERA and Microphone</li> </ul>
23.	Interactive touch screen panel with Computer Pen	<ul style="list-style-type: none"> <li>✓ Wacom Screen size 80 cm</li> <li>✓ 4K ultra-HD</li> </ul>

## Educational Media Centre



### 6.4.5. CONDUCT OF PRACTICAL AND HANDS-ON-TRAINING

It is important to gain first hand theoretical knowledge that underlies any professional degree. But there are some skills that can only be learned through hands-on-practice. It is important that much of the learning material in any given courses should be provided in a way that allows PG scholars to gates involved as possible to increase their knowledge and abilities. Students are getting sired practical and hands-on-training as per the curriculum aspects.

#### **Field visits/visit to renowned institutes, industries, progressive farms,**

- The syllabus of all the course are framed with adequate weight age for outdoor exposure field visits
- More than 50 percent of the practical syllabus is framed with such field visits to renowned institutes, industries and progressive farms. In PG programme, out of the 21 course credits (inclusive of seminar), 9 credits are devoted exclusively for the practical exposure.
- The students are visiting the fields of different farming situations to understand their sociological and ecological problems. They are also visiting to the different field functionaries of the state department of agriculture, horticulture, animal husbandry, sericulture, marketing and other line departments and government and non-government agencies of rural development to understand their TOT initiatives, methodologies, approaches and related constraints.
- The students are also taken to various higher level management organizations. such as State bank of India, State Department of Agriculture, KVKs, Regional Research Stations and NGOs to study their organizational pattern, their initiative of human resource development and management and their rural development initiatives and approaches.
- The students are also taken to different levels of markets, news and other media agencies like dailies, AIR, DD Kendra, community radio centers. The practical classes of the extension courses are mostly of field visits, interaction with farmers, conducting PRA exercises and class room group exercises and final presentation.
- Subject specific field trips to different rural development / HRD based organizations and other related institutions are being undertaken to provide students first hand exposure to latest

concepts and techniques. Students are encouraged to interact with the officials of public institutions such as Nationalized Bank like Indian bank, Office of the Joint Director of Agriculture, Cuddalore, ICAR-Krishi Vigyan Kendras (KVKs), and officials of the concerned visiting organization to get very clear understanding of the facts presented.

In this regard the following modalities are followed in the process in the conducting of practical classes

### **Preparatory of Training**

- Students will be given an exhaustive orientation so as to have a prior knowledge and through preparedness while coming for the practical classes
- Arranging students into different groups. Preparation of necessary tools, interview schedules, checklists Finalizing the field visits and PRA tools to be practiced

### **Hands on training in field**

- Proper introduction to the individuals involved ( students/ farmers/ facilitators), also giving a clear outline about the purpose of the exercise
- Conduct of the field exercise involving farmers
- Documentation of the experiences generated by the students themselves
- If it is class room group exercise, group members will discuss among themselves and every group leader will make present atonal the end
- Classroom exercises involve, group discussion, brainstorming ,panel discussion and practicing PRA exercises

### **Hands on Training for Report Preparation**

- Discussion of the learning and clarification of the issues generated Developing record work
- Complimenting/assessing students performance.

### **Practical Manuals and Record Work**

To facilitate the process, the students are provided with printed practical manuals and record works, which carries the concept- oriented practical guidance, step by step procedures about different exercises, where in students will record their documented knowledge they synthesized during the practical classes.

### **Individual and Group Exercises**

Students will also be given suitable individual assignments and group exercises. The individual assignments will be carried out by the students with guidance of the course teachers and they will make presentation during the scheduled time. Similarly the group exercises will also be carried out by the group members. Adequate care being taken that every student tries contributing in the group exercises.

### **Internship Programme for PG Scholars**

PG scholars of the Department of Agricultural Extension undergone Internship programme for 15 days to gain practical experience in reputed organizations in Tamil Nadu.

**The objectives of a student participation in an internships programme are to**

- To explore career alternatives prior to graduation
- To integrate theory and practice
- Assess interests and abilities in their Agricultural Extension
- Learn to appreciate work and its function in the economy
- Develop work habits and attitudes necessary for job success
- Develop communication, interpersonal and other critical skills in the job interview process.
- Build a record of work experience
- Acquired employment contacts leading directly to a full-time job following graduation from college
- To identify, write down and carry out performance objectives related to their job assignment.

### **Outcomes of Internship Programme**

- Helps to materialize the theoretical knowledge in the practical field.
- Helps to cope with the changing condition of to days complex business world.
- It is possible to acquire a comprehensive knowledge of complex problems.
- It can help to compete with other competitive institution.
- The internship is done in the practical field. So the knowledge about the relationship between the different sectors can be acquired.
- Through the internship the information about the concern can be compared with the others and the problem can be identified and solved.
- Through the internship direct discussion is with possible high officials and general employees.
- It helps to acquire knowledge about the functions of the organization.
- Plays important role enter in practical life.
- The problems, which may arise during the application of theoretical knowledge, the participating may be able to solve.
- To achieve knowledge and experience about various aspects of NGOs.
- To improve theoretical knowledge about NGO governance.
- To add new practical knowledge with traditional knowledge about NGOs.



### **Approach of the RAWE Programme**

The students will contact the following departments / organization to learn k about agriculture related activities and transfer of technology to farmer all over Tamil Nadu.

1. Krishi Vigyan Kendra,
2. Department of Agriculture,
3. Department of Horticulture,
4. Department of Animal Husbandry,
5. Department of Agricultural Engineering,
6. Department of Revenue,
7. Contact farmers
8. NGOs and
9. Agriculture related industry

### **Overall Outcomes of RAWE Programme**

The overall outcomes of RAWE Programme from the perspectives of the students are summarized below:

- Field experience
- Team work
- Experiential and experimental learning
- Knowledge on field based research and extension methodologies
- Exposure to administration and management issues in context of rural and agricultural development Capacity building
- Acquainted with recent advancement in research and extension
- Updating and collecting information through different methods
- Understanding rural life
- Learning of bottom-up approach in planning
- Learning the techniques of stakeholders' participation in developmental programme
- Understanding local institutions and their need - Conflict management and negotiation skill
- Management of different components of farming system- Working with people organization
- Problem-solving attitude
- Awareness about rural economy
- Impact of rural and agricultural development on rural livelihood
- Knowledge on gender mainstreaming in agriculture
- Evaluation of RAWE Programme

### **RAWE Meetings & Demonstration**



#### 6.4.6. SUPERVISION OF STUDENTS IN PG PROGRAMME

Each post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise a Major Adviser (Chairman) and two members. Of the two members, one will be from the same Department of Faculty of Agriculture and the other in the related field from the other Departments of Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The chairman in consultation with the Head of the Department will nominate the other two members. In the event of the Major Adviser being away on other duty/leave for a period of more than three months, the member of the Advisory Committee from the same Department will officiate as the Major Adviser.

- Guiding students in drawing the outline of research work
- Guidance throughout the programme of study of the students.
- Evaluation of research and seminar credits.
- Correction and finalization of thesis draft.
- Conduct of qualifying and final Viva-Voce examination.
- The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
- Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.

SI.No	No. of PG recognized teachers	Academic Year	Intake of Students	Students :Teachers
			M.Sc.	
1	20	2017-18	20	1:1
2	20	2018-19	20	1:1
3	18	2019-20	18	1:1
4	15	2020-21	15	1:1
5	17	2021-22	17	1:1

**M.Sc. (Ag.) Agricultural Extension Education Students Guided by Faculty Members**

S.No	Name of the student	Name of Faculty / Scientist	Year of submission	Title of thesis
1.	Chigasil.M. Sangma	Dr.Santha Govind	2017	A Study on Knowledge and Adoption of Indigenous Paddy Cultivation and Dairy Management Practices among Tribal Farm Women of West Garo Hills District of Meghalaya
2.	M. Ganapathyramu	Dr.M.Vetriselvan	2017	Training Needs of Turmeric Growers of Erode District of Tamilnadu
3.	R. Deepthy	Dr.K.Kanagasabapathi	2017	An Analysis of Women Empowerment through “ Kudumbashree” Programme in Alappuzha District of Kerala State
4.	M. Gokulpranesh	Dr.G.Tamilselvi	2017	A study on Entrepreneurial Performance of Turmeric Growers in Erode District of Tamilnadu
5.	S. Vijayakumar	Dr.P.Jeyaseelan	2017	Impact of Various Development schemes on the Sustenance of Tribal People in kolli Hills of Namnakkal District
6.	S. Kasidurai	Dr.D.Vengatesan	2017	Information Management Behaviour of Maize Growers of Perambalur District
7.	K. Nightingale	Dr.P.Shanmugaraja	2017	Training Needs of Groundnut growers of Cuddalore District
8.	M. Sakthiganesh	Dr.V.Sakthivel	2017	Training Needs of Sugarcane Growers in Cuddalore District of Tamilnadu

9.	S. Sharmila	Dr.M.Kavaskar	2017	Awareness, Knowledge and Attitude of Extension Personnel of Tamilnadu Towards ICT(Information Communication Technology)
10.	B. Loganathan	Dr.T.Kalidasan	2017	A Study of Technological Gap and Yield Gap Analysis among Cotton Growers in Perambalur district
11.	R. Subashini	Dr.T.Raj Pravin	2017	To Study the Impact of Corporate Social Responsibility (CSR) Efforts Towards Agricultural Development in Cuddalore
12.	J.U. Janusia	Dr.V.Balamurugan	2017	An Analysis of Communication and Marketing Behaviour of Coconut Growers in Tiruppur District
13.	T. Karthikeya	Dr.M.Natarajan	2017	An Analysis of Entrepreneurial Behaviour of Banana Growers in Tiruchirappalli District
14.	K. Priya	Dr.B.Sudhakar	2017	Yield gap and technological gap of paddy growers in trichy district
15.	S. Santhi	Dr.V.Kalirajan	2017	An analysis on decision making behaviour of farm women in paddy cultivation in thanjavur district
16.	S Arunkumar	Dr.M.Vetriselvan	2018	Training Needs of Loose Chrysanthemum Growers of Dharmapuri District of Tamilnadu
17.	A.S Archana	Dr.K.Kanagasabapathi	2018	A study on Sustainable Farming Practices in Paddy Cultivation in Rajakkamangalm Block of Kanyakumari District
18.	D. Bharath	Dr.P.Jeyaseelan	2018	A study on Entrepreneurial behaviour of Rural farm Women Associated with Poultry Farming.
19.	S. Bhuvaneshwaren	Dr. J. Meenambigai	2018	Awareness and Utilization Pattern of ICT Enabled Extension Services By The Farmers in Erode District
20.	T. JenilaStephency	Dr.D.Vengatesan	2018	Entrepreneurial and Marketing Behaviour of Coconut Growers in Kanyakumari District

21.	R. Neelamegam	Dr.P.Shanmugaraja	2018	Yield Gap and Technological Gap of Tapioca Farmers in Salem District
22.	A. Srikanth	Dr.V.Sakthivel	2018	Production and Marketing Behaviour of Tapioca Growers of Dharmapuri District
23.	D. Balu	Dr.M.Kavaskar	2018	An Analysis of Utilization of Information and Communication Technologies (ICTs) among Farm Youth of Tiruvannamalai District
24.	E. Suriyapriya	Dr.M.Kavaskar	2018	An Analysis of Mobile Agro Advisory Service among Farmers Producer Organization (FPO) Members
25.	R. Kanimozhi	Dr.T.Kalidasan	2018	An Impact Analysis on Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in Salem District
26.	P.R Sivapriyan	Dr. R. Jayasankar	2018	A study on the Extent of Adoption of High Density Planting in Cashew by the Farmers of Cuddalore District in Tamilnadu.
27.	S. Dhineshkumar	Dr.R.Jeya	2018	A Study on Knowledge and Adoption Behavior of Medicinal Plant Growers
28.	A. Dhivya	Dr.V.Balamurugan	2018	Learning Experience and Adoption Behaviour of Tapioca Growers in Namakkal District
29.	Hibu Tapa	Dr.M.Natarajan	2018	A Study on Adoption of Indigenous Agricultural Practices among Tribal Farmers of Lower Subansiri District in Arunachalpradesh
30.	Meena M	Dr. I. Isaac Devanand	2018	Communication Behaviour of Mango Growers in Krishnagiri District
31.	D. NirubanChakkaravarthy	Dr.T.Balakrishnan	2018	Impact of Agricultural Training on Trainees of Selected Training Programmes Organized by Krishi Vigyan Kendra, Kundrakudi
32.	K. Poovarasan	Dr.P.Ramesh	2018	Knowledge and adoption of indigenous cultivation practices among tribal farmers in kolli hills

33.	R. Rajesh Kannan	Dr.B.Sudhakar	2018	Technological gap and yield gap among sugarcane farmers in cuddalore district
34.	P. Selvam	R. Muthukumar	2018	Training needs of cashew growers in ariyalur district.
35.	M. Supriya	Dr.V.Kalirajan	2018	A study on organic farming practices among farmers in krishnagiri district
36.	A Arunadevi	Dr.M.Vetriselvan	2019	Communication Behaviour of the Animators of the Women Self Help Groups of Ariyalur District of Tamil Nadu
37.	S. Aarthi	Dr.K.Kanagasabapathi	2019	Impact of Climate Change on Cotton Productivity as Perceived by the Cotton Cultivators.
38.	S. DhileepanJadeja	Dr.G.Tamilselvi	2019	A Study on Entrepreneurial Behaviour of Chilli Growers in Ramnad District of Tamil Nadu
39.	M. Kalpana	Dr.P.Jeyaseelan	2019	A Study on Mobile Based Farm Information Advisory Services of a Private Foundation.
40.	S. Kanishka	Dr. J. Meenambigai	2019	Smart Mobile Phones and Internet Utilization among the Members of Self Help Groups in Erode District
41.	S. Priyanka	Dr.D.Vengatesan	2019	Assess the Suitability of Cotton Technologies for Small Farm Women in Salem District.
42.	M. Samuthra	Dr.P.Shanmugaraja	2019	Training Needs of Turmeric Growers in Namakkal District.
43.	S. Rajaguru	Dr.T.Kalidasan	2019	A Study on Training Needs of Groundnut Growers in Ariyalur District
44.	V. Sneha	Dr. R. Jayasankar	2019	A Study on Impact of Pradhan Mantri Krishi Sinchayee (PMKSY) among the grape Growers in Dindigul District of Tamil Nadu.
45.	V. Thirumalkannan	Dr.T.Raj Pravin	2019	Swot Analysis on Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in Dharmapuri District.
46.	S. Mahalakshmi	Dr.R.Jeya	2019	An Analysis of Entrepreneurial Performance of Cashew Growers

47.	V. Mangaiyarkarasi	Dr.V.Balamurugan	2019	Perception on Information Management of Recommended Sugarcane Cultivation Practices Among the Growers in Tiruchirappalli District of Tamil Nadu
48.	N. Manivannan	Dr.M.Natarajan	2019	A Study on Entrepreneurial Performance of Mango Growers in Salem District of Tamil Nadu
49.	Rajaprakasam R	Dr. I. Isaac Devanand	2019	Information Management Behaviour of Hybrid Cotton Growers of Salem District
50.	V. Sandhiya	Dr.T.Balakrishnan	2019	Evaluation of Training on Sorghum Among Farmers Under ATMA Scheme in Dindigul District of Tamil Nadu
51.	P. Sanjith Kumar	Dr.P.Ramesh	2019	Information Management Behaviour of Groundnut Growers in Salem District
52.	B.S. Sharanya	Dr.B.Sudhakar	2019	Marketing Behaviour and Constraints Experienced by Betelvine Growers in Karur District of Tamil Nadu State
53.	R. Sindhuja	R. Muthukumar	2019	Knowledge and Adoption of Post Harvest Technologies Among Paddy Farmers in Nagapattinam District
54.	S. Syed Irfan	Dr.T.Sujaivelu	2019	Adoption Behaviour of Rose Growers in Krishnagiri District
55.	M. Tamilselvan	Dr. Darling B. Suji	2019	A Study on Perception and Utilization of Eco-Friendly Farming Practices Among the Farmers in Erode District
56.	S. Kavipriya	Dr.G.Tamilselvi	2020	A Study on Entrepreneurial Orientation of Groundnut Growers in Vellore District of Tamilnadu
57.	N. Kavitha	Dr.P.Jeyaseelan	2020	A Study on Participation of Rural Women in Agro-based enterprises
58.	M. Keerthana	Dr. J. Meenambigai	2020	Perception and Utilization of E-Resources Among the Research Scholars of Faculty of Agriculture, Annamalai University.
59.	S. Ragunath	Dr.D.Vengatesan	2020	Entrepreneurial Behaviour of Tribal Farmers in Kolli Hills

60.	R. shanmugapriyan	Sri Dr.P.Shanmugaraja	2020	A Diagnostic Study on Precision Farming in Tomato in Dharmapuri District
61.	A. Abinaya	Dr.V.Sakthivel	2020	Information Management Behaviour of Cashew Growers of Cuddalore District.
62.	R. Booma	Dr.M.Kavaskar	2020	A Study on Utilization of Extension Services of State Department of Agriculture among the Farm Youth in Thanjavur District.
63.	R. Sathishwaran	Dr.T.Kalidasan	2020	A Study on Training Needs of Mango Growers in Krishnagiri District.
64.	S. Kathiresan	Dr.T.Raj Pravin	2020	Developing New Extension Strategies For Climate Change Issues in Namakkal District.
65.	N. Nadim	Dr.R.Jeya	2020	Agricultural Technology Management Agency-An-Analysis
66.	P. Kaviya	Mr.S.Durairaj	2020	Impact of Irrigated Agriculture Modernization and Water Bodies Restoration and Management (IAMWARM) Project on Farmers in Tiruchirappalli District.
67.	R. Nirosha	Dr.V.Balamurugan	2020	Participation of Farm Women in Groundnut Production and Post-Harvest Operation in Thiruvannamalai District
68.	D. Priyadharshini	Dr.M.Natarajan	2020	A Study on Entrepreneurial Behaviour of Poultry Farmers in Namakkal District.
69.	Shanmugapriya T	Dr. I. Isaac Devanand	2020	Entrepreneurial and Marketing Behaviour of Coconut Growers in Dindigul District.
70.	B. Uma Maheswari	Dr.T.Balakrishnan	2020	A Study on Communication Behaviour of Turmeric Growers in Erode District.
71.	P. Vaishnavi	Dr.P.Ramesh	2020	Role of Tamilnadu Corporation for Development of Women (TNCDW) for Women Empowerment of Women in Cuddalore District.
72.	G. Vinoth	Dr.B.Sudhakar	2020	Knowledge and Adoption of Social Media Mobile Application and Agri-Portals Among Redgram Farmers in Tirupattur District - A Critical Analysis.

73.	M. Aravindhan	Dr.V.Kalirajan	2020	A Study on Organic Farming Practices on Tribal Farmers in Sathyamangalam Taluk of Erode District in Tamil Nadu
74.	E. Devadharshini	Dr.T.Sujaivelu	2020	Decision Making Behaviour of Farm Women in Turmeric Cultivation in Salem District.
75.	J. Karthiyaeeni	Dr. Darling B. Suji	2020	A Study on Knowledge and Attitude of Farmers on Crop Insurance Scheme in Dharmapuri District.
76.	G. Gayathri	Dr.G.Tamilselvi	2021	A study of Uzhavan app in Madurai District of Tamilnadu
77.	M. Gokulkishore	Dr.P.Jeyaseelan	2021	Utilization of Social Media by Post Graduate and Doctoral Scholars of the Faculty of Agriculture, Annamalai University for Academic Purpose: An Inquiry
78.	R.Jalagandeshwaran	Dr. J. Meenambigai	2021	Training Needs and Impact Assessment of Farmers on Selected Information Technology Enabled System for Agriculture in Krishnagiri District
79.	A. Kaviyarasan	Dr.D.Vengatesan	2021	A study on Depiction of Indigenous Technical knowledge (ITK) in Agricultural Aspects Prevailing in Yelagiri hills.
80.	S. Kishorkumar	Dr.P.Shanmugaraja	2021	A study on Adoption of Integrated Nutrient Management Technologies by Paddy Farmers in Nagapattinam District
81.	C. Ponalagammai	Dr.V.Sakthivel	2021	Production and Marketing Behaviour of Mango Growers of Dindigul District, Tamilnadu
82.	J.Princyjeno	Dr.M.Kavaskar	2021	Entrepreneurial Behaviour of Dairy Farm Women in Cuddalore District of Tamil Nadu
83.	IR. Reena	Dr. R. Jayasankar	2021	Multidimensional Analysis on Vetiver Growers in Coastal Sandy Tracts of Tamil Nadu
84.	A. Suganya	Dr.T.Raj Pravin	2021	Training Needs of Agricultural Students under RAWE Programme in Coddalore District of Tamil Nadu

85.	K. Thamimansary	Dr.R.Jeya	2021	A Study On Knowledge And Adoption Behaviour Of Grapevine Growers In Dindigul District Of Tamilnadu
86.	V. Tharani	Mr.S.Durairaj	2021	A Study on Marketing Behaviour among the Groundnut Growers of Tirupattur District
87.	A. Thirumal	Dr.V.Balamurugan	2021	A Study On Adoption Behaviour Of Bio-fertilizers In Paddy Crop At Gudiyattam Taluk In Vellore District
88.	R.K. Vasundara	Dr.M.Natarajan	2021	Impact of KrishiVigyan Kendra (KVK) Training Programme Among Farmers of Thiruvarur District
89.	R.Arivukkadal	R. Muthukumar	2021	An analysis of entrepreneurial behaviour of cashew growers in Ariyalur district
90.	R. Arunkumar	Dr.V.Kalirajan	2021	A Study on Communication Behaviour of Turmeric Growers in Pappireddipattaluk of Dharmapuri district
91.	V. Balamurugan	Dr.T.Sujaivelu	2021	An Analysis of Adoption of drip irrigation system on sugarcane cultivation in Pappireddipatti taluk of Dharmapuri district
92.	R. Divyabharathi	Dr. Darling B. Suji	2021	Knowledge and adoption behaviour of paddy growers in pudukkottai district

#### 6.4.7. FEEDBACK OF STAKEHOLDERS

Feedback is obtained from stakeholders at the end of every semester. After analyzing the feedback carefully, suitable welfare measures are taken.

Feedback is obtained from stakeholders at the end of every semester. After analyzing the feedback carefully, suitable welfare measures are taken.

- To quantify the level of satisfaction acquired by students in curricular aspects during the course of learning in Department of Agricultural Extension.
- To measure the level of satisfaction acquired in the skill set by alumni in general and curricular aspects during the course of learning in Department of Agricultural Extension. To identify the pit falls and bottle necks in the process of facilitating teaching learning process
- To address the problems and the gaps for process improvement.
- To derive strategies for quality enhancement and 6. To set new goals for future in the event of new education policy.

Stakeholders	Action Taken
<b>Students</b>	<ul style="list-style-type: none"> <li>• Conducting coaching classes for competitive and qualifying examination such as ASRB NET, ICAR, Fellowship and Ph.D.</li> <li>• Internship introduced during PG programme.</li> <li>• Measures taken to established well equipped Audio Visual Laboratory.</li> <li>• Subscription of e-Journals and Magazine in field of Agricultural Extension.</li> <li>• Regular Institutional visits and short study tours are organized.</li> </ul>
<b>Farmers</b>	<ul style="list-style-type: none"> <li>• Farmers Agricultural Technology and Information Cell is established.</li> <li>• Diagnostic field visits are performed as and when arises.</li> <li>• ICT enabled Farm oriented advisory services like Whats App Group and YouTube Channels is started.</li> <li>• Meetings and Demonstrations are conducted in adopted villages.</li> </ul>
<b>Parents</b>	<ul style="list-style-type: none"> <li>• Department infrastructure is improved</li> <li>• Measures taken for student fellowship</li> </ul>

#### 6.4.8. Student intake and attrition in the programme for last five years

##### M.Sc (Ag.) Students

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
20	20	18	15	17	-	-	-	-	-

##### Students qualified SRF/NET/ARS Examinations:

Name of the students	Degree programme	Roll number	Name of qualified examination	Year
A.Thirumal	PG	197030017	NET	2022

##### Academic progress/ Excellency of PG Students:

Name of the students	Degree programme	Roll number	Number of students in Higher study
T.RamSundar	M.Sc. (Ag)	1450060003	Ph.D, AU
S.Suganya	M.Sc. (Ag)	1450060004	Ph.D, AU
M. GanapathyRamu	M.Sc. (Ag)	1550060009	Ph.D in ICAR institutes
K. Nightingale	M.Sc. (Ag)	1550060011	Ph.D, AU
K. Priya	M.Sc. (Ag)	1550060014	Ph.D, AU
V. Thirumalkannan	M.Sc. (Ag)	1550060022	Ph.D, AU
D. Balu	M.Sc. (Ag)	1650060002	Ph.D, AU

S. Dhineshkumar	M.Sc. (Ag)	1650060003	Ph.D, AU
R. Kanimozhi	M.Sc. (Ag)	1650060005	Ph.D in ICAR institutes
K. Poovarasam	M.Sc. (Ag)	1650060009	Ph.D in ICAR institutes
M. Suriyapriya	M.Sc. (Ag)	1650060015	Ph.D, AU
D. Bharath	M.Sc. (Ag)	1650060019	Ph.D in ICAR institutes
M. Supriya	M.Sc. (Ag)	1650060020	Ph.D in ICAR institutes
V. Sandhiya	M.Sc. (Ag)	1750060007	Ph.D, AU
S. Aarthi	M.Sc. (Ag)	1750060008	Ph.D, AU
P. Sanjithkumar	M.Sc. (Ag)	1750060020	Ph.D, AU
S. Rajaguru	M.Sc. (Ag)	1750060021	Ph.D, AU
R. Satheeshwaran	M.Sc. (Ag)	1850060005	Ph.D in ICAR institutes
P. Vaishnavi	M.Sc. (Ag)	1850060006	Ph.D in ICAR institutes
S.Ragunath	M.Sc. (Ag)	1850060016	Ph.D in ICAR institutes
J. Karthiyaeeni	M.Sc. (Ag)	1850060020	Ph.D, AU
K. ThamimAnsary	M.Sc. (Ag)	1950060012	Ph.D, AU
A.Thirumal	M.Sc. (Ag)	197030017	Ph.D in ICAR institutes

#### Placement Details of PG students

Academic Year	Number of students graduated	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	20							Nil
2018-19	20							Nil
2019-20	20				1		1	5%
2020-21	17				2		2	12%
2021-22	15				1		1	7%

Name of the students	Degree programme	Roll number	Types of Job (Govt. or Private)
Mr. N. Manivannan	M.Sc. (Ag)	1750060015	Private
Mr. V. Balamurugan	M.Sc. (Ag)	197030002	Private
Mr. R. Arunkumar	M.Sc. (Ag)	197030003	Private
Mr. M. Sudharshan	M.Sc. (Ag)	207030003	Private

#### 6.4.9 ICT Application in Curricula Delivery

- The teaching faculty are used PPT presentations, e-resources and online journals and magazines for effective delivery of various course contents in PG programme.

- They also updated the usage of IT enabling gadgets and online platforms like ZOOM, GOOGLE MEET, MS TEAM and GOOGLE CLASS ROOM for handling classes during COVID 19 Pandemic.

- Post graduate programme classes are handled with advanced audio visual aids like interactive white board, smart TV, e-learning modules of e-PG pathsala and vidya mitra, e-content portals and YouTube video clippings.

- Students are made to make presentations in the recent topics of relevant subjects with the use of ICT tools.

- The staff member and scholars also made presentations through Video Lecture and Video Assignments related to the course content.

1. ICTs for dissemination of Agricultural Technologies: <https://youtu.be/fk1bzixwB6o>

2. Integrated Farming Systems: [https://youtu.be/ZinMSmgf1\\_Q](https://youtu.be/ZinMSmgf1_Q)

3. Pachathundu Mobile App: <https://youtu.be/WVChzcx8LqA>

4. Capsule Rice Farming: <https://youtu.be/gbNpKswKjYs>

5. TNSCS EDPC: <https://youtu.be/dvQppacXLdU>

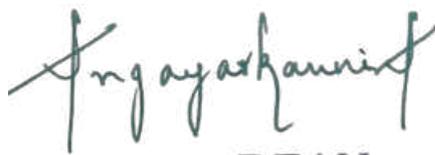
6. Drone Technology: <https://youtu.be/XWj81H4R23M>

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. A. Angayarkanni** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Microbiology

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



**M.Sc. (Ag.) in Microbiology**  
**CONTENT**

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ANNAMALAI UNIVERSITY

(Accredited with 'A+' Grade by NAAC)

ICAR ACCREDITATION

FACULTY OF AGRICULTURE

SELF STUDY REPORT FOR

M.Sc. (Agri.) MICROBIOLOGY

Annamalai nagar- 608 002

Tamil Nadu  
2022 -2023

#### 6.4. Self-Study Report for the Programme

Name of the Programme: M.Sc. (Agri.) Microbiology

Conducted by: Department of Agricultural Microbiology

##### 6.4.1. Brief History of M.Sc.,(Agri.) Microbiology Programme

The Division of Microbiology was established during 1958 under the Department of Agriculture for the first time in India by an eminent world renowned Microbiologist **Dr.G.RANGASAMY**. Even before attaining Department status, the division offered post graduate programme and Ph.D., Programme in Microbiology. During 1980, the division got elevated as Department.

Sl.No.	Historical Itinerary	Year of Commencement/ Period
1	Division of Microbiology	1958
2	Post Graduate in Agricultural Microbiology	1959 onwards
3	Department Status	1980

As per the fifth Dean's committee recommendation of ICAR for the M.Sc. (Agri.) Microbiology programme, a total of 70 credits are offered which includes 20 credits for major courses, 8 credits for minor courses, 6 credits for supporting courses, 5 for common courses, 1 for credit seminar and 30 credits for thesis research with effect from 2022-23.

##### Semester wise Distribution of courses

Sl. No.	Course work	Credits
1	Major courses	20
2	Minor courses	08
3	Supporting courses	06
4	Common courses	05
5	Seminar courses	01
6	Thesis research / idea	30
Total Credits		70

## **Vision**

- To grow into a leading and reputed centre in the integration of teaching and learning in Agricultural Microbiology through bioinoculants, organic farming single cell protein and composting technology.
- To support coastal and delta agriculture with sound and sustainable development of Agricultural productivity by low-cost technology like adoption of Bio-inoculants.

## **Goals**

- To provide quality education to the students with updated and latest developments in the subject and develop completely qualified microbiologist to excel in the field of agriculture and Agro industries.
- To promote research and training on sustainable and ecofriendly approaches for increasing the agricultural productivity using Bio-fertilizers and to encourage the PG students with entrepreneurship skills.
- To create environmental awareness and provide practical knowledge on waste management for clean environment and establish a microbial culture collection bank.
- To establish the training center for students, govt. officials, private entrepreneurs' farmers and quality control laboratory for bio inoculants.

## **Objectives**

- To impart quality education in relation to changing the scenario in the field of microbiology and offer hands on training in biofertilizer production (Bacterial Biofertilizers, Azolla, Blue green algae and AM Fungi mass production and waste management).
- To undertake research on need based, location specific problems, through survey and developing of stress tolerant strains to combat biotic and abiotic stresses.
- To develop repository of microbial cultures and make availability of microbial cultures for research and commercial purposes.
- To analyze the quality of various bio-inoculants samples from various private bio inoculants producing companies.

### Strategic plan to achieve Vision and Goal

Goal	Objectives	Implementation plan	Performance Metrics/Time line	Outcome
To provide quality education to the students with updated and latest developments in the subject and develop completely qualified microbiologist to excel in the field of agriculture and Agro industries.	To impart quality education in relation to changing the scenario in the field of microbiology.	Periodical upgradation of course content covering both biocontrol and practical informations by getting inputs from stake holders and referring the syllabus of pioneer institutes in India.	Once in three years.	A periodically updated curriculum adds up to the domain knowledge of the students. Imparting sound knowledge and motivation created by Faculties, the higher number of students got Ph.D admissions in other institutes and have gone to abroad for higher studies. Increased number of our students got employment in private, public sectors and MNC's.
To Promote research and training on sustainable and eco friendly approaches for increasing the agricultural productivity using Bio-fertilizers and to develop the PG students with entrepreneurship skills	To undertake research on need based, location specific problems, through survey, and developing of stress tolerant strains to combat biotic and abiotic stresses.  To offer hands on training in Biofertilizer production, (Bacterial Biofertilizers, Azolla, Blue green algae and AM Fungi mass production)	Motivating PG students to take part in conducting trials in farmers' field so as to assess the ground reality  To identify locations specific problem and find out the solution by systematic research approaches  Training the students in biofertilizers mass productions technologies	Every Year	Problems indentified through field trial conducted in farmers field in different locations  Developed solutions for the location specific problems  Publishing the research findings in reputed journals for the benefit of young microbiologists  Encouraging the students to present their research findings in national and international seminars/conferences  Possibility of starting Biofertilizer production unit by the students

Goal	Objectives	Implementation plan	Performance Metrics/Timeline	Outcome
To create environmental awareness and provide practical knowledge on waste management for clean environment.	To impart knowledge on the various technologies of composting, vermicomposting and waste water treatment methods.	<p>Conducting students participatory environmental awareness campaigns.</p> <p>Training the students on various composting techniques like aerobic, anaerobic, rotary drum and vermicomposting technologies.</p> <p>Developing technologies for effective utilization waste water for SCP &amp; Biofuel production.</p>	Every year	<p>Creation of environmental awareness.</p> <p>Nutrient rich manures generation through waste composting.</p> <p>Generation of income by SCP production and clean environment by biofuel use.</p>
To establish a microbial culture collection bank.	<p>To develop a repository of microbial cultures</p> <p>To make availability of microbial cultures for research and commercial purpose.</p>	Collection and maintenance of microbial cultures.	All round the year.	<p>Deposits of variety of microbial cultures</p> <p>Income generation by mother culture sales</p>
Establishment of Quality control laboratory for bio-inoculants.	To analyse the quality of various bio-inoculants samples from various private bio-inoculants producing companies.	Periodic collection of the sample from needy person	All round the year.	<p>Analysis of the samples in the department</p> <p>Income generation by sample analyses fee.</p>

## Accomplishments

The Division of Microbiology was started by the eminent world renowned Microbiologist Dr.G.Rangaswamy for the First time in India, **Dr.G.Rangasamy**, was trained under the able guidance of **Nobel Laureate, Dr.S.A.Waksman**. Then the Division of Microbiology was nourished by several dedicated and enthusiastic microbiologists such as **Dr.A.Mahadevan** (Eminent Scientist), **Dr.N.N.Prasad (First person to introduce Lignite as carrier material for bioinoculant production in India)** and alternate feed stocks for biogas production), Dr.M.Deiveekasundaram, Dr.S.M.Muthukaruppan, Dr.N.Ramanathan, Dr.P.Tholkappian, Dr.D.Stella and Dr. V. Muralikrishnan who is currently guiding the Department as the Head.

The alumni adoring various higher positions as Vice chancellor of TNAU Prof. Dr.S. Kannaiyan and Prof.Dr.K.Ramasamy, as registrar of TNAU Dr.P.Santhanakrishnan, and Dr.R.Tamilvendan. **(At present)**. Prof. Dr.S.Kannaiyan also occupied the top position as the Chairman, National Bio Diversity Authority of India (NBA). Some of other alumni also occupied key positions like Director of IIFPT, Thanjavur (Dr.K.Singaravadivel), The Director of Rubber research institute (Dr.R.Kothandaraman), Deans of various Agriculture colleges affiliated to TNAU (Dr.S.Antony Raj, Dr.G.Prasad, Dr.N.O.Gopal, Dr. S.Pandia rajan) and Professor and Heads of Department of Microbiology, TNAU, (Dr.D.Purushothaman, Dr.K.Kanthasamy Dr.S.P.Sundaram, Dr.P.Marimuthu, Dr.H.Gopal and Dr. K. Suresh kumar) and Dr. K.Kumar held a position as Director in natural resource management, Dr. J. Prabhakaran as Director, CPMB, TNAU, Mr. R.Selvam as Vice president in Malaysia Biotech corporation.

Our Department is first in India to organize **three Summer Institute courses in Microbiology during 1964, 1965 and 1974 sponsored by UGC & ICAR**. The Department of Agricultural Microbiology had been selected as one of the centers among 11 in India, under **All India coordinated Research project (AICRP) on Biological Nitrogen Fixation from 1987 to 2000**. The Department has conducted **two Annual workshops of All India Coordinated Research Project (AICRP) on Biological Nitrogen Fixation during 1984 & 1990**. **The Department has conducted the 30<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) during January 9-11, 1990**. Department has conducted training for Agricultural Officers, Assistant Agricultural Officers and Farmers under Mission Mode Project funded by DBT during the year 1990- 1992. The Department has also organized Southern Regional Conference on Microbial Bio-inoculants on 21-22 March 2002 and three other National Conferences in the year 2006, 2013 and 2014. National conference on Novel microbial technologies for sustainable agriculture and allied industries funded by NLC India was held during 2019. During the pandemic period (2020 & 2021) our department organized **two workshops and six webinars**.

The Department was instrumental to start M.Sc., (Integrated) Five Years course in Microbiology during 2002. Later in 2007 and 2009 M.Phil, Ph.D. and M.Sc. Microbiology (two Years (CBCS) courses were started by us on behalf of Faculty of Science.

In the Department of Microbiology more than **100 Ph.Ds** were awarded and to document the achievement, a **compendium of Ph.D. was released** on the occasion of the

National seminar on **Frontiers in Applied Microbiology** held on **14<sup>th</sup> Feb.2014**. Several International and National seminars were also conducted in the Department. Many numbers of special invited Lectures were organized in the banner of Microbiological Association.

The Department's research activities could be realized through the list of international and national collaborators such as **PL480 IV & V (USDA), DBT, UGC, DST, DNES, MNES, NLC, TANSCHÉ and TNSTC**.

The faculties are more expertise in various fields such as **bio inoculants development and production, solid and liquid waste management, food Microbiology, fermentation processes and biodegradation of poly-ethylene**. Recently our **faculties received four patents for Polyethylene Bio Degradation and Plant Mediated Nano particle Coated Fabrics**. Specific cultures isolated and characterized in the department are being deposited in NCBI (National Centre for Biotechnology Information). In addition to the above our **faculties are actively participating in university administrative works**.

There are **Six Endowments** *Viz.*, Dr.G.Rangasamy Endowment, Vallalar Endowment, Srilochini Varadarajulu Endowment, Shri. M.P.Damodharan Endowment, Ramaswamy padayatchiar Endowment and Dr.N.N.Prasad Endowment, **were constituted for the first rank holder in Postgraduate Degree Examinations**. The Department has also motivated the students and **handled special classes** to take up national level competitive examinations *viz.*, National Eligibility Test (**NET**) and Agricultural Research Scientist (**ARS**) Exam.

The faculties also visited various countries (USA, Singapore, Srilanka, Thailand, Vietnam, Malaysia, Egypt, Indonesia, Philippines, Mauritius, Dubai and Hong Kong) and attended many conferences and workshops. They were also actively involved in professional development activities by becoming members in various professional bodies. Faculty members have qualified National Eligibility Test conducted by the Agricultural Scientists Recruitment board of the ICAR. They also continuously do update their subject of specialization by attending orientation, refresher, Seminar, Conference, training and workshops conducted by UGC, ICAR, DBT, DST etc.,

At present, the Department focuses on the various thrust areas of Biological Nitrogen Fixation, Integrated Nutrient Management, formulation of **Bio-inoculants, composting technologies, Food preservation, SCP production, Biosurfactants and Biopolymers**.

Category	Up to 2016	Period (2017-22)
Number of Publications (Journals)	520	122
Number of Publications (Seminars/Conferences/Workshop/Symposium)	220	45
Number of Books & Book chapters published	59	65
Number of Projects obtained	62	15
Grant mobilization ( <i>Lakh Rupees</i> )	355.17	92.00
Number of Ph.D. Thesis Produced	148	3
Number of PG Thesis produced	341	75
Number of Seminars/ Workshops/ Conference/ Symposium Organized	12	9
Number of Awards Received by the faculties	20	33
Professional Visits to the Foreign Countries by the faculties	25	5

### Salient research achievements of the Department

1. Lignite was developed as a carrier material for the Biofertilizer production, as first report in India
2. An affordable biocontrol agent *Methylobacterium* against rice blast has been identified and developed as a biofloc that augmented the survival of *Methylobacterium* in rice rhizosphere.
3. An innovative technology was developed for the microbial conversion of water hyacinth to biocompost using bio-inoculants Viz., *Cellulomonas sp.* *Penicillium sp.* *Trichoderma sp.*
4. PGPR and AM fungi consortium for medicinal plants was developed.
5. A new formulation of *Azospirillum* bioinoculant was developed to increase the shelf life up to 12 months
6. Alternate low cost carrier material for *Rhizobium* and *Azospirillum* bioinoculant had been developed using Biochar.
7. Strategies for enhancing biosurfactant production by *Serratia rubidaea* using agro industrial waste have been evolved
8. Deposited lipopeptide biosurfactant producing *Bacillus cereus* strain SNAU01 used as a biocontrol agent against certain root pathogens.
9. Deposited *Pseudomonas aeruginosa* strain PBS29-RHL001 rhamnosyl transferase gene, partial cds. Accession number: MG956726. (743 bases) (Protein id: AWD 31663.1 residues 1 to 211), using this biosurfactant, nano particles of less than 60nm size up to six months, was produced.
10. For the first time in India, Nano emulsion of olive and sunflower oil was found have the antibacterial activity against human pathogen *E-coli*.
11. A significant Biofuel research finding was achieved in the production of bio hydrogen from waste water to be used as a renewable energy source.

12. Significant research has been made on the biodiesel production from microalgae *Chlorella variabilis*
13. Notable research on agrowaste management for Bioethanol and vinegar production from cashew apple by using *Zymomonas mobilis* was done.
14. An innovative technique for mass multiplication of *Spirulina platensis* to be used as SCP using rice mill effluent has been developed.
15. Growth optimization of *Wauter siaeutropha* was achieved for higher production of PHB to be used as biodegradable plastic

#### Patents Awarded to our department

1. Low-Density Polyethylene (LDPE) Degradation Process **Dr. R.Parthasarathi**, Dr.S.Nalini, **Dr.R.Elango**, **Dr.P.Sivasakthivelan**, **Dr.B.Karthikeyan**, Dr.T.Selkvamuthukumar and Dr.K.Arivukkarasu granted patents from Commissioner of Patents, Australian Government (IP Australia) **Patent No. 2021100276** ;Biological Sciences; Completed; Filed 2021-01-16; Published **2021-03-31**.
2. Ready to use biosurfactant and preparation method there of Dr. P. Poonguzhali. Dr.S.Rajan. Dr.R.Parthasarathi. Dr.R.Srinivasan. Dr.AR.Kannappan Annamalai University; Indian Patent No. 202141029356; Biological Sciences; Filed 2021-06-30; Published 2021-07-09.
3. Plant Mediated Nano particle Coated Fabrics (Nano fabrics) with Antimicrobial Property and Wound Heal by Dr. K. Sivakumar and Dr. N. Pandeewari Indian Patent No.202041056850; Biological Sciences; Filed 2020-12-20; Published dated 2021-01-08.
4. System for nanomerization of milk fat globules. Dr. Manoharan Melvin Joe, Dr. Abitha Benson, Dr. Rengasamy Parthasarathi, Dr. RasavelElango, Dr.GanapathySenthilkumar, Dr.Subramanian Bragadeeswaran, Dr. M. Senthilkumar, Dr. Balakrishnan Karthikeyan, Dr. J. Sriman Narayanan, Dr. P. Sivasakthivelan, Dr.R. Anandham, German patent No. 20202210051, Pubilshed dated 03.02.2022, German.

#### 6.4.2 Faculty Strength

Presently the Department's teaching, research and extension mandates are well taken care of with twenty four faculties who specialized in Bioinoculant technology, Vermiculture Technology, Fungal Bioinoculant, Bio surfactant, Liquid Biofertilizer, Organic waste Management and Food Microbiology,

Sl. No.	Post	Sanctioned	Filled	Vacant	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	5	5	0	-
2	Associate Professor*	9	9	0	1
3	Assistant Professor*	10	10	0	5

\* Assigned responsibilities for multiple programmes

**Faculties from other department handling our department courses**

<b>Sl. No.</b>	<b>Cadre</b>	<b>Other departments</b>	<b>Faculty in place (As on August 2022)</b>
1	Professor*	Statistics	1
2	Associate Professor*	Genetics	1
3	Assistant Professor*	Computer science	1
		Language	1
		Horticulture	1
<b>Total</b>			<b>5</b>

**CREDENTIALS OF THE FACULTY**

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total Number of Publications (2017 to 2022)
				PG	Ph.D.		
1	Dr.V.Muralikrishnan Professor and Head	28	Microbial inoculant Consortium for sugarcane, biofuel production.	18	07	12	-
2	Dr.D.Stella Professor	28	Stress tolerant inoculant development	17	07	40	-
3	Dr.P.K.Sivakumaar Professor	26	Plant Growth Promoting Rhizobacteria Induced Systemic Resistance	15	07	11	-
4	Dr.S.Kalaiarasu Professor	26	Bioremediation of xenobiotics.	16	08	42	7
5	Dr.D.Reetha, Professor	22	New formulations and shelf life improvement of Biofertilizer	16	08	30	4
6	Dr.R.Elango, Associate Professor	21	Composting Techniques	16	06	31	7
7	Dr.D.Kanchana , Associate Professor	21	Food Preservation Techniques	19	04	35	5
8	Dr.M.Jayanthi, Associate Professor	21	Bioinoculant AM fungi	17	04	19	-
9	Dr.G.Usharani , Associate Professor	21	Plant Growth Promoting Rhizobacteria - Biocontrol	7	06	45	-
10	Dr.B.Karthikeyan, Associate Professor	21	Microbial interactions- medicinal plant	15	04	35	3
11	Dr.K.Muthuselvam Associate Professor	20	Vermi biotechnology	15	04	11	-
12	Dr.J.Sriman Narayanan, Associate Professor	20	Bio ethanol and Enzymology	10	04	17	4
13	Dr.V.Prabudoss Associate Professor	19	<i>Glucano acetobacter</i> - Sugarcane	16	03	27	4
14	Dr.J.Divakaran, Associate Professor	19	Management of municipal solid waste	05	01	12	-

15	Dr.S.Mahalakshmi, Asst. Professor	18	Plant Growth Promoting Rhizobacteria - formulation	15	02	43	4
16	Dr.R.Parthasarathi , Asst. Professor	16	Biosurfactants and nanoscience	13	04	33	10
17	Dr.S.Bharathiraja , Asst. Professor	16	AM fungal Symbiosis- Floriculture	13	01	10	4
18	Dr.S.Dinakar Asst. Professor	16	Bio flocculation studies	06	02	15	6
19	Dr.N.Pandeeswari Asst. Professor	16	Halophiles in coastal agriculture.	03	-	25	9
20	Dr.M.Vijayapriya, Asst. Professor	16	Silicate Solubilizing bacteria	01	-	30	7
21	Dr.G.Kumaresan Asst. Professor	16	Single cell protein Technology	04	-	33	12
22	Mrs.J.Jayachitra, Asst. Professor	16	Human Probiotics	03	-	25	8
23	Mr.K.Sivakumar Asst. Professor	15	AM fungal Symbiosis- Horticulture	04	-	34	12
24	Dr.P.Sivasakthivelan Asst. Professor	14	Agriculturally Beneficial Microbial consortium development	04	-	60	16

#### Awards/Recognitions/Abroad visits by Faculty

Sl.No.	Name of the Faculty	Awards/Recognitions	Countries visited	Purpose of the visit
1	Dr.V.Muralikrishnan Professor	Akshaya Vignan Mitra Award	-	-
2	Dr. P.Tholkappian Former Professor&head	-	Kuala Lumpur, Malaysia	International conference
3	Dr.D.Stella Professor	Best Motivator National Award	-	-
4	Dr.S.Kalaiarasu Professor	Award for excellence Outstanding biotechnologist award	-	-

		Best krishishak Award		
5	Dr.R.Elango, Professor	-	University of Ulster, UK - 2022	For signing research MoU
6	Dr.D.Kanchana, Associate Professor	Women Researcher Award Dr. Radha Krishnan Best Teacher State Award	-	-
7	Dr.G.Usharani, Associate Professor	Excellence Service Award Indo Asian Distinguished Women Microbiologist Award	-	-
8	Dr.B.Karthikeyan, Associate Professor	Outstanding Scientist	-	-
9	Dr.V.Prabudoss Associate Professor	Best Educational list National Award Dr. B. R. Ambedkar National Award Dr. A. P. J. Abdul Kalam National Award	-	-
10	Dr.S.Mahalakshmi, Asst. Professor	Excellence in Research Award	-	-
11	Dr.R.Parthasarathi , Asst. Professor	PEARL- Foundation Excellent Researcher Award National education excellence achievers award Best book contribution award	Kuala Lumpur, Malaysia  University of Ulster, UK - 2022	International conference  For signing research MoU
12	Dr.S.Bharathiraja , Asst. Professor	Excellence In Teaching Award	-	-
13	Dr.S.Dinakar Asst. Professor	Outstanding Microbiologist Award Young Scientist Award	-	-
14	Dr.N.Pandeeswari Asst. Professor	Excellence In Research Award Excellent Researcher in Biological Nitrogen Fixation - Salt Tolerant Rhizobium	-	-

15	Dr.M.Vijayapriya, Asst. Professor	Out Standing Women Scientist Award Dr. A. P. J. Abdul Kalam National Award	-	-
16	Dr.G.Kumaresan Asst. Professor	Outstanding Microbiologist Award Dr. A. P. J. Abdul Kalam Award for Teaching Excellence 2020 Excellence in Teaching Award	-	-
17	Mrs.J.Jayachitra, Asst. Professor	Dr. A. P. J. Abdul Kalam Award for Teaching Excellence Best Researcher in Agricultural Microbiology	-	-
18	Mr.K.Sivakumar Asst. Professor	Young scientist award	-	-
19	Dr.P.Sivasakthivelan Asst. Professor	Young Scientist Award - 2019 Best Young Scientist Award 2020 Best Technical Consultant Award 2020 Award of Appreciation- 2020 Best Scientist Award - 2020 Teacher Innovation Award Nation Builder Award 2021 Young scientist award - 2021 National education excellence achiever award-2022 International research excellence award-2022 Best oral presentation award-2022	Kuala Lumpur, Malaysia	International conference

**List of funded Projects (2017-2022)**

Sl.No.	Title of the project	Name of Principal investigator & Co Principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
1	Bio efficacy testing of Bacillus subtilis based bio fungicide against late blight in Tomato	Dr.R.Parthasarathi & Dr. P.Tholkappian	2016-2017	Novozymes South Asia Pvt. Ltd., Bangalore.	2.60
2	Bioefficacy testing of soil and foliar application products on Chilli	Dr.R.Parthasarathi & Dr. P.Tholkappian	2017-2018	Novozymes South Asia Pvt. Ltd., Bangalore.	2.79
3	Bioefficacy testing of soil and foliar application products on Paddy	Dr.P.Tholkappian & Dr.R.Parthasarathi	2017-2018	Novozymes South Asia Pvt. Ltd., Bangalore.	2.79
4	Evaluation and performance of different coconut indigenous medicine and mixer on growth and yield parameter of coastal coconut plantation of Chidambaram	Dr.S.Dinakar & Dr.S.Bharathiraja	2018-2019	Cocom &Co., Thiruvaiyaru.	2.15
5	Evaluation of the bioefficacy of bio fungicide nutrient supplement and anti-transparent formulations in selected crops	Dr.R.Elango & Dr.R.Parthasarathi	2019-2020	M/s. Scientific fertilizer Company (P) Ltd., Coimbatore.	2.20
6	Evaluation of the bioefficacy of Chelated Multinutrients Mixture formulations and their effect on selected crops	Dr.R.Elango & Dr.R.Parthasarathi	2019-2020	M/s. BG Crop science and Technologies (P) Ltd.,Madurai.	2.66
7	Evaluation of the bioefficacy of Plant growth Promoting formulations and Micronutrients formulations and their effect on selected crops	Dr.R.Elango & Dr.R.Parthasarathi	2019 -2020	M/s. BG Crop science and Technologies (P) Ltd.,Madurai.	3.00

8	Microbial and enzymatic analysis in Cotton, Wheat & Chick Pea soil	Dr.K. Sivakumar	2019-2021	Eurofins Agrosience Services Pvt. Ltd.,	3.10
9	Microbial and enzymatic analysis in Soybean soil	Dr.K. Sivakumar	2019-2021	Eurofins Agrosience Services Pvt. Ltd.,	2.90
10	Development of novel chitinolytic consortium based bioformulations and its evaluation as a potential bio control agent against ( <i>Arachis hypogea</i> . L)	Dr.P. Sivasakthivelan	2019-2021	TNSCST, Chennai	3.60
11	Biodegradation of low-Density polyethylene (LDPE) using Gut microbial consortium isolated from Indian meal worm ( <i>Tenebrio molitor</i> ) -an approaching feasible technology	Dr.R.Parthasarathi & Dr.P.Sivasakthivelan	2021-2024	TANSCHE, Chennai	48.56
12	Biodegradation of low density polyethylene (LDPE) using gut Bacterial formulation –A forthcoming commercial technology	Dr.R.Parthasarathi	2022-2024	RUSA, UGC	10.13
13	Bio-efficacy of LCO fortified Water Soluble Fertilizer to be applied through fertigation in tomato	Dr.R.Parthasarathi	2022-2023	Novoenzymes South Asia Pvt.Ltd.. Bangalore	2.83
14	Bio-efficacy of LCO fortified Mye in Paddy	Dr.R.Parthasarathi	2022-2023	Novoenzymes South Asia Pvt.Ltd.. Bangalore	1.10`
15	Bio-eflicacy of LCO fortified Mye n Tomato	Dr.R.Parthasarathi	2022-2023	Novoenzymes South Asia Pvt.Ltd.. Bangalore	1.59
<b>Total</b>					<b>92.00</b>

### 6.4.3 Technical and supporting staff

Nine Technical and supporting staff members in the Department are helping in academic, research and administrative activities.

Sl. No.	Sanctioned staff	Staff in place	Responsibilities
1	<b>Ministerial Staff</b> Special officer -1 Assistant -2	3	Establishment & administrative work, purchase & budget, Data maintenance
2	<b>Technical Staff</b> Assistant programmer -1 Assistant Technical officer -1	2	Computer operation, Issue of chemicals and glassware, maintenance of library, store keeping
3	<b>Basic services</b> Maistry - 2 Helper - 2 Garden Superintendent - 2 P.H Menials - 1	7	Maintenance of Pot culture yard, Dispatch of letters and circulars, maintenance of Research field, green house. Maintenance of laboratories and make arrangements for practical class

### 6.4.4. Classrooms and Laboratories

The Department has well equipped class rooms and laboratories with wide range of instruments to provide comfortable in learning and research. Head room and office are well equipped with basic amenities such as Xeroxing, printing and computer facilities. Three separate laboratories for UG classes, one PG lab, two class rooms and separate store room for chemicals and glass wares are available the details are given below.



S.No	Facility	Number	Area (sq. ft)	Description & Equipments housed
1	Class Room	2	930 360	Conducting Theory classes
2	Laboratories	4	Lab-I-960 Lab II-262 Lab-III-630 Lab- IV-308 PG Lab- 360	A Laboratory with all basic instrumentation facilities 1. Autoclave, - 4 2. Hot air oven, - 6 3. BOD incubator, - 5 4. Electronic Balance, - 2 5. Distillation Unit, - 2 6. Light Microscope, - 6 7. Alcohol Unit, - 1 8. Hot plate, - 2 9. Laminar Flow chamber. - 9 10. Cooling centrifuge, - 1 11. phase contrast microscope, - 46 12. Fermentor with complete accessories. -1 13. Microwave oven - Nil
3	Instrumentation room	1	570	1. Spectrophotometer, -1 2. HPLC, -1 3. Gel documentation unit, - 3 4. Light microscopes, - 6 5. stereo zoom microscope, - 1 6. High resolution Microscope with image capturing system, -1 7. ELISA Reader, -1 8. Refrigerator, -7 9. UV- Visible double beam, -1 10. Flame photometer, -2 11. PCR, -1 12. Centrifuge, -2 13. Nitrogen Analyser system, -1 14. Vacuum Desiccators, -1 15. Hot air oven, - 1 16. Autoclave, -1 17. pH Meter, -2 18. Mechanical Shaker -1

S.No	Facility	Number	Area (sq. ft)	Description & Equipments housed
4	Library	1	360	The Department Library is provisioned with 924 text and reference books, 200PG and 60 Ph.D. thesis, more than 10 national and international journals with conference proceedings and volumes, project work reports, reprints of published research papers.
5	Chemical & Glassware room	1	360	All the chemicals, Glassware and rare chemicals required for the regular UG, PG & Ph.D. classes.
6	Pot culture yard	1	13080	Available for semi field research and potculture studies. One green house to carry out specific in-situ enclosure studies. The area is provided with round the clock irrigation facility and necessary labour
7	Biofertilizer production unit room	1	360	To carry out the Mass production of Bio-fertilizers by using 18 Fermenter.
8	Implements & Fertilizer Room	1	67	For maintenance of implements and fertilizer required for the pot culture yard for the students trial purpose
9	Bio waste disposable room	1	150	For the safe disposal of used media, microbial cultures and cotton swaps

#### 6.4.5 Conduct of Practical and Hands-on-Training

Theory classes are conducted in single batch and during practical classes the students are divided into four groups and imparted with hands on training on Isolation, Identification and characterization of various microorganisms, conducting various staining methods for identification, estimation of microbial population from various sources, mass multiplication of bio-inoculants, vermin composting and handling of various instruments.

Staff student ratio was well maintained to deliver quality education. Periodical assessment was carried out by conducting Internal Assessment and class tests. Working models were made to make learning more creative. Outdoor classes were arranged for the



sample collections and visits to various industries and institutions to update their knowledge.

#### 6.4.6 **Supervision of students in PG programme**

All the 24 faculties in the department are guiding PG students for their research work. For the past 5 years Department of Microbiology successfully produced 69 M.Sc., (Ag) from Agricultural Microbiology, during their research, each Post Graduate student shall have an advisory committee which is formed before end of the first semester to facilitate the student in carrying out the assigned the *sis* program. The advisory committee shall comprise of a chairman and two members, of which one member shall be from the major Discipline and another from any other Discipline in their related field of the *sis* research. The chairman of the advisory committee will guide throughout the program and he helps the student in the selection of major and minor courses and seminar topics. Continuous monitoring of the *sis* research and maintaining research monitoring register for each student. Weekly once the students' progresses reviewed by the chairman. The Professor and Head of the Department is taking up the monthly review to assess the progress of research done by PG students.

At the end of each semester the evaluation of research is done by the advisory committee members by presenting their progress of research at the Department level where all the faculties and students attend and offer their remarks/ suggestions for improvement of their research.

PG students are given seminar topics on current stream of thoughts and advised to present the seminar before staffs and students.

Mid-semester examinations are conducted for each subject as per the scheme drawn by the Head of the Department/PG coordinator and evaluated. The evaluated answer scripts are shown to the students.

Those students who fail to appear for the mid-semester examinations due to genuine / official reasons are permitted to take up missing examination of the particular course.

Final practical examinations are conducted separately towards the end of each semester by adopting a separate schedule proposed by the Head of the Department and approved by the Controller of Examinations. Two examiners (Internal and External) appointed by the University will conduct the practical examination and evaluate theory answer scripts. Re -Valuation is also allowed for the needy students. Research thesis will be sent to State agriculture University for evaluation, afterwards viva voce will be conducted.

S.No.	Name of Faculty/ Scientist	Name of the Students Guided	Year of Submission	Title of Thesis
1	Dr.R. Elango	G. Gunasekaran	2017	Studies to improve survivability and shelf life of liquid biofertilizer
2	Dr.R. Parthasarathi	Vignesh	2017	Development of Novel rhamnolipid formulations to control Phytophthora infestans in tomato cultivars
3	Dr. K. Muthuselvam	C. Seenu@deepanraj	2017	Studies on biomass derived vermicompost and its a related products on tomato
4	Dr.J.Sriman Narayanan	P.Kalaiarasi	2017	Growth promotion and induction of systematic resistance in green super rice (GSR-8) BY <i>Methylobacterium sp.</i>
5	Dr. S. Mahalakshmi	B. Suriya sabarath	2017	Studies on the inoculation effect of PGPR on the growth and alkaloid content of Aloe vera
6	Dr.S.Bharathiraja	V.loganathan	2017	Synergistic effect of Dual inoculation with Arbuscular Mycorrhizal fungi and Phosphobacteria on Sunflower ( <i>Helianthus annuus.L</i> )
7	Dr. M. Vijayapriya	P. Manikadan	2017	Studies of evaluating performance of silicate solubilizing Bacteria (SSB) and induction of systemic Resistance mediated against on <i>pyricularia oryzae</i> in rice crop.
8	Dr.M.Jayanthi	C.Rajesh	2017	Isolation and screening of Mycorrhizal species on growth and development of Tomato
9	Dr.G.Usharani	S.Saravanakumar	2017	Bio ethanol production from Cashew Apple ( <i>Anacardium occidentale L.</i> ) by using yeast ( <i>Saccharomyces cerevisiae</i> )
10	Dr.J.Divakaran	R.Honest raja	2018	Development of technology for the microbial management and utilization of coir pith waste
11	Dr.R. Elango	R. Monisha	2018	Studies on the bioconversion, recycling and value addition of coir pith wastes.
12	Dr.R. Parthasarathi	A. Prithivraj	2018	Development of biosurfactant based nano emulsion from herbal medicinal oils

13	Dr. K. Muthuselvam	K. Tamilselvan	2018	Development of biosurfactant based nano emulsion from selected vegetable oils
14	Dr.D.Kanchana	S.Ranjith	2018	Studies on spoilage and pathogenic bacteria in beef ( Red meet) and their control
15	Dr.P.Sivasakthivelan	A.Arunachalam	2018	Studies on the development of alternate low-cost carrier-based formulation of <i>Rhizobium</i> Bioinoculant
16	Dr.B.Karthikeyan	Syed nyamath	2018	Studies on the effects of antimicrobial of lemon grass ( <i>Cymbopogon citrati</i> ).
17	Dr. S. Mahalakshmi	J.Jaipriyanka	2018	Studies on the effect of PGPR on growth and Andrographolide content of <i>Andrographis paniculata</i>
18	Dr.S.Dinakar	K. Sabaridasan	2018	Efficacy of different Formulations of <i>Bradyrhizobium</i> and <i>Paenibacillus</i> on the enhancement of growth and yield Parameters in Groundnut ( <i>ArachishypogaeaL.</i> )
19	Dr.D.Reetha	A. Mariyappan	2018	Isolation and screening of proteolytic bacteria and optimizing cultural conditions for protease production.
20	Dr.S.Bharathiraja	M.Ranjitha	2018	Studies on the influence of AM Fungi and phosphate solubilizing bacteria on crossandra in fly ash amended red soil of cuddalore district
21	Dr. M. Vijayapriya	A.Saravanan	2018	"Studies on the antimicrobial activity of <i>Aloe barbadensis</i> Medicinal plant"
22	Dr.D.Stella	M.Chitra	2018	Studies on the efficacy of lactic acid bacteria in controlling the pathogens of milk and milk products
23	Dr.M.Jayanthi	K.Sahana	2018	An evaluation of Mycorrhizal Symbiosis and Seasonal Dynamics of Mycorrhizae of plant growth and nutrient uptake on Cotton
24	Dr.N.Pandeeswari	S.Santhana Bharathi	2018	Studies on the development of salt tolerant <i>Rhizobium</i> and its

				effect on growth and development of groundnut
25	Dr.G.Usharani	V.Senrayan	2018	Mango wine production by the efficacy of yeast ( <i>Saccharomyces cerevisiae</i> )
26	Dr. K. Muthuselvam	M. Megavannan	2019	Isolation and Biochemical characterization of Agriculturally beneficial bacteria from sewage ecosystem
27	Dr.G.Usharani	B.Mano	2019	Studies on the effect of Liquid PGPR on the growth and yield of Bhendi( <i>Abelmoschus esculents</i> L.)Var.Arka anamika.
28	Dr.N.Pandeeswari	N.Kavinilavu	2019	Studies on the enhancement of nodulation in soybean using effective strain of Bradyrhizobium
29	Dr.J.Sriman Narayanan	G.Parimalam	2019	Bio conversion of pressmud and its effect on growth and yield of green super rice (GSR-8)
30	Dr. K. Sivakumar	D.Ananda kumar	2019	Studies of the co-inoculation effect of Arbuscular mycorrhiza and Phosphate solublizing bacteria on the growth and yield of brinjal( <i>Solanum melongena</i> L.).
31	Dr.P.Sivasakthivelan	C.Vignesh	2019	Studies on the efficacy of lactic acid bacteria isolated from the mangrove ecosystem and its antibacterial activity against certain food borne bacterial pathogen
31	Dr.B.Karthikeyan	N. Meena	2019	Studies on the effects of PGPR on growth and yield of tomato.
33	Dr. S. Mahalakshmi	. K.Sowmiya	2019	Studies on the effect of PGPR on growth and yield of sunflower [ <i>helianthus annuus</i> l.] var.co1
34	Dr.S.Dinakar	C.Jayapratha	2019	Studies on the bioinoculation of <i>Azotobacter</i> and <i>Paenibacillus</i> on the growth and Tomato ( <i>Lycopersicon esculentum</i> L.)

35	Dr.V. Muralikrishnan	S. Kalaiyaran	2019	Bio composting of Organic wastes
36	Dr.V. Muralikrishnan	S. Abinaya	2019	Effect of various formulations of <i>Bacillus thuringiensis</i> var <i>israelensis</i> and <i>Bacillus sphaericus</i> on the control of mosquito larvae
37	Dr.D.Reetha	Davidson	2019	Bioethanol production from cassava peels
38	Dr.S.Bharathiraja	P.Vaishnavi	2019	Studies on the influence of Enriched organic manure on Microbiological and biochemical properties of soil, growth and yield of tomato ( <i>Solanum lycopersicum</i> .L)
39	Dr. M. Vijayapriya	R. Krishnaveni	2019	Co - Inoculation of VAM and PGPR on the growth and yield of Brinjal ( <i>Solanum melongena</i> L.) PLR-2
40	Dr.D.Stella	P.Abinaya	2019	Studies on effect of PGPR on growth and yield of chilli ( <i>Capsicum annum</i> L.) Var. KKM (Ch1)
41	Dr.M.Jayanthi	V.Keerthana	2019	Studies on the Symbiotic effectiveness of <i>Rhizobium</i> strains and phosphate bacteria on the growth and yield of Blackgram
42	Dr. M. Vijayapriya	P. Priya	2020	Effect of Plant growth promoting Rhizobacteria and chemical fertilizer on growth and yield of Tuberose ( <i>polyanthus tuberuse</i> L.)
43	Dr. J.Divakaran	D.Manikandan	2020	Studies on the microbial conversion and utilization of Agro industrial waste.
44	Dr.N.Pandeeswari	C.Pavithra	2020	The effect of halo tolerant <i>Rhizobium</i> inoculation on the yield of groundnut ( <i>Arachis hypogea</i> .L)
45	Dr. K. Muthuselvam	P. Dhevahi	2020	Effect of PGPR enriched vermicompost on growth and development of Chilli
46	Dr.G.Usharani	S.Chitra	2020	Studies on the effect of potassium solubilizing bacteria on the growth and yield of groundnut crop ( <i>Arachis hypogaea</i> L.) var. VRI-6

47	Dr.B.Karthikeyan	M. Dhaarani	2020	Studies on the effect of PGPR on growth and yield of onion ( <i>Allium cepa</i> ).
48	Dr.J.Jayachitra	E. Sridevi	2020	Biosorption of chromium by using microbial and plant derived biomass
49	Dr.S.Dinakar	S. Narayanan	2020	Studies on the development and use of ACC deaminase positive <i>Methylobacterium</i> and <i>Paenibacillus</i> on the enhancement of growth and yield on Tomato ( <i>Lycopersiconesculantum</i> L.)
50	Dr.V. Muralikrishnan	T. Vinotha	2020	Studies on a novel plant growth promoting Mycorrhizal fungus - <i>Piriformospora indica</i> and its compatibility with PGPR
51	Dr.G. Kumaresan	. Rajan I fradlin singh.	2020	Studies on the development of anaerobically digested distillery effluent medium for mass production of <i>Spirulina platensis</i>
52	Dr.D.Stella	S.Chakravarthi	2020	Studies on spoilage and pathogenic bacteria in broiler chicken and their control
53	Dr.R. Elango	Akash k	2021	Studies on the development of liquid formulations of biofertilizer consortium and assessing shelf life of the microbial inoculants
54	Dr.J.Divakaran	R.Vaideeswaran	2021	Development of low cost carrier for the rhizobium bioinoculant production and evaluation of its efficacy in groundnut.
55	Dr. K. Muthuselvam	S. Princy	2021	Effect of PGPR isolates on growth and development of Baby Corn ( <i>Zea mays</i> )
56	Dr.D.Kanchana	A.Aravinth	2021	Studies on the incidence of food pathogens in fresh cut vegetables and their control measures
57	Dr.J.Sriman Narayanan	S.Prakash	2021	Studies on the Co-inoculation effect of phosphobacteria and arbuscular mycorrhizae fungi on the growth and yield of finger millet

58	Dr.K. Sivakumar	N. Sugapriya	2021	Co-inoculation effect of AM fungi and phosphate solubilizing bacteria on the growth and yield of tomato ( <i>Lycopersicon esculantum</i> L.)
59	Dr.M.Jayanthi	B.Merlin	2021	Studies on the efficacy of Bacteriocin producing Lactic acid bacteria from fermented Cassava against certain FoodBorne pathogens.
60	Dr.G.Usharani	S.Gomathi	2021	Development of consortium based chitinolytic bioformulation and its evaluation as a potential biocontrol agent against selected fungal diseases of groundnut ( <i>Arachis hypogaea</i> L.)
61	Dr.N.Pandeeswari	N.Kiruthiga	2021	Microbial production of amylase enzyme by <i>Bacillus</i> sp using cassava waste as a substrate
62	Dr.P.Sivasakthivelan	A.Nismal aswin	2022	Exploring the Plant Growth Promoting potential of endophytic bacterial isolates from apoplastic fluid of Rice.
63	Dr.B.Karthikeyan	V. Gokula priyan	2022	Studies on the effect of microbial co – composting of Agricultural wastes and Medicinal plant waste on the growth and yield of bhendi.
64	Dr.D.Kanchana	P.Venkatesan	2022	Microbial spoilage of pickles and their preservation techniques
65	Dr.J.Jayachitra	S.Meenatchi	2022	Studies on different methods of purification of Bacteriocin and its potential use as a bioperservative against certain food borne pathogens.
66	Dr.V. Muralikrishnan	T. Rathika	2022	Function of Lactic Acid Bacteria in Idli rice batter fermentation
	Dr.G. Kumaresan	B.Muthamilarasi	2022	Studies on the liquid formulations of different bio-inoculants on the growth and yield of Groundnut ( <i>Arachis hypogaea</i> )

67	Dr.S.Bharathiraja	P.Kanimuki	2022	Studies on the yield and quality enhancement of marigold ( <i>Tagetes erecta</i> .L) by bacteria and <i>Glomus fasciculatum</i>
68	Dr. M. Vijayapriya	A.Surabalan.	2022	Synergistic effect of SSB & Azospirillum on growth and yield of rice (Var) <i>Oryza sativa</i>
69	Dr. M. Vijayapriya	G. Madhumitha	2022	Effect of plant growth promoting Rhizobacteria and inorganic fertilizer on growth and yield of chilli ( <i>Capsicum annum</i> L.) var.co-1.
70	Dr.D.Reetha	K. Sharan	2022	Isolation and characterization of <i>Candida tropicalis</i> from mixed fruit wastes for bioethanol production
71	Dr.J.Jayachitra	M.Suriya	2022	Development of fungal consortium for the degradation of textile dye
72	Dr.P.Sivasakthivelan	S.Yuvarajan	2022	Studies on the beneficial effect of seaweed extract on the growth and yield of Rice.
73	Dr.R. Parthasarathi	S.Harini	2022	Evaluation of Mosquitocidal activity of surfactin and its influence of abiotic factors on larvicidal and pupicidal efficacy
74	Dr.R. Elango	Sharmila	2022	Studies on the Bio conversion and value addition of coir pith wastes
75	Dr.G.Usharani	Asmisha A.J.	2022	Studies on the efficacy of potassium releasing bacteria on the growth and yield of maize ( <i>Zea mays</i> L.)

#### 6.4.7 Feedback of stakeholders (Students, Farmers, Companies, Parents, etc.)

An effective Mentor – Mentee system is functioning at Department level to get feedback from the students regarding curricular and co-curricular activities. The course teachers are getting feedback regularly in the prescribed format from each student regarding lecture delivery, hands on training *etc.* at the end of the semester. The feedback obtained is discussed in the Department staff meeting for necessary improvement in curricula, hands-on training and research faculties. In addition, feedback from nearby farming communities is regularly obtained by field visits.

Based on the feedback received from the students the following measures have been taken:

**1. Extension of lab timings:** The timings for the lab hours have been fixed from 06.30 am to 08.30 pm.

**2. Conduct of webinars/ spl. Lectures:** Based on their request Periodical webinars have been organized for the Scholars to update their knowledge in the domain area of research.

During the Extension activities, the staff in-charge are getting direct feedback from the farmers by conducting meeting in the villages. Parents are regularly informed about the progress of the students by the Mentor and in turn the feedback is also received from them. Company persons are regularly visiting us for discussing the progress of sponsored Projects and in turn explain about the status of agro industries and farmers problems

Department alumni coordinator periodically contacts the distinguished alumni and updates the curriculum then and there.



6.4.8 **Students intake and attrition in the programme for the last five years**

Name of the programme	Actual students admitted in the last five years					Attrition (%)				
	2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
M.Sc. (Ag.) Microbiology	15	15	15	8	14	0	0	0	0	0

**Performance of PG students in Competitive examinations**

Academic Year	Name of the Student	
	Ph.D. in ICAR institutes & State SAUs	NET/ARS Qualified
2017-18	1. A.Arunachalam 2. Syednymath 3. Ranjith S 4. Monisha R	1. Syednymath 2. Monisha R
2018-19	1. K. Sowmiya 2. P. Davidson Rokins 3. P. Godson Rokins 4. N. Meena	1. P. Davidson Rokins 2. P. Godson Rokins
2019-20	1. Rajan L Fradlin Singh	-
2020-21	2. S. Gomathi 3. K. Akash 4. R. Vaideeswaran	-

**Employment Percentage of PG students**

Academic Year	Number of students graduated	Employed in					Total	Percent employed	Ph.D. Admission
		Central	State	Bank	Private	Entrepreneur			
2017-18	15	-	1	-	4	3	8	72	4
2018-19	15	-	-	-	4	3	7	63	4
2019-20	15	-	-	-	4	5	9	64	1

## Employment Details of PG students

Academic Year	Name of students	Name of the agency	Designation
2017-18	1. Gokulakannan N	Government of Tamilnadu	Agriculture officer
	2. R. Praveen kumar	Agro science laboratories	Microbiologist
	3. V. Keerthana	Arvee biotech	Quality control officer
	4. M. Megavannan	Arvee biotech	Production Manager
	5. B. Mano	Agro science laboratories	Microbiologist
2018-19	1. S. Chakaravarthi	Sri Vijayalakshmi fertilizers and chemicals	Production Manager
	2. N. Sugapriya	Don Bosco College of Agriculture	Assistant Professor
	3. S. Naraynan	Agro science laboratories	Marketing and sales
	4. D. Manikandan	Arvee biotech	Microbiologist
2019-20	1. A. Aravind	ECO bugs	Research Associate
	2. S. Prakash	Arvee biotech	Quality control officer
	3. B. Merlin	Sri Vijayalakshmi fertilizers and chemicals	Microbiologist
	4. S. Princy	Arvee biotech	Marketing and sales

### 6.4.9 ICT application in curricular delivery

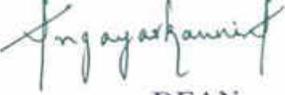
ICT tools are used for handling both theory and practical classes. Staff members are in a habit of handling classes in OHP and Power point Presentation. Audio visual aids are used for delivering the lectures. Students were also trained in ICT applications through their assignment presentation for each course and also for their credit seminar. Moreover, they have been trained to access online library, e - journals and open access web resources pertaining to their studies.

PPTs are designed and updated regularly to teach the syllabus content in a way to make the student understand better. A web browsing enclave linked computers have access to the UGC inflibnet portal "SodhSindhu" and "Sodhganga" for literature surveys. Also, some of the lab houses separate broadband connection and Wi-Fi facility to cater to the needs of the students. Number of computers for Staff & student use is 12 and 8 are with networking facility.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

- 6.4.11. Since the accreditation of Programmes is related to the All-India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.
- 6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **A. ANGAYARKANNI** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and Degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with date and seal



# Annammalai University

Accredited With 'A+' Grade by NAAC

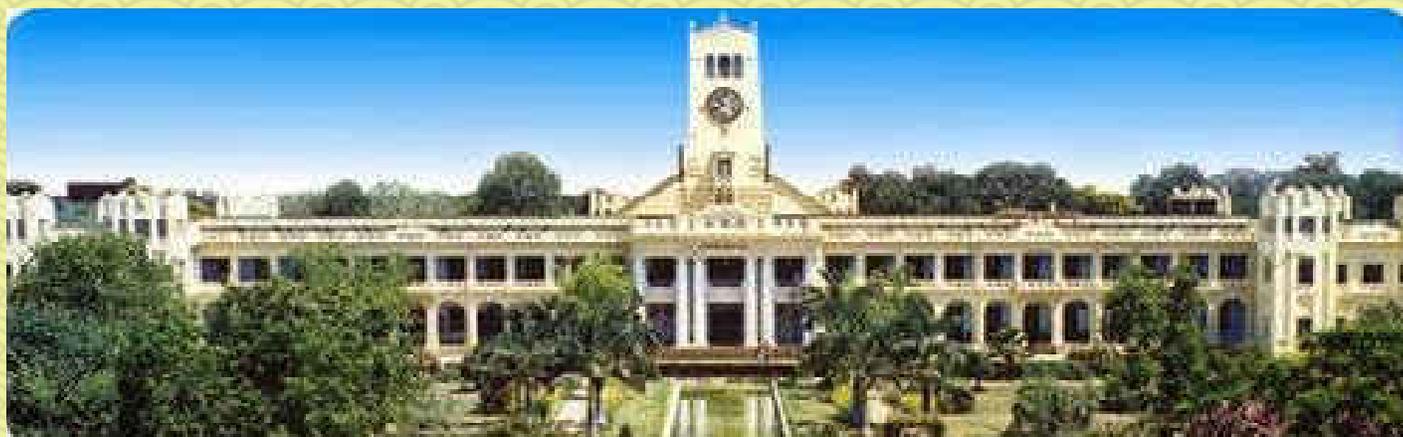
## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Entomology

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



# M.Sc. (Ag.) Entomology

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**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)

**FACULTY OF AGRICULTURE**



# Department of Entomology

## Self study Report

*for the Programme*

**M.Sc. (Ag.) Entomology**



ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

#### 6.4. Self Study Report for the Programme

Name of the programme: **M.Sc. (Ag.) Entomology**

Offered by: **Department of Entomology**

##### 6.4.1 Brief History of the Programme

The Division of Entomology came into existence primarily to cater the instructional needs of B.Sc. (Ag.) degree programme in the year 1958. Even before attaining Department status, the Division offered post graduate programme in Plant Protection. During 1984, the Division got elevated as Department and then offered M.Sc. (Ag.) Entomology programme.

Historical Itinerary	Year of Commencement/Period
Division of Entomology	1958
Ph.D. Programme in Entomology	1971
Post graduate Programme in Plant Protection	1972 -1984
Department Status	1984
Post graduate Programme in Entomology	1984 Onwards

Currently the M.Sc.(Ag.) Entomology programme is offered with 70 credits distributed in four semesters. Periodical revision of curricula is being done and the latest was carried out in the year 2022 as per the recommendations of the **Fifth Deans' Committee and BSMA Committee reports** and this revision is followed from the academic year 2022 -2023.

##### Distribution Pattern of Courses and Credit (For Research Programme)

Semester	Major Courses	Minor Courses	Common Courses	Supporting Courses	Seminar	Research	Credit Load
I	8	-	2	6	-	2	18
II	12	-	2	-	-	6	20
III	-	6	1	-	1	10	18
IV	-	2	-	-	-	12	14
Credit Load	<b>20</b>	<b>8</b>	<b>5</b>	<b>6</b>	<b>1</b>	<b>30</b>	<b>70</b>

##### Distribution Pattern of Courses and Credit (For IDEA Programme)

Semester	Major Courses	Minor Courses	Common Courses	Supporting Courses	Seminar	IDEA	Credit Load
I	8	-	2	6	-	-	16
II	12	-	2	-	-	-	14
III	-	6	1	-	1	10	18
IV	-	2	-	-	-	10 +10	22
Credit Load	<b>20</b>	<b>8</b>	<b>5</b>	<b>6</b>	<b>1</b>	<b>30</b>	<b>70</b>

### Distribution Pattern of Courses and Credit

S.No.	Course Code	Course Title	Credit
<b>Compulsory Major Courses</b>			
1	ENT 501	Insect Morphology and Taxonomy	3 (2+1)
2	ENT 502	Insect Anatomy and Physiology	3 (2+1)
3	ENT 503	Toxicology of Insecticides	3 (2+1)
4	ENT 504	Pests of Field, Horticultural and Plantation Crops	3 (2+1)
<b>Optional Major Courses</b>			
5	ENT 505	Insect Ecology	2 (2+0)
6	ENT 506	Biological Control of Insect Pests and Weeds	2 (1+1)
7	ENT 507	Host Plant Resistance	2 (1+1)
8	ENT 508	Concepts of Integrated Pest Management	2 (2+0)
9	ENT 509	PostHarvest Entomology	2 (1+1)
10	ENT 510	Lac Culture	2 (2+0)
11	ENT 511	Molecular Approaches in Entomology	2 (1+1)
12	ENT 512	Plant Quarantine, Biosafety and Biosecurity	2 (2+0)
13	ENT 513	Edible and Therapeutic Insects	2 (1+1)
14	ENT 514	Medical and Veterinary Entomology	2 (1+1)
15	ENT 515	Forest Entomology	2 (2+0)
<b>Minor Courses</b>			
16	ENT 516	Insect Vectors of Plant Pathogens	2 (1+1)
17	ENT 517	Principles of Acarology	2 (1+1)
18	ENT 518	Vertebrate Pest Management	2 (1+1)
19	ENT 519	Techniques in Plant Protection	3 (1+2)
20	ENT 520	Apiculture	3 (1+2)
21	ENT 521	Sericulture	3 (1+2)
<b>Common Courses</b>			
22	STA 501	Statistical Methods for Applied Sciences	3(2+1)
23	COM 501	Information Technology in Agriculture	3(2+1)
<b>Supporting Courses</b>			
22	PGS 501	Library and Information Services	1 (0+1)
23	PGS 502	Technical Writing and Communications Skills	1 (0+1)
24	PGS 503	Intellectual Property and its Management in Agriculture	1 (1+0)
25	PGS 504	Basic Concepts in Laboratory Techniques	1 (0+1)
26	PGS 505	Agricultural Research, Research Ethics and Rural Development Programmes	1 (1+0)
27	<b>Non Gradual Courses</b>		
	NGC 511	Disaster Management (Contact hour: 1)	-
	NGC 512	Constitution of India (Contact hour: 1)	-
28	VAC	<b>Value added course</b>	-
29	ENT 591	<b>Master's Seminar</b>	1 (0+1)
30	ENT596/597/598/599	<b>Research / IDEA</b>	30

**For the senior batch,** programme is offered with 55 credits distributed in four semesters as per the recommendations of ICAR, which includes 20 credits for major courses, 09 credits for minor courses, 05 credits for supporting courses, 01 credit for seminar and 20 credits for thesis research. In addition, 06 contact hours for non-credit compulsory courses is also included to improve the research acumen, skill and employability of the students to meet the local and global needs.

## Vision

- To achieve the status of “Centre for Excellence” in academics & research and to enter the global arena by attracting international youth for post graduate, doctoral and post doctoral research
- To create an advanced centre for “Extension Entomology” to cater to the needs of coastal and delta agriculture with sustainable pest management techniques and to impart hands-on trainings to farmers and technocrats especially in pest management, coastal Sericulture and Apiculture

## Goals

- Imparting quality education with instructional capacity and inculcating technical expertise with a wide range of learning experiences and produce knowledge centric talented entomologists. Ensuring effective research by perseverance, motivation and resilience
- Developing sustainable crop protection techniques through intensive and extensive research by considering effective integration of cultural, ethnic, social and economic issues to address formidable challenges
- Structuring training programmes to popularize viable crop protection technologies at all levels and feasible commercial Entomology among resource poor farmers to enhance their income

## Objectives

- To impart student centric advanced education in relation to changing scenario in the field of Entomology
- To inculcate instructional capacity, problem-solving skills and entrepreneurship among students
- To guide graduates and post graduates in identifying professional and research career opportunities
- To undertake research on need based and location specific problems in pest management by adopting case-study, survey, correlation observation, quasi-experiment and full-fledged field experiments
- To offer hands on trainings in integrated pest management, apiculture and sericulture techniques to the farmers and extension workers
- To extend technical expertise and assistance to pesticide establishments in testing newer insecticidal compounds and resistance monitoring

### Strategic plan to achieve Vision and Goal

Goals	Objectives	Implementation plan	Performance Metrics/ Timeline	Outcomes
<p>Imparting quality education with instructional capacity and inculcating technical expertise with a wide range of learning experiences and produce knowledge centric talented Entomologist.</p> <p>Ensure effective research by perseverance, motivation and resilience.</p>	To impart student centric advanced education in relation to changing scenario in the field of Entomology.	Periodical upgradation of course content as per the ICAR guidelines and by getting inputs from stake holders.	Once in three years	<ul style="list-style-type: none"> <li>• The periodically updated curriculum adds up to the domain knowledge of the students</li> <li>• Two international students (Fiji and Sudan) completed PG programme during 2013 and 2016 respectively</li> <li>• Higher number of students opted for PG, Ph.D. in our Department and to other Institutes because of sound knowledge &amp; interest infused by the Faculty</li> <li>• Increased ratio of absorption of our students in private sectors</li> <li>• Higher number of students clearing competitive/ entrance examinations and flourishing in various institutes</li> <li>• Considerable number of</li> </ul>
	To inculcate instructional capacity, problem-solving skills and entrepreneurship among students.	Definitive implementation of class seminars & credit seminars on latest topics to impart presentation and interactive ability among students.	Every semester	
		Our class room teaching starts with group discussions rather than simple lecture.		
		Making available standard Indian and Foreign text books and e- journals in the Department library, Giving assignments to the students on advanced frontier areas.		
Involving the students in organizing workshops and farmers' demonstrations				

Goals	Objectives	Implementation plan	Performance Metrics/ Timeline	Outcomes
	To guide post-graduates in identifying professional and research career opportunities	Organising periodical guest lecturers and on campus interviews for knowledge enlighten and prospective placements	Every semester	students emerged as Entrepreneurs <ul style="list-style-type: none"> <li>For the past five years 31 UG students joined PG program in Entomology at various institutes including ICAR institutes because of the coaching classes conducted by the Department</li> </ul>
		Coaching classes are conducted to prepare the students for competitive/entrance examinations		
		To impart hands on training on various techniques and instrumentation		
			Initiation of 'Annamalai Entomology Students Club'	Every month
Developing sustainable crop protection techniques through intensive and extensive research by considering effective integration of cultural, ethnic, social and economic issues to address formidable challenges	To undertake research on need based and location specific problems in pest management by adopting case-study, survey, correlation observation, quasi-experiment and full-fledged field	Motivating PG students to take part in conducting trials in farmers' field so as to understand the ground reality.	Every semester	<ul style="list-style-type: none"> <li>PG students and also the Faculty members conduct on-farm research to recommend remedies for practical problems.</li> <li>With abundant fellowships available to students and scholars, the Department attracts best talents among students to do research. This serves the mandate of attracting young minds into research</li> </ul>
		Publishing the research findings in reputed journals for the benefit of young entomologists.		
		Encouraging the students to present their research findings in national and international seminars/conferences.		
		Proposing extramural funded projects through Government agencies like DST, DBT, UGC, ICAR		

Goals	Objectives	Implementation plan	Performance Metrics/ Timeline	Outcomes
	experiments.	Faculty is encouraged to present their research findings and innovative ideas in "In-house science forum" - The Entomology Society for Innovations		<ul style="list-style-type: none"> <li>Few workshops / conferences/symposia (International &amp; National) were conducted for the benefit of researchers and students</li> </ul>
Structuring training programmes to popularize viable crop protection technologies at all levels and feasible commercial Entomology among resource poor farmers to enhance their income	To offer hands on training in integrated pest management, apiculture and sericulture techniques to the farmers and extension workers.	Imparting hands on trainings on integrated pest management, mass production technology of bio control agents, Sericulture, apiculture, production of botanical formulations etc.	Every year	<ul style="list-style-type: none"> <li>The delta and coastal farmers and extension functionaries are well trained in pest management.</li> <li>For the benefit of Cauvery delta the farmers, a training programme on "Updating of crop pest management tactics in changing pest scenario" was organized.</li> </ul>
	To extend technical expertise to pesticide establishments in testing newer insecticidal compounds and resistance monitoring	Obtaining consultancy projects from pesticide establishments	Often	<ul style="list-style-type: none"> <li>With copious grants amounting to approximately 800 lakhs, the infrastructure facilities have been greatly enhanced besides extending fellowship to PG students and Ph.D. scholars.</li> </ul>

### 6.4.2 Faculty Strength

Presently the Department's teaching, research and extension mandates are well taken care of with nineteen staff members who specialize in Commercial Entomology, IPM, Host Plant Resistance, Parasitoid Taxonomy, Biological control, Phyto-insecticides, Storage Entomology, Acarology and Toxicology.

Sl. No.	Posts	Sanctioned	Filled (as on July 2022)	Vacant Position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	2	2	0	0
2	Associate Professor*	6	6	0	1
3	Assistant Professor*	11	11	0	2
	<b>Total</b>	<b>19</b>	<b>19</b>	<b>0</b>	<b>3</b>

\*Assigned responsibilities for multiple programmes

### Faculty deputed from other Departments to handle Common, supporting and Non-Gradual courses

Sl. No.	Posts	Sanctioned	Faculty in Place (as on July 2022)	Vacant Position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	1	1 (Statistics)	0	-
2	Associate Professor	-	-	0	-
3	Assistant Professor*	4	4 (English, Computer Science, Library & Information Science & Political science)	0	-
	<b>Total</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>-</b>

\*Assigned responsibilities for multiple programmes

### Accomplishments

With the exuberant fore-vision of several dedicated entomologists, notably Dr.N.P.Kalyanam (Trained in USA under co-operation technical mission programme), Dr.M.Balasubramanian (awarded Fulbright fellowship of USA to pursue Ph.D. programme in Rutgers University; who also published a maiden article on Nematology in Nature (London) during the year 1962), Dr.M.Thirugnanam (Ph.D. in Rutgers University, New Jersey, USA), Dr.K.Natarajan, Dr.S.Chelliah (Post doctoral research at

**IRRI**), Dr.P.Baskaran (Ph.D. in **IARI, Fulbright fellow for Post – doctoral research at University of California, USA**) and Dr.P.Narayanasamy, the Department has grown from its infancy to the present position. Dr.Rm.Nachiappan, Dr.R.Veeravel, Dr.Y.Hariprasad, Dr.V.Selvanarayanan and Dr.S.Manickavasagam (**Ph.D. in IARI and Commonwealth fellow**) nurtured the Department with dedication and now the Department is under the stewardship of Dr.S.Arivudainambi, whose focussed ideas make the Department flourishing in all spheres.

Apart from the privilege of winning many accolades, the faculty also made several professional visits to various countries and attended many seminars, conferences and workshops to equip themselves to meet the current challenges in Entomology. They are also actively involved in professional development activities by publishing research papers and becoming members in various professional bodies. **The majority of the Staff in the Department qualified in the National Eligibility Test (NET) of ICAR.**

The Department's research calibre can accurately be judged by its **International and National collaborations**. Our collaborators include USDA-ARS, IRRI, FAO, ICAR, NBAIR, DRR, NCIPM, IINRG, Fly ash Mission, Technology Information & Assessment Council (TIFAC), DBT, DST, SERB, UGC, TNSCST, VCRC, Ministry of Coal, Ministry of Environment, Neyveli Lignite Corporation, Tamil Nadu State Department of Agriculture, Tamil Nadu State Pollution Control Board, National Sericulture Board, Aligarh Muslim University, Zoological Survey of India, Department of Forests, Pesticide Industries, NGOs etc.

Further the research environs of the Department got boosted up by **UGC-Non SAP& FIST sponsorships**. A digitized version of Indian Mymaridae, Chalcididae and Aphelinidae, made by the Department has been hosted in the ICAR -NBAIR website. **South Asia's first season long training in rice IPM organized by the Department in collaboration with FAO and Government of India was the point of the highest glory in the Department's extension arena.** The Department is supporting International and National research scholars and faculty by doing Identification services especially in the field of parasitic Hymenoptera. **The Department is a recognized centre under ICAR – NBAIR sponsored Net work project on Insect biosystematics (NPIB) from 2015-16 and also as one of the volunteer centres under ICAR sponsored AICRP on Rice through DRR, Hyderabad.**

Currently, the Department focuses on the thematic areas such as biological control, parasitoid and Lepidopteran taxonomy, host plant resistance, phyto-insecticides characterization and formulation, sericulture and apiculture.

The Department has a unique **Insect Museum**. The collection includes all insect orders known from India including the rare orders such as Diplura, Protura, Archaeognatha, Plecoptera, Embioptera, Phasmatodea, Megaloptera, Strepsiptera, Mecoptera and Trichoptera. There are around **50,000 insect specimens** preserved in the museum. The immature stages of insects are also exhibited as dry or liquid preservations.

The alumni adored and adoring various important positions such as International Agricultural Consultant for World Bank, Director of Research-TNAU, Director, Research

and Development, Rhom & Hauss (USA), Principal Scientists in IARI, ICAR and NBAIR, Faculty in SAUs and as Head -Honchos of Agrochemical Industries.

Category	Total	Last five year period (2017-2022)
Number of Publications - Journal articles	692	276
Number of Publications - Seminars/Conferences/Workshops/Symposia	575	260
Number of Books & Book chapters	235	95
Number of Projects obtained	203	141
Grant mobilization (Lakh rupees)	1122.09	890.08
Number of Ph.Ds produced	33	17
Number of PGs produced	372	106
Number of Seminars/Conferences/Workshops/Symposia/Trainings Organized	52	34
Number of Seminars/Conferences/Workshops/Symposia/Trainings Attended	577	291
Number of Awards received by the Faculty	195	45
Number of Professional visits abroad by the Faculty	27	8

### Salient Research Achievements of the Department

Research Area	Achievements	
Insecticide formulation	Flyash was developed as Pesticide and found to be suitable for carrier in synthetic and herbal insecticide formulations	
Myco-insecticide	South Asia's First Report	Fungal pathogen, <i>Pandora (Erynia) delphacis</i> Humber on BPH & GLH, <i>Zoophthora radicans</i> (Brefeld) on rice leaf folder.
	India's First Report	<i>Scopulariopsis</i> sp. from rice field
	Asia's First Report	<i>Pandora delphacis</i> Myco-insecticide 70% WP Development of artificial media for <i>Zoophthora radicans</i>
Parasitoid Taxonomy	Species described	66 new species of parasitoids have been described.
	Asia's First Report	<i>Cheiloneurus nigricornis</i> (Encyrtidae) was recorded as a hyperparasitoid of Dryinid

Research Area	Achievements	
	India's First Report	<ul style="list-style-type: none"> <li>Family Mymaromatidae</li> <li>8 genera of Mymaridae</li> <li>1 genus of Encyrtidae</li> <li>15 parasitoid species</li> <li>Polyembryonyin insect parasitoid {<i>Copidosomafloridanum</i> Ashmead (Encyrtidae: Chalcidoidea) with 1893 adult parasitoids emerging from single larva of <i>Helicoverpaarmigera</i> (Hubner)}.</li> </ul>
		<ul style="list-style-type: none"> <li>Department has Reference collection of 15 families of Parasitoids and Type collections (Holotypes/Paratypes) of 66 specimens from the section Parasitic Hymenoptera</li> <li>Checklist of Indian Mymaridae&amp;Aphelinidaehosted in ICAR, NBAIR website</li> </ul>
Host plant resistance		<ul style="list-style-type: none"> <li>Insect tolerant Tomato - Varushanadu Local backcrossed with PKM 1 for Fruit borer</li> <li>Insect Resistant sesame (IVTS 2001-7) for webworm</li> </ul>
Phyto-insecticide		<ul style="list-style-type: none"> <li>Isolated and characterized Insecticidal principle Lactone glycoside from <i>Cleistanthus</i></li> <li>Reported the insecticidal activity of <i>Rhizophora apiculata</i>and<i>Solanumviarum</i></li> <li>Herbal coils prepared using <i>Lucas aspera</i> against adult mosquitoes</li> <li>Deduced the mode of action of Lactone glycoside &amp;solasodine</li> <li>Insecticidal activity of Red algal seaweed (<i>Liagoraceranoides</i>)</li> </ul>
Traditional pest management		<ul style="list-style-type: none"> <li>Documentation of 500 tribal pest control practices of TamilNadu</li> <li>Discovered tribal rat trap</li> </ul>
Storage Entomology		Development of a bio-fumigant tablet against stored pests
Lepidoptera Taxonomy		49 genera and 64 species of Lepidoptera were recorded
Myrmecology	India's First Report	EFN species on 62 plants
	Tamil Nadu's First Report	<i>Amblyopone</i> sp. and <i>Pachycondylahenryias</i> plant hosts of <i>Oecophyllasmaragdina</i> & <i>Solenopsisgeminata</i>



### Credentials of the Faculty

S.No.	Name & Designation	Total Service (Years as on 2022)	Field of Specialization	Total number of Students Guided		*Total number of Publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journal articles	*Others
1.	Dr.V.Selvanarayanan, Professor	29	Host Plant Resistance	22	10	178	8	20
2.	Dr.S.Manickavasagam, Professor (Retired on June 30, 2022)	29	Parasitoid Taxonomy	31	13	200	42	7
3.	Dr.S.Arivudainambi, Professor and Head & Director, IQAC	28	Phyto-insecticides& Insecticide Toxicology	23	13	147	34	19
4.	Dr.T.Selvamuthukumaran, Associate Professor& Deputy Director, IQAC	21	Phyto-insecticides	12	1	71	17	29
5.	Dr.C. Kathirvelu, Associate Professor	20	Storage Entomology	11	1	169	34	49
6.	Caption Dr.R. Kanagarajan, Associate Professor&Director, Security and Patrolling & warden	19	Parasitoid Taxonomy	11	3	83	19	17
7.	Dr.R. Ayyasamy, Associate Professor	17	Insecticide Toxicology	8	1	76	16	18
8.	Dr.R.Kannan, Associate Professor	21	Phyto-insecticides	13	1	109	24	39
9.	Dr.V.Sathyaseelan, Associate Professor	17	Acarology	9	Nil	32	10	17

S.No.	Name & Designation	Total Service (Years as on 2022)	Field of Specialization	Total number of Students Guided		*Total number of Publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journal articles	*Others
10.	Dr.B.Anandaganesaraja, Assistant Professor	20	Biological control	12	1	38	6	42
11.	Mrs.S.Pushpalatha, Assistant Professor	20	Apiculture	Nil	Nil	25	8	10
12.	Dr.Chand Asaf, Assistant Professor	18	Host Plant Resistance	9	1	128	24	50
13.	Dr.A.M.A. Amala Hyacinth, Assistant Professor	18	Apiculture	1	Nil	10	3	3
14.	Dr.M.Ramanan, Assistant Professor	18	Phyto-insecticides	3	Nil	19	8	7
15.	Dr.N. Muthukumaran, Assistant Professor	17	Host Plant Resistance	10	1	106	26	34
16.	Dr.T.Rani, Assistant Professor	16	IPM	4	1	9	2	2
17.	Dr.M.Senthilkumar, Assistant Professor	15	Myco-insecticides	6	Nil	57	30	10
18.	Dr.T.Nalini, Assistant Professor	15	Myrmecology	8	1	55	19	22
19.	Dr.M.Pazhanisamy, Assistant Professor	15	IPM	6	1	72	40	17
20.	Mr.A.Sivaraman, Assistant Professor	14	Host Plant Resistance	Nil	Nil	Nil	Nil	Nil

\*Includes books, book chapters, conference proceedings, abstracts, invited papers, lead papers, popular articles & radio talk

### Awards/Recognitions/Abroad Visits of the Faculty

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
Dr.V.Selvanarayanan, Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Research Paper Award</b>, 2006 - Annamalai University</li> <li>• <b>Best Teacher Award</b>, 2010 - Annamalai University</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Fellow of Plant Protection Association of India since 2010</li> <li>• Active member of the Group on Plant Resistance to Pests, Kansas, U.S.A. since 2012</li> </ul>	<ul style="list-style-type: none"> <li>• <b>China</b>, 2004 - Chinese Academy of Agricultural Sciences, International Plant Protection Congress.</li> <li>• <b>United States of America</b>, 2005 - Professional interaction and exposure visits, Huntington College, Fulton - Marshall, Coop. Farm Bureau, Rochester, Dept.of Entomology, Manchester College, North Manchester, University of Valparaiso, Indiana,Purdue University, West Lefayette,U.S.A.</li> <li>• <b>Belgium</b>, 2005- University of Ghent</li> <li>• <b>London</b>, 2005- Royal Botanical Gardens</li> <li>• <b>Kent</b>, 2005- Natural Resources Institute, University of Greenwich</li> </ul>
Dr.S.Manickavasagam, Professor ( <b>Retired on June 30, 2022</b> )	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Researcher Award</b>-2008-09 by Annamalai University</li> <li>• <b>SrilochaniVaradarajaluEndowmentIncentive Award</b>- 2008-09for international publication with impact factorby Annamalai University</li> <li>• <b>Professor T N Ananthakrishnan Award - 2014</b> for contribution in the field of Parasitoid Taxonomy and Biological Control</li> <li>• <b>Best Researcher award - 2017-18</b> by Annamalai University</li> <li>• <b>Rao Sahib Dr. T. V. Ramakrishna Ayyar memorial award 2021</b> for contribution in the field "Taxonomy</li> </ul>	<ul style="list-style-type: none"> <li>• Chinese Academy of Agricultural Sciences, Beijing, <b>China</b> from Nov.2003 to January 2004.</li> <li>• Visited the Dept. of Plant Protection of University Putra <b>Malaysia</b>, and Insect Systematics and Biocontrol lab of National University of Malaysia, Kuala Lumpur in January 2004.</li> <li>• Visited the Entomology laboratory of National University of <b>Singapore</b> and Genome Institute of Singapore during February 2004.</li> <li>• Visited Natural History Museum,</li> </ul>

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
	<p>of Parasitic Hymenoptera”</p> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Visiting Scientist, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing, Republic of China, Nov.2003 to January, 2004</li> <li>• Common Wealth Academic Staff Fellowship, 2007-2008 at Natural History Museum, London</li> <li>• Commonwealth Academic Staff Fellowship-2007 from 3<sup>rd</sup> Sep.2007 to 2<sup>nd</sup> March 2008 (At Natural History Museum, London, UK)</li> <li>• Fellow of the Royal Entomological Society (<b>FRES</b>) UK - since 2008</li> <li>• Fellow of The Entomological society of India (<b>FESI</b>) – since 2009</li> <li>• Fellow of the Plant Protection of Association of India (<b>FPPAI</b>) since 2010</li> <li>• Chair Person, Twenty Second Annual Congress, 2010 University of Peradeniya, Sri Lanka</li> <li>• Best Poster Award at National Conference held at Arunachal Pradesh, 2014</li> </ul>	<p><b>London, UK</b> as a Commonwealth Fellow for six months from Sep. 2007 to March 2008.</p> <ul style="list-style-type: none"> <li>• Visited Erice (Sicily) <b>Italy</b> to attend X European workshop on Insect parasitoids, Sep.17 – 21, 2007.</li> <li>• Visited University of Minnesota, <b>USA</b> to attend First International Entomophagous Insects Conference, July 27 – 31, 2009.</li> <li>• Visited Post Graduate Institute of Agriculture, University of Peradeniya, Kandy, <b>Sri Lanka</b>, to chair a technical session at Twenty Second Annual Congress, 25-26, November 2011.</li> <li>• Visited Canadian Natural Collections at Ottawa (28<sup>th</sup> to 31<sup>st</sup> May 2013: Attended third International Entomophagous Insects Conference, Quebec, <b>Canada</b> (2-6, June 2013): Visited University of Calgary, Insect Ecology lab, 10-30<sup>th</sup> June 2013).</li> <li>• Attended 5<sup>th</sup> International Entomophagous insects Conference held at Kyoto, <b>Japan</b>, 16-20 October 2017</li> </ul>
Dr.S.Arivudainambi, Professor and Head	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>SrilochaniVaradarajalu Endowment Incentive Award</b> (publication), 2010 by Annamalai University.</li> <li>• <b>Best Faculty Award</b>, 2014 by EET CRS Academic Brilliance rating Agency, New Delhi.</li> <li>• <b>Best Researcher Award</b> (grants), 2018 by Annamalai University</li> </ul>	<ul style="list-style-type: none"> <li>• Poland, 2006 - COMPAS meeting, Agricultural University, Krakow, Department of Agriculture, Lejask</li> <li>• Switzerland, 2006 - IUED Conference, Centre for Development Studies, Geneva</li> <li>• Nepal, 2018- DBT, BIRAC - meeting</li> </ul>

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
	<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Expert member, 2006 -2010 -ETC- COMPAS (Partners- Bolivia, Guatemala, Nicaragua, Peru, Colombia and Chile; Ghana, South Africa, Zimbabwe, Tanzania, Uganda, Togo, Benin; India, Sri Lanka, Netherlands and Switzerland).</li> </ul>	
Dr.T.Selvamuthukumar, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Researcher Award</b> (grants), 2021 by Annamalai University</li> </ul>	<ul style="list-style-type: none"> <li>• Hungary, 2018 - Annual meeting &amp; Chemical Ecology conference</li> </ul>
Dr. C. Kathirvelu, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Young Scientist Award</b> 2018- In-recognition of service to the field of Entomology by The Society of Tropical Agriculture, New Delhi</li> <li>• <b>Outstanding Entomologist Award</b> 2019 -In appreciation to the contribution to the field of Entomology by Madhumitha Foundation, Telangana State</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best group teacher - 2004 - 2005&amp; 2005-2006 RAWE, competition conducted by Department of Agricultural Extension, Annamalai University.</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka, 2011- International Conference at PGIA, Peradiniya, Lanka, 2011, November 17 &amp; 18</li> </ul>
Dr.R. Kanagarajan, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Young scientist award</b>, The society of Tropical Agriculture 29<sup>th</sup> June 2018</li> <li>• <b>Excellence in Research Award</b>, Science&amp; Tech. Society for integrated rural improvement 24<sup>th</sup> February 2019</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Associate NCC Officer Award, 2014 &amp; 2015</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka, 2015 - International Conference June 10 -15</li> </ul>

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
	<ul style="list-style-type: none"> <li>• Best presentation (III Prize) in Refresher course in "organic pest control" held at Dept of Entomology Annamalai university during Jan 21st to Feb, 10th 2008</li> <li>• Best oral presentation award - Contemporary approaches in biological science for food, health, nutrition security and conservation of biodiversity 26 and 28 Jan 2021</li> </ul>	
Dr.R. Ayyasamy, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Outstanding Scientist Award</b>, The Society of Tropical Agriculture, New Delhi, 28/Jun/2019</li> <li>• <b>Scientist Award</b>, B.Vasantharaj David Foundation, Chennai, 17Nov. 2019</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Research Paper, 2011 - National Seminar, Sun Agro Biotech Research Centre, Chennai</li> <li>• Best Oral Presentation, 2012 in the National Symposium, IIHR, Bangalore</li> <li>• Treasurer, Entomological Society of America, U.S.A. (International Branch) - Since 2016</li> <li>• Best Poster Presentation, 2018 - Indian Institute of Natural Resins and Gums, Ranchi</li> </ul>	<ul style="list-style-type: none"> <li>• Bhutan -19-21/ Aug/2008 -To attend 2<sup>nd</sup> International beekeeping congress</li> <li>• Thailand -5-9/Mar/2011-To attend Global Conference on Entomology</li> <li>• U.S.A.-5-8/Nov/2017-To attend 65<sup>th</sup> Annual meeting of Entomological Society of America</li> </ul>
Dr.R.Kannan, Associate Professor	<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best paper in the symposium -In <i>National Symposium on role of Biochemistry and Biotechnology in twenty first century</i>, March, 13-14, 1999, Bangalore</li> <li>• I Prize – Poster Presentation-In: National Seminar on “Advances In Plant Science Research” (Apsr-2019). Held in Department of Botany,</li> </ul>	

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
	<p>Annamalai University, February 27 &amp; 28, 2019</p> <ul style="list-style-type: none"> <li>• Best Poster Award - II Position for Poster Presentation in the Session - IPM1) -In: XIX International Plant Protection Congress (IPPC 2019) on “Crop Protection to Outsmart Climate Change for Food Security &amp; Environmental Conservation” held in Hyderabad, Telengana, November 10 and 14, 2019</li> </ul>	
<p>Dr.V.Sathyaseelan, Associate Professor</p>	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Gold medal</b> on World 2000 Millennium Summit organized by International Association of educators for world peace (IAEWP)- Eight International Environment Congress- New Delhi</li> <li>• <b>Young Scientist award</b>, 2006 by National Environmental Society and Academy</li> <li>• <b>Gold Medal &amp; Junior Scientist Award</b> for the year 2006</li> <li>• <b>Distinguished Scientist Award</b> – 2018 received from Science &amp; Tech Society for Integrated Rural Improvement, Warangal, Telenganaa</li> <li>• <b>Outstanding Entomologist Award</b> -2019 received from United Lightning Vision Association, Bengaluru, Karnataka</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Poster Presentation Award – 2018, national conference on Doubling farmers income for sustainable and Harmonious Agriculture - IINRG, IAB, ICAR RCER , Ranchi, Jharkhand.</li> </ul>	<ul style="list-style-type: none"> <li>• First International Conference on Food,Agriculture&amp; Innovations June 19th-23rd, Bangkok, Thailand</li> </ul>

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
Dr.Chand Asaf, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Scientist Award</b> -Murray State University, Kentucky, USA &amp;Centre for Environment and Agricultural Development, Pondicherry. 2020</li> <li>• <b>Best Researcher Award</b> - United Lightning Vision Association - 2019</li> <li>• <b>Scientist of the year Award</b>, Astha Foundation. 2019</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best group teacher, 2008 by Faculty of Agriculture Best presentation award, Centre of Advanced Studies in Marine Biology and GOI, ICSSR &amp; DBT, New Delhi. 2019</li> <li>• Best poster presentation, ULV Association@ ICFAI, Thailand. 2019</li> <li>• Best oral presentation award - AIASA - Tamil Nadu and Faculty of Agriculture, Annamalai University. 2019</li> <li>• Keynote Speaker Award - Green Agri Professional Society, Dubai, United Arab Emirates. 2020</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Thailand</b> - ULV Association@ ICFAI<i>International Conference</i>”, Bangkok-Pattaya,Thailand, 19-23 Jun 2019</li> <li>• <b>Dubai</b> -<i>International conference on Food, Health, Agriculture innovations</i>”, Dubai, UAE, 5-9 Mar 2020</li> </ul>
Dr.N. Muthukumar, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Sri Lochanivaradarajulu endowment prize</b> 2018 – Annamalai University</li> <li>• <b>Young scientist award</b> -2018-7<sup>th</sup> International conference on Agriculture, Horticulture and Plant science held at Shimla</li> <li>• <b>Excellence in Research Award</b> – 2019 -National conference on Farmers orientation towards climate change and up gradation to sustainable</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka, 2015 - Attend 2<sup>nd</sup> Annual international conference on Agriculture and Forestry (Sustainable agriculture and global food security) June, 10-12.</li> </ul>

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
	<p>agriculture held at National college Trichy</p> <ul style="list-style-type: none"> <li>• <b>Best young teacher award</b> - 2019- 6<sup>th</sup> Biopesticide international conference, BIOCICON 2019 Organised by Amity University</li> <li>• <b>Agricultural Scientist Award</b> - 2021- Significant contribution to Agricultural Entomology with focus on Insect Plant Interactions</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best oral presentation award - 2020 -International conference on Recent trends in Agriculture towards food security and rural livelihood</li> <li>• Best Oral Presentation Award - 2022 -National Seminar on Revitalizing soil health through natural resource management in a climate change Era</li> </ul>	
Dr.M.Senthilkumar, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Outstanding Achievement Award</b>-in the field of Insect mycology from Asthafoundation,Meerut ,2019</li> </ul>	
Dr.T.Nalini, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Women Young Scientist Award</b> in Entomology - 2019 PEARL Foundation for Educational Excellence</li> <li>• <b>Scientist Award</b>- 2020 in appreciation of contributions to Agricultural Entomology and Higher Education - 2020 Dr. B. Vasantharaj David Foundation</li> <li>• <b>Best Researcher Award</b> -2021 Research Grants Generated Through Sponsored Research Projects during 1 Jan - 31 Dec from Annamalai University</li> </ul>	

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
	<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Certificate of Completion of module on Impact Factor and bibliometric indicators - 2018 Researcheracademy.com , Elsevier</li> <li>• Fellow of Society for Biocontrol Advancement - 2019 Society for Biocontrol Advancement</li> <li>• Certificate of appreciation in recognition of significant contribution as peer reviewer - 2019 Biodiversitas, Journal of Biological Diversity</li> <li>• Elsevier Advisory Panel - 2019 ELSEVIER   Research Networks</li> <li>• Chairperson in International conference on Current Immunological tools for biodiversity and status of environmental health - 2019 CAS, GOI, ICSSR, DBT</li> <li>• Certificate of excellence in reviewing - 2020 Asian Journal of Research in Crop Science</li> <li>• Peer reviewer - 2020 Indian Journal of Experimental Biology</li> <li>• Top reviewers on publons (manuscripts reviewed in last 12 months)- 2020 Indian Journal of Experimental Biology</li> <li>• Peer reviewer expert- 2021 Planta (Springer)</li> <li>• Editor-In-Chief-International Journal of Agriculture Science (VITP-IJAGS) (from 19.10.2021)</li> <li>• Editor-In-Chief -International Journal of Agricultural Biotechnology (VITP-IJAB) (from 19.10.2021)</li> <li>• Editorial Member- International journal of</li> </ul>	

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
	<p>Vegetable Science (VITP-IJVSC) (from 19.10.2021)</p> <ul style="list-style-type: none"> <li>• Editorial Member- International Journal of Plant Biology (VITP-IJPB) (from 19.10.2021)</li> <li>• Editorial Member- International Journal of Agricultural Development and Policy (VITP-IJADP) (from 19.10.2021)</li> <li>• Certificate of excellence in reviewing - 2021 from Asian journal of agricultural and horticultural research</li> <li>• Certificate of excellence in peer-reviewing - 2021 from Uttar Pradesh journal of zoology</li> <li>• Certificate of excellence in reviewing - 2021 from South Asian Journal of Parasitology</li> <li>• Reviewer Excellence Award- in Agricultural Science Digest- Agricultural Research Communication Center (ARCC) journals (29.11.2021)</li> <li>• Certificate of appreciation for Reviewer in International Journal of Agricultural sciences 20.2.2021</li> <li>• Certificate of excellence in reviewing - 2021 from International journal of plant and soil science</li> <li>• Certificate of excellence in peer-reviewing from Journal of Basic and Applied Research International - 28.5 .2021</li> <li>• Reviewer in Agricultural Research Communication Center (ARCC) journals (19.5. 2021)</li> </ul>	

Name of the Faculty	Awards/Recognitions/ Accomplishments	Abroad visits & purpose
Dr. M. Pazhanisamy, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Distinguished Scientist Award</b> – 2018 received from Science &amp; Tech Society for Integrated Rural Improvement, Warangal, Telenganaa</li> <li>• <b>Young scientist Award</b> – 2019 received from united lightning Vision Association, Karnataka</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Oral Presentation Award – 2018 received from national conference on Doubling farmers income for sustainable and Harmonious Agriculture organised by IINRG, IIAB, ICAR RCER, Ranchi, Jharkhand.</li> <li>• Best Oral Presentation Award-2022 received from national conference on Revitalizing Soil Health Through <i>Natural Resource Management in a climate change era</i> (RSHNRMC,21) organized by Department of Soil science Agricultural Chemistry, Faculty of Agriculture, Annamalai University.</li> <li>• Best Oral Presentation Award-2022 received from national conference on <i>Transforming Agricultural Extension Systems towards Achieving Food and Nutritional Security</i> organised by Department of Agricultural Extensions, Faculty of Agriculture, Annamalai University.</li> </ul>	<ul style="list-style-type: none"> <li>• Bangkok, Thailand -Paper presentation, June 19th-23rd, 2019</li> </ul>

### **Collaborations with other Institute**

1. MoU with Indian Council of Agricultural Research, New Delhi and Annamalai University as Principal Investigator of ICAR Network project on Insect Biosystematics w.e.f. 14<sup>th</sup> December 2015.
2. MoA with Forest Department, Govt. of Tamil Nadu, and Annamalai University for a collaborative project on Insect Faunal inventory in Social Forestry in Tamil Nadu w.e.f. 1<sup>st</sup> Feb. 2016.
3. MoU with IINRG, Ranchi for Seri-lac culture model for income augmentation.w.e.f.2011.
4. Voluntary Centre for All India Coordinatored Rice improvement Project (AICRIP) -ICAR , IIRR, Rajendranagar, Hyderabad, Telanganaw.e.f. July 2022.
5. MoU with EcobugsPvt. Ltd., Tanjore for the Production of Biopesticides and Biocontrol agentsw.e.f. July 2022.

### **Membership in Various Societies/ Professional bodies**

1. Centre for Environment and Agricultural Development (CEAD)
2. Green Agri Professional Society (GAPS), Dhanbad, Jharkhand
3. United Lightning Vision Association, Bangalore
4. Society for Plant Protection and Environment, Bhubaneswar, Odisha
5. Science & Tech Society for Integrated Rural Improvement
6. Entomology Academy of India
7. Madhumitha Foundation, Suryapet, Telangana
8. Society of Plant Protection Sciences India, New Delhi.
9. Pesticide Research Society India, New Delhi.
10. Insect Study and Conservation Network, Bangalore
11. Plant Protection Association of India, Hyderabad
12. Society of Pesticide Science, New Delhi
13. Royal Entomological Society, UK
14. The Entomological Society of India, New Delhi
15. Society for Biocontrol Advancement, Bangalore
16. Madras Agricultural Students' Union, Tamil Nadu Agricultural University, Coimbatore
17. Zoo Outreach Organization, Coimbatore
18. Association for Advancement of Pest Management in Horticultural Ecosystems

**List of Projects (2017-2022)**

S.No.	Name of the Principal Investigator	Title of Project	Name of the Co Principal Investigator(s)	Year of commencement of the Project	Year of completion of the Project	Sponsoring Agency	Outlay (In lakh rupees)
1.	Dr.C.Kathirvelu	Evaluation of NNI-1501 on BPH / WBPH in Rice	Dr.B.Anandaganesa Raja	2017	2018	Hyderabad Chemical Private Ltd., Hyderabad.	3.00
2.	Dr.C.Kathirvelu	Bioefficacy, phytotoxicity and effect on natural enemies of PIPL 1140 on Maize against Army worm/ Corn worm	Dr.R. Kanagarajan	2019	2020	Parijat Industries (India) Pvt. Ltd., New Delhi.	3.00
3.	Dr.C.Kathirvelu	Evaluation of NNI-1701 13.3% SC (NNI 1501 + Thiamethoxam (10+3.3%) on BPH/ WBPH, GLH, Leaf Folder in Rice	Dr.R.Kannan	2018	2020	Nichino India Private Ltd., Hyderabad.	3.00
4.	Dr.C.Kathirvelu	Evaluation of GOD-1003 13.5% SC against major insect pests and mites of Chilli, Tomato, Okra and Brinjal and its phytotoxicity.	Dr.M.Pazhanisamy	2018	2020	Godrej Agrovet Ltd., Mumbai.	6.00
5.	Dr.C.Kathirvelu	Evaluation of NNI-1702 30% WG [NNI-1501 10% + Pymetrozine 20 % WG] to control BPH / WBPH in Rice	-	2019	2020	Nichino India Private Ltd., Hyderabad.	3.00
6.	Dr.C.Kathirvelu	Evaluation of bioefficacy of coded product CCP-5537 SC against Chilli Thrips and Cercospora leaf spot.	Dr.R.Ayyasamy	2019	2020	Crystal Crop Protection Ltd., New Delhi	3.00

7.	Dr.C.Kathirvelu	Evaluation of GOD - 1003 13.5% SC against insect pests and mites of Chilli, Tomato, Okra and Brinjal and its phytotoxicity studies	Dr.M.Pazhanisamy	2019	2021	Godrej Agrovvet Ltd., Mumbai.	6.00
8.	Dr.C.Kathirvelu	Bio-efficacy evaluation of NNI-1702 30% WG [NNI-1501 10% + Pymetrozine 20 % WG] to control BPH / WBPH/ GLH in Rice.	Dr.R.Ayyasamy	2020	2022	Nichino India Private Ltd., Hyderabad.	3.00
9.	Dr.C.Kathirvelu	Bio-efficacy and compatibility of PIPL100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crops on various growth parameters	Dr. S. Venkatesan & Dr. K. Suseendran	2022	2024	Parijat Industries (India)Pvt. Ltd., New Delhi.	5.25
10.	Dr.C.Kathirvelu	Bio-efficacy evaluation of NII 2002 against lepidopteran pests on maize	Dr. B. Ananda Ganesa Raja & Mr. S.R. Vinodkumar	2022	2024	Nichino India Private Limited, Hyderabad.	4.00
11.	Dr.C.Kathirvelu	Climate Resilience on Butterfly Diversity of Selected Coastal Districts of Tamil Nadu	R.Kannan &D. Dhanasekaran	2022	2024	<i>RashtriyaUchchatar Shiksha Abhiyan (RUSA), MHRD, New Delhi.</i>	10.13
12.	Dr.M.Ramanan	Evaluation of coded insecticide (18.5 Sc & 0.4% ) for the control of pest in various crops	Dr.M.Tirupathi	2018	2021	Natco Pharma Limited Hyderabad	7.0
13.	Dr.M.Ramanan	Evaluation of coded insecticide MIC001I (20 SG) for the control of pests in rice and okra	Dr.M.Tirupathi	2018	2021	Ross LifesciencePvt.Ltd, Pune: 411026	4.0
14.	Dr.M.Ramanan	Evaluation of efficacy of Stanomyte on mites in bhendi	Dr.T.Selvamuthukumar	2018	2021	T.stanes and company limited	3.38

15.	Dr.M.Ramanan	Evaluation of coded insecticide AC02 (10.26%) for the control of pests in Grapes and Cabbage	Dr.A.Sivaraman	2019	2022	Natco Pharma Limited Hyderabad	2.70
16.	Dr.M.Ramanan	Evaluation of Cyantrainiliprole 10.26% OD for its efficacy,Phytotoxicity& effect on natural enemies on chilli pests	Dr.N.Muthukumaran	2022	2024	Natco Pharma Limited Hyderabad	3.0
17.	Dr.N.Muthukumaran	Bio efficacy and Phytotoxicity of Clothianidin 0.5 % GR against White grub, Termite and Early shoot borer in Sugarcane	-	2022	2025	Sumitomo chemical India Pvt. Ltd. New Delhi	8.20
18.	Dr.N.Muthukumaran	Evaluation of Bio efficacy and Phytotoxicity of Clothianidin 47.8 % FS against White grub and other sucking pests in Groundnut	-	2022	2024	Sumitomo chemical India Pvt. Ltd. New Delhi	6.50
19.	Dr.N.Muthukumaran	Evaluation of Bio efficacy and Phytotoxicity of Clothianidin 0.5% GR against Stemborer, Leafroller, GLH and BPH in Transplanted Rice	-	2022	2024	Sumitomo chemical India Pvt. Ltd. New Delhi	5.00
20.	Dr.N.Muthukumaran	Evaluation of Profenofos 50% + Fenprothrin 5% EC against Pink bollworm and other insect pests in Cotton	-	2020	2022	Sumitomo chemical India Pvt. Ltd. New Delhi	4.60
21.	Dr.N.Muthukumaran	Evaluation of bio efficacy of Clothianidin 50 WDG against Brown Plant Hopper in Rice	-	2020	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	1.75
22.	Dr.N.Muthukumaran	Evaluation of bio efficacy of Clothianidin 50 WDG against sucking pests in Cotton	-	2020	2020	Sumitomo chemical India Pvt. Ltd. New Delhi	1.80

23.	Dr.N.Muthukumaran	Bio efficacy and Phyto-toxicity of Pyridalyl 10% EC against Fall army worm <i>Spodoptera frugiperda</i> in Maize	-	2019	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	1.75
24.	Dr.N.Muthukumaran	Bio efficacy and Phytotoxicity evaluation of S-1587 (34% SC) against insect pests in Rice	-	2019	2022	Sumitomo chemical India Pvt. Ltd. New Delhi	3.00
25.	Dr.N.Muthukumaran	Bio efficacy and Phytotoxicity evaluation of Profenofos 50% + Fenprothrin 5% EC against Pink bollworm and other insect pests in Cotton	-	2019	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	4.60
26.	Dr.N.Muthukumaran	Bio efficacy studies of Etoxazole 6% + Abamectin 1.5% SC against Red spider mite and other mites in Tea	-	2019	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	7.20
27.	Dr.N.Muthukumaran	Bio efficacy studies of Etoxazole 6% + Abamectin 1.5% SC against Red spider mite and other mites in Brinjal	-	2019	2020	Sumitomo chemical India Pvt. Ltd. New Delhi	4.40
28.	Dr.N.Muthukumaran	Bio efficacy studies of DIPEL against loopers and caterpillars in tea	-	2018	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	7.02
29.	Dr.R.Ayyasamy	Bioefficacy of some coded insecticides against pests of cotton and paddy and diseases of bottle gourd and grapes	Dr.R.Kannan Dr.A.Muthukumar	2014	2017	Sulphur Mills Pvt Ltd. Mumbai	10.80
30.	Dr.R.Ayyasamy	Bioefficacy of coded insecticide TK1001 against pests of tomato, brinjal and cabbage	Dr.R.Kannan	2014	2017	Crystal crop protection Pvt Ltd., Delhi	3.00

31.	Dr.R.Ayyasamy	Evaluation of coded acaricide GW001 against brinjal red spider mite, and coded and acaricide insecticide GW 002 against pests of tomato	-	2015	2017	Gowan AgroPvt.LtdGurgoan	2.00
32.	Dr.R.Ayyasamy	Evaluation of ACTARA 25 WG on pests of grapes as foliar and soil application, EMA/LUF 45 WG on pests of 28engal28s and EMAMECTIN 5 WG on pests of red gram and 28engal gram	Dr.M.Pazhanisamy	2015	2018	Syngenta India Pvt Ltd.,Pune	8.15
33.	Dr.R.Ayyasamy	Evaluation of coded insecticide CP 402 G against sugarcane white grub and termite	-	2015	2018	Crystal Crop Protection Ltd, Delhi	4.00
34.	Dr.R.Ayyasamy	Evaluation of Benfuracarb 3G against root knot nematodes of brinjal	Dr.R.Kannan	2017	2018	Coromandel International, Secunderabad	1.50
35.	Dr.R.Ayyasamy	Evaluation of CCP 4620 WDG against mites chilli	-	2017	2019	Crystal crop protection Ltd., Delhi	2.50
36.	Dr.R.Ayyasamy	Evaluation of Abametin 1.9 EC against red spider mite and leaf miner in tomato	-	2017	2019	Crystal crop protection Ltd., Delhi	2.00
37.	Dr.R.Ayyasamy	Evaluation of CCP 4620 against mites of tea	-	2017	2020	Crystal crop protection Ltd., Delhi	6.00
38.	Dr.R.Ayyasamy	Evaluation of coded insecticide INIG 003 against pests of paddy, cotton and chilli	-	2017	2020	Gowan India Pvt. Ltd Gurgaon	6.48
39.	Dr.R.Ayyasamy	Evaluation of Clothianidin 50 WDG against pest of paddy and grapes and Flonicamid 50 WG against pests of paddy and cotton	-	2017	2020	Crystal crop protection Ltd., Delhi	5.50

40.	Dr.R.Ayyasamy	Evaluation of APEX®50 against pests of cotton and brinjal; CHLORANTRANILIPROLE 18.5% SC against pests of paddy and brinjal; and SPIROTETRAMET 15.31% OD against pests of chilli	-	2018	2020	Crystal crop protection Ltd., Delhi	13.50
41.	Dr.R.Ayyasamy	Evaluation of coded insecticides CCP 40150 and CCP 50150 against pests of paddy	-	2018	2020	Crystal Crop Protection Ltd., Delhi	6.00
42.	Dr.R.Ayyasamy	Evaluation of Emamectin benzoate 1.9 EC against fall armyworm in maize	Dr.B.Anada Ganesa Raja	2018	2020	Crystal crop protection Ltd., Delhi	3.00
43.	Dr.R.Ayyasamy	Evaluation of Benfuracarb 3G against root knot nematodes of brinjal		2019	2021	Coromandel International, Secunderabad	1.50
44.	Dr.R.Ayyasamy	Evaluation of Chlorantraniliprole 18.5 SC against shoot and fruit borer of brinjal and leaf folder and stem borer of paddy	Dr.N.Muthukumaran	2019	2021	Agro Allied Ventures Pvt Ltd, Haryana	3.00
45.	Dr.R.Ayyasamy	Evaluation of coded insecticide CCP 003 against pests of sugarcane	Dr.R.Kannan Dr.P.K. Karthikeyan DrK.Sivakumar	2019	2021	Crystal crop protection Ltd., Delhi	3.00
46.	Dr.R.Ayyasamy	Evaluation of coded insecticide CCP 003 and CCP-0415 against pests of various crops	Dr.R.Kannan Dr.P.K. Karthikeyan DrK.Sivakumar	2019	2022	Crystal crop protection Ltd., Delhi	12.00

47.	Dr.R.Ayyasamy	Evaluation of Insecticides chlorantraniliprole 9.3% + lambda cyhalorthrin 4.6% ZC against pests of pomegranate and emamectin benzoate 5% + lufenuron 40% WG against pests of brinjal	Dr.C.Kathirvelu	2019	2022	Syngenta India Ltd., Pune	5.00
48.	Dr.R.Ayyasamy	Evaluation of emamectin benzoate 3% + indoxocarb 12% SC against pest complex and yield of chilli	Dr.N.Muthukumaran	2020	2021	Bioscience Research Foundation, Kanchipuram	3.50
49.	Dr.R.Ayyasamy	Evaluation of Mincenoxtra (cyanraniliprole + lufenuron) 400 SC against pests of tea	Dr.B.Ananda Ganesa Raja	2021	2023	Syngenta India Ltd., Pune	5.00
50.	Dr.R.Ayyasamy	Evaluation of fenazaquin 200 SC against mites of bhendi, tomato and chilli	Dr.C.Kathirvelu	2021	2023	Gowan India Pvt Ltd, Gurugram	10.50
51.	Dr.R.Ayyasamy	Evaluation of fenazaquin 10 EC + bifenthrin 4 EC against whitefly and mites of cotton.	Dr.Chand Asaf	2021	2023	Gowan India Pvt Ltd, Gurugram	3.50
52.	Dr.R.Ayyasamy	Evaluation of CL - 1136 against sucking pests of cotton	Dr.B.Anada Ganesa Raja	2021	2023	Crystal crop protection Ltd., Delhi	4.00
53.	Dr.R.Ayyasamy	Evaluation of CL - 1813 against sucking pests of cotton and CL 5211 ME against pod borer of redgram	Dr.R.Kannan	2021	2023	Crystal crop protection Ltd., Delhi	8.00
54.	Dr.R.Ayyasamy	Evaluation of CL - 6102 WG against pests of rice and CL 1012 SC against pests of chilli	Dr.R.Kannan	2021	2023	Crystal crop protection Ltd., Delhi	8.00
55.	Dr.R.Ayyasamy	Evaluation of CL - 2082 against pests of brinjal	Dr.R.Kannan	2021	2023	Crystal crop protection Ltd., Delhi	4.00

56.	Dr.R.Kannan	Evaluation of bioefficacy and phytotoxicity testing of profenofos 50% EC on Redgram	-	2015	2017	M/s Nagarjuna Agri. Chemicals Ltd., Hyderabad	3.0
57.	Dr.R.Kannan	Bioefficacy and phytotoxicity trials on Carbofuran 3%CG in Maize and Rice	-	2017	2019	M/s Nagarjuna Agri. Chemicals Industries Ltd., Hyderabad	5.98
58.	Dr.R.Kannan	Bioefficacy, phytotoxicity trials of NAI-243 in Rice and Chilli	-	2018	2020	M/s Nagarjuna Agri. Chemicals Industries Ltd., Hyderabad	5.75
59.	Dr.R.Kannan	Evaluation of Seaweed based biopesticide for rice leaf feeder's management - Technology Development	Dr.C.Kathirvelu and Dr.R.Ayyasamy	2020	In Progress	M/s. Aquagri Processing Pvt. Ltd., New Delhi	10.25
60.	Dr.R.Kannan	Evaluation of Bio-efficacy of Ethiprole 40% + Imidacloprid 40% WG (Code no. BCIL-I-002 (Insecticide) in Rice Crop	Dr.A.M.Amala Hyacinth	2021	In Progress	Baghiratha Chemicals & Industries, Ltd., Hyderabad	1.56
61.	Dr.R. Kanagarajan	Testing of new seed treatment chemicals Sedaxane 2.5% + Fludioxonin 2.5% + Thiamethoxam 26.25% (315.5) FS on Cotton sucking pest and diseases	-	2015	2017	Syngenta India Ltd., Coimbatore	3.5
62.	Dr.R. Kanagarajan	Testing of new insecticide Minecto Forte 480 SC and MinectoXtra 400 SC against Chilli and Rice pest complex	-	2017	2018	Syngenta India Ltd., Coimbatore	4.20
63.	Dr.R. Kanagarajan	Testing of new fungicide Alika 247 ZC against Cluster bean, Citrus and Black gram pest	-	2017	2019	Syngenta India Ltd., Coimbatore	6.0

64.	Dr.R. Kanagarajan	Testing of new insecticide Ampligo 150 SC against Ground nut and Black gram diseases, Minecto Forte 480 SC against Tomato and Brinjal pest	-	2017	2019	Syngenta India Ltd., Coimbatore	8.0
65.	Dr.R. Kanagarajan	Testing of new insecticide EMAM + LUFF 45 WG against Okra, Ber, Red gram and Bengal gram pest	-	2017	2019	Syngenta India Ltd., Coimbatore	8.0
66.	Dr.R. Kanagarajan	Testing of new insecticide Pymetrozime 50 WG against Mango pest and Thiamethoxam 75 SG against Banana pest	-	2017	2019	Syngenta India Ltd., Coimbatore	4.0
67.	Dr.R. Kanagarajan	Testing of new insecticide Spiropidion + Acetamiprid 54 WG against tomato and Cotton and Emamectin + Lufenthuron 45 WG against tomato pests and natural enemies	-	2018	2020	Syngenta India Ltd., Coimbatore	6.0
68.	Dr.R. Kanagarajan	Testing of new SYN 547407 100 DC against eggplant and Cabbage pests	-	2018	2020	Syngenta India Ltd., Coimbatore	4.0
69.	Dr.R. Kanagarajan	Testing of new insecticide SYN 547407 200 SC against rice and SYN 547407 100 DC against cotton and Chilli pests	-	2018	2020	Syngenta India Ltd., Coimbatore	6.0

70.	Dr.R. Kanagarajan	Testing of new insecticide Ampligo 150 ZC against grapes and new fungicide viz, Orondis Flexi 170 SC against cucumber downy mildew and Reflect 250 SC against pomegranate leaf and fruit spot	-	2018	2020	Syngenta India Ltd., Coimbatore	6.0
71.	Dr.R. Kanagarajan	Testing of new insecticide Ampligo 150 ZC, Emamectin + Lufenuron 45 WG and Fortenza Duo 480 FS against com fall army worm and stem borer and Chlorantraniliprole against Rice leaf folder	-	2019	2022	Syngenta India Ltd., Coimbatore	12.0
72.	Dr.R. Kanagarajan	Testing of new insecticide Minecto Forte 480SC against Okra pests, Virtako 150 OD against rice pests, PHOENIX (SYN 547407) 200 SC and MinectoXtra 400 SC (CYNT 200+LUF 200) against com pests, PHOENIX (SYN 547407) 100 DC against ground nut pests	-	2020	2022	Syngenta India Ltd., Coimbatore	10.0
73.	Dr.R. Kanagarajan	Testing of new insecticide Evicent 45 WG against Thrips and capsule borer in Cardamom	-	2021	2024	Syngenta India Ltd	10.0
74.	Dr.R. Kanagarajan	Testing of new insecticide SPID+ ACET 54 WG against Tea Pests	-	2021	2024	Syngenta India Ltd	5.0

75.	Dr.R. Kanagarajan	Testing of new insecticide & fungicide MinectoXtra 400 DC against cardamom pests and Orondis Flexi 170 SC against Black Papper Phytophthora Rot	-	2021	2024	Syngenta India Ltd	15.0
76.	Dr.T. Nalini	Studies on diversity of ant fauna and eco-friendly management of <i>Solenopsisgeminata</i> (Fabricius) (Hymenoptera:Formicidae), a serious threat to livelihood of farmers in three coastal districts of Tamil Nadu	-	2016	2017	UGC General Development Assistance XII th plan, R&D Cell, Annamalai University.	10
77.	Dr.T. Nalini	Eco- friendly pest management of mango and cashew using weaver ant, <i>Oecophyllasmaragdina</i> Fabricius (Hymenoptera: Formicidae) for organic fruit production	Dr.R.Ayyasamy	2022	2024	DRD, RashtriyaUchchatar Shiksha Abhiyan RUSA 2.0, Department of Higher Education, Government of Tamil Nadu.	10.13
78.	Dr.T.Selvamuthukumaran	Evaluation of bio - efficacy, phytotoxicity of Orberon (Spiromesifen 240 G/L SC C) in Rice and its effect on natural enemies	Dr.M. Ramanan	2021	2024	Bayer Crop Science Ltd	5.33
79.	Dr.T.Selvamuthukumaran	Evaluation of bio - efficacy, phytotoxicity of Fipronil 0.6 % GR (Regent Ultra) in Chilli and its effect on natural enemies	Dr.T. Nalini	2021	2024	Bayer Crop Science Ltd	5.33

80.	Dr.T.Selvamuthukumaran	Evaluation of bio-efficacy, phytotoxicity and effect on natural enemies of UPI 0421 against insect pests of Paddy	Dr.T. Nalini	2021	2024	UPL Limited	4.42
81.	Dr.T.Selvamuthukumaran	Evaluation of Bio-efficacy of Monocrofos 36 SL in cotton	Dr.T. Rani	2021	2022	UPL Limited	1.69
82.	Dr.T.Selvamuthukumaran	Evaluation of Bio-efficacy and phytotoxicity of BITCOL-16 against pests of Cotton	Dr.P. Anandan	2021	2024	GSP Crop Science Pvt.Ltd	5.20
83.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of FA-2 against insect pests of Groundnut	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.03
84.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of FA-4 against insect pests of Groundnut	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.03
85.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of FA-2 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.03
86.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of FA-4 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.03
87.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of LG-1 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	3.90
88.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of SIZ-1 against insect pests of Sugarcane	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.55
89.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of LG-1 against Mango hoppers	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.55

90.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of UPI 120 against Sucking pests and bollworms of cotton	Dr.V. Selvanarayanan	2020	2023	UPL Limited	4.55
91.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of GPI 1920 against Sucking pests and bollworms of cotton	Dr.V. Selvanarayanan	2020	2023	UPL Limited	4.55
92.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of GPI 818 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	UPL Limited	4.42
93.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of GPI 2220 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	UPL Limited	4.55
94.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy of Monocrotophos 36%SL against Sucking pests of cotton	Dr.V. Selvanarayanan	2020	2023	UPL Limited	1.69
95.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy of botanical based termiticide	Dr.T. Nalini	2020	2023	Nameix Ltd	0.62
96.	Dr.T.Selvamuthukumaran	Evaluation of PII 8007 20% SC against Fall Armyworm in Maize	Dr.M. Ramanan	2019	2020	PI Industries	3.75
97.	Dr.V.Selvanarayanan	Evaluation of efficacy of solar powered insect light trap in paddy and bhendi crops	Dr.V. Sathya seelan	2016	2018	SAFS Organic Enterprises, Pondicherry	1.20
98.	Dr.V.Selvanarayanan	Bio-efficacy and phyto-toxicity of Fenprothrin 10% EW against stem borer and leaf folder in transplanted rice	Dr.N. Muthu kumaran	2016	2018	Sumitomo Chemicals India Pvt. Ltd, New Delhi	3.38
99.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phyto-toxicity of Clothianidin 50 WDG in groundnut	Dr.N. Muthu kumaran	2016	2018	Sumitomo Chemicals India Pvt. Ltd, New Delhi	3.51

100.	Dr.V.Selvanarayanan	Evaluation of bioefficacy and phyto-toxicity of Tetraniliprole 400 FS on maize and rice	Dr.N. Muthu kumaran	2016	2018	Bayer Crop Science Ltd., Coimbatore	9.30
101.	Dr.V.Selvanarayanan	Evaluation of PIM 014 20% WP against mites on brinjal, chillies and okra	Dr.N. Muthu kumaran	2017	2019	PI Industries, Gurgaon	10.50
102.	Dr.V.Selvanarayanan	Evaluation of ME 5382 2% granules and ME 5382 10% SC against stem borer and brown plant hopper on rice	Dr.T. Selva muthukumaran	2017	2019	Arysta Life Sciences Ltd., Mumbai	7.80
103.	Dr.V.Selvanarayanan	Evaluation of PII 1721 and Ethion in Rice	-	2018	2020	PI Industries, Gurgaon	8.45
104.	Dr.V.Selvanarayanan	Evaluation of bio-efficacy and phytotoxicity of Diflubenzuron 20% + Deltamethrin 2% SC against selected insect pests on brinjal, chilli and tomato	Dr.T. Selvamuthukumaran	2018	2020	Arysta Life Sciences Ltd., Mumbai	10.53
105.	Dr.V.Selvanarayanan	Evaluation of PII 070 and PII 050 in rice	Dr.N.Muthukumaran	2018	2021	PI Industries, Gurgaon	8.71
106.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of FA - 2 against insect pests of sugarcane	Dr.T. Selvamuthukumaran	2020	2023	Sulphur Mills Ltd., Mumbai	4.55
107.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of FA - 4 against insect pests of sugarcane	Dr.T. Selvamuthukumaran	2020	2023	Sulphur Mills Ltd., Mumbai	4.55
108.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of GPI 818 against insect pests of sugarcane	Dr.T. Selvamuthukumaran	2020	2023	UPL Ltd., Mumbai	5.85
109.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of GPI 418 against insect pests of sugarcane	Dr.T. Selvamuthukumaran	2020	2023	UPL Ltd., Mumbai	5.85

110.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of GPI 2220 against sucking pests and bollworms of cotton	Dr.T. Selvamuthukumar	2020	2023	UPL Ltd., Mumbai	4.55
111.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of GPI 820 against insect pests of paddy	Dr.T. Selvamuthukumar	2020	2023	UPL Ltd., Mumbai	4.42
112.	Dr.S.Manickvasagam	Evaluation of Sux, green gold, virista and plant gold on groundnut, rice, Polyanthes and tomato	Dr.S.Arivudainambi	2014	2017	M/s Biotic Life Sciences (India) Pvt., Ltd. Madurai 600-0-437	9.75
113.	Dr.S.Manickvasagam	Evaluation of CMII 141, Profenophos and cyper against insect pests of chillies and rice	Dr.S.Arivudainambi	2015	2018	M/s Coromandel International Ltd., Secunderabad 600-0-478	8.84
114.	Dr.S.Manickvasagam	Study on management of pests and soil borne diseases in forestry/agro-forestry plantations (on & off farm) in Tamil Nadu	-	2016	2017	Department of Forests, Govt. Of Tamil Nadu 365-F-01	2.50
115.	Dr.S.Manickvasagam	Biodiversity of Insects	-	2016	2017	ICAR 345-F-53	2.55467
116.	Dr.S.Manickvasagam	Evaluation of Pymetrozine, CMII 131 & 151 and Phenthoate against insect pests of Rice & Chilly	Dr.S.Arivudainambi	2016	2019	M/s Coromandel International Ltd., Secunderabad. 600-0-510	14.43
117.	Dr.S.Manickvasagam	Bioefficacy and phytotoxicity evaluation of Lufenuron and Pretilachlor against pests of blackgram, pigeonpea, chilli and paddy	Dr.S.Arivudainambi	2017	2020	M/s Mahamaya Life sciences Pvt Ltd., Gurgaon. 600-0-537	11.05

118.	Dr.S.Manickvasagam	Evaluation of Bioefficacy and phytotoxicity and residue trials of COI 302 WG against insect pests of rice	Dr.S.Arivudainambi	2017	2020	M/s Coromandel International Ltd., Secunderabad 600-0-586	3.95850
119.	Dr.S.Manickvasagam	Bioefficacy and phytotoxicity of Benfuracarb3G against insect pests of paddy	Dr.S.Arivudainambi	2018	2019	M/s Coromandel International Ltd., Secunderabad 600-0-590	1.95
120.	Dr.S.Manickvasagam	Bioefficacy, phytotoxicity and residue trials of COI 309 WG on insect pests of Chilly	Dr.S.Arivudainambi	2018	2020	M/s Coromandel International Ltd., Secunderabad 600-0-593	4.55
121.	Dr.S.Manickvasagam	Bioefficacy and phytotoxicity of Nitenpyram against insect pests of cotton and paddy.	Dr.S.Arivudainambi	2018	2021	M/s Coromandel International Ltd., Secunderabad. 600-0-650	8.32
122.	Dr.S.Manickvasagam	Bioefficacy and phytotoxicity of Benfuracarb3G against insect pests of paddy	Dr.S.Arivudainambi	2018	2020	M/s Coromandel International Ltd., Secunderabad 600-0-654	1.95
123.	Dr.S.Arivudainambi	Evaluation of Virtako 2.4DT on rice pests as soil broadcast and sedaxane15% + Azoxystrobin 3.75% + Thiamethoxam 26.25% (450 FS) on rice sucking pests and disease complex as seed treatment	Dr.T. Selvamuthukumar	2015	2017	M/s Syngenta India Ltd.	4.00
124.	Dr.S.Arivudainambi	Evaluation of Voliam Flexi 300SC on sugarcane and Minecto Forte 480SC on cotton pests	Dr.T. Selvamuthukumar	2017	2019	M/s Syngenta India Ltd., Coimbatore	4.20

125.	Dr.S.Arivudainambi	Effect of pymetrozine, virtaka, polo, voliamflexi and syn 546330 against various pests of different crops	Dr.T. Selvamuthukumar Dr.R.Kanagarajan	2017	2021	M/s Syngenta India Ltd.	28.0
126.	Dr.S.Arivudainambi	Chlorantraniliprole and Emamectin on <i>Helicoverpaarmigera</i> in vegetables and Chlorantraniliprole on <i>Leucinodesorbonalis</i> in Eggplant	Dr.T. Selvamuthukumar	2018	2021	M/s Syngenta India Ltd.	12.20
127.	Dr.S.Arivudainambi	Evaluation of Emamectin benzoate against insect pests on various crops	Dr.T. Selvamuthukumar	2019	2022	M/s Coromandel International Ltd., Secunderabad,	30.42
128.	Dr.S.Arivudainambi	Base line studies and resistance monitoring using SYN 547407 100 DC against thrips, <i>Scrtothrips dorsalis</i>	Dr.T. Selvamuthukumar	2019	2023	M/s Syngenta India Ltd. Coimbatore	6.00
129.	Dr.S.Arivudainambi	Effects of Fortenza 600 Fs against Corn Fall Armyworm, Stem Borer and Cutworm	Dr.T. Selvamuthukumar	2019	2022	M/s Syngenta India Ltd. Coimbatore	3.00
130.	Dr.S.Arivudainambi	Evaluation of Fonicamid 50%WG against insect pests on cotton and paddy	Dr.T. Selvamuthukumar	2020	2022	M/s Mahamaya Life sciences Pvt Ltd., Gurgaon,	7.80
131.	Dr.S.Arivudainambi	Bioefficacy and phytotoxicity of Pymetrozine 50% WG on paddy	Dr.T. Selvamuthukumar	2020	2022	M/s Mahamaya Life sciences Pvt Ltd., Gurgaon,	5.20
132.	Dr.S.Arivudainambi	Effect of Neemazol tree injection on pests of mango	-	2020	2022	M/s Coromandel International Ltd., Cuddalore,	5.97895

133.	Dr.S.Arivudainambi	Field efficacy and toxicology data for their product Neem Biostar	-	2020	2021	Sun Bio Naturals (India) Private Ltd., Chennai	2.45
134.	Dr.S.Arivudainambi	Effect of Neemazol tree injection on pests of mango	-	2020	2022	M/s Coromandel International Ltd., Cuddalore,	5.97895
135.	Dr.S.Arivudainambi	Evaluation of Ronfen 1858 SC against insect pests on cotton	-	2021	2024	M/S. Best Crop Science, New Delhi	5.85
136.	Dr.S.Arivudainambi	Bioefficacy, phytotoxicity and residue trials of CIX-5002A on insect pests of Chilly	-	2021	2023	M/s Coromandel International Ltd., Secunderabad,	6.74960
137.	Dr.S.Arivudainambi	Bioefficacy, phytotoxicity and residue trials of COI 309 WG on insect pests of Chilly	-	2021	2023	M/s Coromandel International Ltd., Secunderabad,	6.74960
138.	Dr.S.Arivudainambi	Bioefficacy, phytotoxicity and residue trials of insecticides and funds for infrastructure	-	2021	2023	M/s Coromandel International Ltd., Secunderabad,	5.36900
139.	Dr.S.Arivudainambi	Bioefficacy, phytotoxicity and residue trials with CILI 111 against insect pests on Maize	-	2021	2023	M/s Coromandel International Ltd., Secunderabad,	5.36900
140.	Dr.S.Arivudainambi	Bio efficacy, phytotoxicity and residue data for CILI 103 on Rice	-	2022	2024	M/s Coromandel International Ltd., Secunderabad	4.459
141.	Dr.S.Arivudainambi Dr.T.Selvamuthukumar	Development of Sericulture and Apiculture - a viable remunerative approach for the sustainable livelihood of coastal farmers, rural youth and women	Dr.R.Kanagarajan Dr.S.Thirupathi Dr.T.Kalaiarasan	2021	2024	TANSCHÉ - Research Grant Project (RGP), Chennai	77.00
						<b>Total</b>	<b>890.07727</b>

### 6.4.3 Technical and Supporting staff

Eleven technical and supporting staff members in the Department are helping in academic, research and administrative activities (as on July 2022).

Sl. No.	Sanctioned posts	Staff in place	Designation (number within parentheses)	Responsibility	Administrative Staff Requirement as per ICAR
1	Secretarial staff	1	Special Officer	Establishment & administrative work, purchase & budget, Data maintenance	-
2	Technical staff	3	Semi-Skilled Helper (1), Deputy Garden Superintendent (2)	Issue of chemicals and glassware, maintenance of library, store keeping, Garden maintenance	Lab Assistant (1)
3	Ministerial staff	7	Office Assistant (1), Helper (2), Gardener (4)	Dispatch of letters, circular maintenance, assisting practical classes by arranging specimens, maintenance of laboratories, research field, screen houses, glass house and pot-culture area.	Field Assistant (1) Assistant (1)

### 6.4.4 Classrooms and Laboratories

The Department has well equipped class rooms and laboratories with large collection of economically important insect groups and wide range of instruments to provide hassle free experience in learning and research. **Head room and office are well equipped with basic amenities such as Xeroxing, printing and computer facilities. Two separate laboratories for UG classes (Smart classes), seven staff rooms and a separate store room for chemicals and glassware are available,** in addition to the PG class room and laboratory facilities and the details of which are furnished below.

Facility	Number
Lecture cum Instructional Laboratory	4
Insect Museum	1
Bee Museum	1
Sericulture Museum	1
Domain specific Laboratories	7
Field stations and Field Units	6
Medicinal and pesticidal plants Garden	1
Pot culture yard	8
Screenhouse	4

Department Library	1
Insect culture Room	1
Conference Hall	1
Staff room	9
Head Cabin & Display hall	2
Head office	1

Sl.No.	Facility	Area (Sq. ft.)	Description & Equipment housed
1.	Post-graduate Lecture Hall cum Instructional Laboratory	39' x 25' = 975	Smart class room with a seating capacity of 25 with Television and <b>equipment</b> viz., 1. Binocular zoom stereo microscope - 2 nos. 2. Binocular microscope- 2 nos. 3. Monocular microscope -1no. 4. Simple microscope - 10 nos. 5. Film viewer -1no. 6. Insect Collection Net - 20 nos. 7. Insect Box - 50 nos. 8. Poison bottle- 20 nos. 9. Magnifier -1no. 10. Glassware 11. Chemicals
2.	Ph.D.Lecture Hall cum Instructional Laboratory	29' x 20' = 580	Smart class room with a seating capacity of 15 with Television and <b>equipment</b> viz., 1. Binocular microscope -1no. 2. Compound microscope -1no. 3. Glassware 4. Chemicals 5. Insect collection net - 10 6. Insect collection boxes - 10
3.	Apiculture - Field Station	11' x 16' = 176	To keep the materials for handling apiary. 1. Beekeeping appliances 3 sets 2. Hive - 57 sets
4.	HPR - Field Station	11' x 16' = 176	To keep the materials for handling field work regarding HPR studies. <b>Equipment</b> 1. Compound Microscope 2. Electronic balance

5.	Insect Museum & Parasitoid taxonomy laboratory	32'x27' = 864	<p>An air-conditioned laboratory to carry out taxonomy research with sophisticated imported microscopes and equipment</p> <p><b>Insect Museum</b></p> <p>An air-conditioned Insect Museum with Unique collection of around 50,000 insects representing all insect orders known from India. In addition to adults, immature insects and few models are also placed for the benefit of students. A web data base (EDAU - Annamalai InsectCollection) for the museum is also available.</p> <ol style="list-style-type: none"> <li>1. Insect boxes -210</li> <li>2. Collection nets -23</li> <li>3. Dip nets-9</li> <li>4. Entomological pins</li> <li>5. Setting boards -51</li> <li>6. Pinning blocks-10</li> <li>7. Specimen jars-110</li> <li>8. Show case boxes-48</li> <li>9. Slides</li> </ol> <p><b>Parasitoid taxonomy laboratory</b></p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Television</li> <li>2. Visualizer ELMO</li> <li>3. Leica M205C&amp; DM 750 trinocular stereo zoom with Montage software for capturing 3D image-2 nos.</li> <li>4. Phase contrast trinocular</li> <li>5. Stereo zoom – 8 nos.</li> <li>6. Trinocular stereoscopic zoom microscope with drawing tube Nikon SMZ 1500</li> <li>7. Binocular- Nikon eclipse E400</li> <li>8. Binocular -Novex Holland</li> <li>9. Binocular Zeiss primostar</li> <li>10. Computer</li> </ol>
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6.	Apiculture Laboratory & Bee Museum	32'x27' = 864	<p>An air-conditioned laboratory to carry out apiculture research</p> <p><b>Materials</b></p> <ol style="list-style-type: none"> <li>1. Newton bee hive</li> <li>2. Italian bee hive</li> <li>3. Marthandam hive</li> <li>4. Pot hive</li> <li>5. Wooden box</li> <li>6. PVC model</li> <li>7. Full protective Suite</li> <li>8. Neck type protective veil</li> <li>9. Hall protective veil (Hip sized)</li> <li>10. Drone trap</li> <li>11. Pollen trap</li> <li>12. Smoker</li> <li>13. Extractor</li> <li>14. Queen cage</li> <li>15. Swarm trap</li> <li>16. Queen excluder sheet</li> <li>17. Comb foundation sheet</li> <li>18. Decapping knife</li> <li>19. Gloves</li> <li>20. Hive tool- SS type</li> <li>21. Queen gate</li> <li>22. Raw honey</li> <li>23. Bee wax</li> <li>24. Value addition - Dates, nuts, Ginger, Garlic, Fig, Amla</li> <li>25. Different types of combs</li> </ol>
7.	Plant Tissue Culture Laboratory	7'x15' = 105	<p>An air-conditioned Laboratory</p> <p><b>Equipment</b></p> <p>Tissue culture rack Laminar flow chamber</p>
8.	Insect Culture room	13'x15' = 195	<p>An air-conditioned Culture room with racks and cages for insect culture such as <i>Spodopteralitura</i>, <i>Spodoptera frugiferda</i>, <i>Earias</i>, greater wax moth, <i>Epilachna</i></p> <p>Steel racks - 7 Refrigerator -1 Insect Cages - 10 Glass jars - 30</p>
9.	Phyto-insecticides Laboratory I	33'x 22' = 726	<p><b>Phyto-insecticides Laboratory</b></p> <p>For carrying out extraction, bioassay, deducing mode of action, purification and fractionation works.</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Micro applicator</li> <li>2. Rotary flash vacuum evaporator</li> <li>3. Soxhlet extraction apparatus</li> <li>4. Refrigerated water circulator</li> </ol>

			<ol style="list-style-type: none"> <li>5. Binocular microscope</li> <li>6. Compound microscope</li> <li>7. Microwave oven</li> <li>8. Magnetic stirrer</li> <li>9. Vortex mixer</li> <li>10. Heating mantel</li> <li>11. Cyclomixer</li> <li>12. Mixie</li> <li>13. Plant growth chamber</li> <li>14. Distillation units</li> <li>15. Refrigerator</li> <li>16. Deep freezer</li> <li>17. Column chromatography</li> <li>18. Hot air oven</li> </ol>
10.	HPR Laboratory	20' x 17' = 340	<p>For evaluating mechanisms and factors of resistance in crop varieties against insect pests</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Leaf area meter</li> <li>2. Olfactometer</li> <li>3. Volatile Collection Chamber</li> <li>4. Spectrophotometer</li> <li>5. Mono-ocular microscope with camera</li> </ol>
11.	Phyto-insecticide Laboratory II	27' X 13' = 350	<p>An air-conditioned Laboratory</p> <p>For formulating botanical insecticides</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Spray drier</li> <li>2. Environment test chamber</li> <li>3. Potters tower</li> <li>4. Hot air oven</li> <li>5. Weighing balance</li> <li>6. Magnetic stirrer</li> <li>7. Refrigerator</li> <li>8. Mixie</li> <li>9. pH meter</li> <li>10. Distillation unit</li> <li>11. Digital overhead stirrer</li> </ol>
12.	Toxicology & Sea Weed Laboratory	33' x 22' = 726	<p>To carry out sea weed research and insecticide resistance monitoring</p> <ol style="list-style-type: none"> <li>1. Extraction unit</li> <li>2. Water circulator</li> <li>3. Refrigerator</li> </ol>
13.	Molecular Laboratory	20' x 17' = 340	<p>To conduct basic molecular research</p> <p><b>Instruments</b></p> <ol style="list-style-type: none"> <li>1. Multiple gel casting unit,</li> <li>2. Submarine Electrophoresis,</li> </ol>

			<ol style="list-style-type: none"> <li>3. Vertical slab gel Electrophoresis</li> <li>4. Refrigerator</li> <li>5. SDS PAGE</li> <li>6. Hot air oven</li> <li>7. Muffel furnace</li> <li>8. Centrifuge</li> <li>9. Spectrophotometer</li> <li>10. BOD incubator</li> </ol>
14.	Skill laboratory	19' x 22' = 418	<p>Students are trained with all basic skills related to entomology. Materials and tools needed for skill development in basic entomology studies</p> <p><b>Instruments</b></p> <ol style="list-style-type: none"> <li>1. Simple microscope</li> <li>2. Compound microscope</li> <li>3. Zoom stereo Microscope</li> <li>4. Attachment lens</li> <li>5. Haemocytometer</li> <li>6. Micrometry</li> <li>7. Insect collection nets</li> <li>8. Slides&amp; Cover slip</li> <li>9. Dissection set</li> <li>10. Artificial diet materials</li> <li>11. Rearing containers</li> <li>12. Formulations of Insecticides</li> <li>13. Sprayers</li> <li>14. Traps</li> </ol>
15.	Sericulture Museum Eri and Sericulture Laboratory	19' x 18' = 342	Sericulture Museum contains exhibits related to sericulture. A laboratory for doing research on mulberry silkworm and Eri silkworm with all rearing materials and trays
16.	UG Laboratory I	38' x 30' = 1140	Smart class room with all specimens needed to conduct practical classes. Binocular microscopes, simple microscopes, insect boxes, inset collection nets, specimen jars
17.	UG laboratory II	40' x 32' = 1280	Smart class room with all specimens needed to conduct practical classes. Sprayers, pesticide containers, bee keeping appliances, sericulture materials, lac products, insect collection net, herbarium
18.	Experimental farm - II Mulberry field	7.0 acre	Completely fenced area with Drip irrigation facility with one farm pond and planted with two mulberry varieties
19.	Experimental farm - I Bee Garden	3.5 acres	To provide forage for bees
20.	Experimental Field - I semi field research	41' x 17' = 697	Eight banana varieties are maintained
21.	Experimental Field - II semi field research	100' x 125' = 12500	Completely fenced area with Sprinkler& Drip irrigation facility. Crop cafeteria is maintained

		0.3 acre	and pest life stages are shown to the students. Six different popular mulberry varieties are maintained
22.	Pot-culture yard I	46'x30' =1380	Grow bags and pots to conduct Pot culture studies related to rice & millets Net house for - Rice Leaf folder, BPH, Stem borer
23.	Pot-culture yard II & III	40'x28' =1120	Grow bags and pots to conduct Pot culture studies in pulses, cotton, oil seeds
24.	Pot-culture yard IV - VII	67'x47' =3149	Grow bags and pots to conduct Pot culture studies in Vegetables
25.	Pot-culture yard VIII	70'x25' = 1750	Grow bags and pots to conduct Pot culture studies related to HPR
26.	Sucking pest culturing Unit I & II	58'x38'= 2204	Cages and racks for culturing of sucking pests such as Aphids, Thrips, Mealybugs
27.	Medicinal plant garden	29'x22'= 638	36 species of medicinal and pesticidal plants
28.	Screen house- I	25'x16'= 400	To carry out specific <i>in-situ</i> enclosure studies and Resistance monitoring studies. Farm implements & Fumigation chamber
29.	Screen house- II	20'x10'= =210	To carry out screening studies related to host plant resistance
30.	Screen house- III	25'x20'= 500	To carry out screening studies related to host plant resistance in Rice
31.	Apiary I	30'x80'= 2400	Apiary with 25 hives of Indian bees for instructional purpose
32.	Apiary II	150'x 50'= 7500	Apiary with 25 hives of Indian bees/5 hives of dammer bees for instructional purpose
33.	Silkworm rearing sheds 3 Nos.	65'x18'= 1170 each	Mulberry silkworm rearing sheds to rear silkworm
34.	Conference Hall	20'x18'= 360	A full-fledged air conditioned conference hall with audio-visual aids and a seating capacity of fifty is available for scientific and social deliberations
35.	Department Library	30'x10' = 300	The Department Library is provisioned with 547 text and reference books, 288 PG and 38 Ph.D. theses, more than 20 national and international journals, 102 bound back volumes, Annual Review of Entomology, 75 conference proceedings, 95 project reports and more than 10,000 reprints
36.	Stores	28'x6' = 168	To keep chemicals and glassware
37.	Farm ponds	6 nos	To harvest water

38.	Bio-control agents production Unit	25'x15' = 375	Various biocontrol agents are produced in collaboration with Ecocare Pvt. Ltd. 1. Hot air oven -1no. 2. Laminar flow chamber -1no. 3. Autoclave -1no.
39.	Biocontrol Research laboratory (Flyash building)	20'x13' = 260	Containers to grow various biocontrol agents
40.	Lepidoptera repository and stored product pests Laboratory	10'x10' = 100	Repository - Butterflies and moths of southern India. The butterflies and moths collected from various localities are identified and preserved.  Research on stored pests and culture of <i>Callosobruchus</i> , <i>Corcyra</i> , <i>Tribolium</i>

#### 6.4.5 Conduct of Practical and Hands-on Training

Theory classes are conducted in single batch and during practical classes, the students are divided into four groups and imparted with hands-on training in

1. Running of taxonomic keys
2. Slide Mounting of insects
3. Dissection of insects
4. Museum maintenance
5. Collection and preservation of adults and immature stages
6. Insect Biochemical analysis
7. Mass multiplication of biocontrol agents
8. Rearing of test insects
9. Conducting bioassays
10. Handling of various insecticide formulations
11. Handling of spray equipments
12. Maintenance of spray equipments
13. Animal maintenance for toxicology studies
14. Pest collection
15. Diagnosis of pest infestation
16. Preservation techniques of samples
17. AESA analysis
18. Identification of pests and biocontrol agents
19. Extraction of botanicals
20. Plant Biochemical and biophysical analysis
21. Field assessments
22. Fabrication of traps
23. Gel electrophoresis
24. Bee handling
25. Apiary maintenance
26. Silkworm rearing and
27. Handling of various instruments

The participatory and innovative Teaching - Learning methodologies adapted include question and answer sessions, brainstorming, quiz, debates and discussions. Practical assignments, model preparation, problem tree analysis, field trips, case studies are done whenever necessary.

The students are taken to **Centralised Instrumentation and Service Laboratory** of Annamalai University and also **Pharmacology laboratory** to show the working principle of instruments like **SEM, HPLC, Gas Chromatography, NMR, tablet punching machine etc.**, in the estimation of pesticide residue in various matrixes and characterization of botanical insecticides. **Animal House** in our University gives exposure on **animal toxicology studies**. Students are also taken to **IIBAT, Padappai and Regional Plant Quarantine Station, Chennai, ICAR-NBAIR, Bangalore and bio-diversity hotspots in the eastern ghats and western ghats** to get hands on experience in pesticide residue analysis, animal house maintenance, good laboratory practices and quarantine procedures, bio control methodologies and faunal diversity on a regular basis.

Students are provided practical hands-on training on pest management in farmers' fields. Students are encouraged to attend National and International Conferences/seminars for research exposure and guest lectures are arranged periodically to enable scientific interactions. **Entomology Society for Innovations (ESI)** is functioning in the Department since February 2007 and is meant to tap knowledge and creativity of students, scholars and teaching staff in insect science. **Annamalai Entomology Students Club** is functioning for the benefit of the students.

#### 6.4.6 Supervision of students in PG programmes

**Out of 19 faculties, currently 17** are eligible in guiding PG scholars and in the last five years, Department of Entomology successfully produced **106 M.Sc. (Ag) Graduates**. For supervision and evaluation of their research, each Post Graduate student shall have an advisory committee which is formed before the end of the first semester to facilitate the student in carrying out the assigned thesis research plan.

The **advisory committee** shall comprise of a chairman and two members, of which one member shall be from the major discipline and another from any other discipline in the related field of thesis research. The chairman of the advisory committee will guide throughout the program and he/she helps the student in the selection of major and minor courses and seminar topics. The evaluation of credit seminar is done by the advisory committee in consultation with the Head of the Department.

For interdisciplinary research requiring expertise from teaching staff of other faculties, due permission need to be obtained from the Dean, Faculty of Agriculture to nominate them as Technical advisors.

Continuous monitoring of thesis research and maintenance of research monitoring register for each student is mandatory. At the end of each semester, the

evaluation of research credit is done by the advisory committee members by analysing the presentation and the committee offer their remarks/ suggestions for improvement of research work.

**Guidelines on the duties of the Advisory Committee**

- Guiding students in drawing the outline of research work
- Guidance throughout the programme of study of the students.
- Evaluation of research and seminar credits.
- Correction and finalization of thesis draft.
- Conduct of final Viva-Voce examination.
- The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
- Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.

**Number of recognized Teachers for PG guidance**

No. of recognised Teachers	Academic year	Intake of students	Student teacher ratio
17	2021-2022	18	1:1
18	2020-2021	17	1:1
18	2019-2020	17	1:1
18	2018-2019	17	1:1
18	2017-2018	20	1:1

**Details of Research Supervision (2017 – 2022)**

Sl. No.	Name of the student	Name of the guide	Year of completion	Title of the thesis
1.	Absisalam Ali Nur Abdi	Dr.Y. Hariprasad	2017	Studies on foraging activities and natural enemies of Indian honeybee ( <i>Apis cerana indica</i> Fab.) in Annamalainagar
2.	Arasu, A.	Dr.V.Selvanarayanan	2017	Studies on Influence of Levels of Nutrients on key insect pests in Rice
3.	Avinkumar, M.	Dr.S. Manickavasagam	2017	Taxonomy of Dryinid (Hymenoptera: Chrysidoidea) Parasitoids of India
4.	Balamurugan, G.	Dr.S. Arivudainambi	2017	Evaluation of Annamalai University insecticidal tablet certain key pests on Rice
5.	Indhumathi. B.	Dr.R. Kannan	2017	Evaluation of certain Red Algal seaweeds against Brinjal Epilachna Beetle <i>Epitachanvigintioctata</i> (Fab.)
6.	Jayakumar, K.	Dr. T. Selvamuthukumar	2017	Evaluation of botanicals-based pest management strategies in organic brinjal production regimes
7.	Jennio Percy, A.	Dr. B. Ananda Ganesa Raja	2017	Studies on the efficacy of certain entomopathogenic fungi and their combinations against Okra Aphids ( <i>Aphis gossipi</i> Glover)
8.	Karthikeyan, M.	Dr. C. Kathirvelu	2017	Studies on Diversity of Moth fauna of Annamalainagar
9.	Nandhini, S.M.	Dr. R. Kanagarajan	2017	Taxonomy of certain Genera of Chalcidid Pupal Parasitoids (Hymenoptera: Chalcididae)
10.	Nisha, L.N.	Dr. Chand Asaf	2017	Eco-Friendly Management of Pulse Beetle, <i>Callosobruchus chenesis</i> Linn. (Coleoptera: Bruchidae) with Botanicals in Different Pulse
11.	Nivetha, T.K.	Dr. R. Ayyasamy	2017	Bioactivity of certain essential oils against pulse beetle <i>Callosobruchus chinensis</i> L. (Bruchidae: Coleoptera) on chickpea seeds
12.	Promothkumar, R.	Dr. N. Muthukumar	2017	Studies on induction of resistance in bhendi accessions against shoot and fruit borer <i>Earias vittella</i> Fab.
13.	Sankararaman, H.	Dr. V. Sathyaseelan	2017	Arthropod Diversity in undisturbed Ecosystem in Pichavaram forests and Rice ( <i>Oryza sativa</i> ) Ecosystem in Annamalai nagar
14.	Suhasini, V.	Dr. T. Rani	2017	Efficacy of certain Botanicals against the grubs of Coconut Rhinoceros beetle, <i>Oryctes rhinoceros</i> (L.) (Searabaeidae: Coleoptera)
15.	Vinithra, A.	Dr. M. Senthilkumar	2017	Evaluation of certain IPM components for the management of tobacco Catterpillar, <i>Spodoptera litura</i> Fab. (Noctuidae: Lepidoptera) in black gram
16.	Ambika. S	Dr.T. Nalini	2018	Studies on colony dynamics and biocontrol potential of

				<i>Oecophyllasmaragdina</i> Fabricius (Hymenoptera: Formicidae)
17.	Archunan. K	Dr. M. Pazhanisamy	2018	Evaluation of certain eco-friendly approaches against shoot and fruit borer, <i>Eariasvittella</i> (Fabricius) on bhendi
18.	Arulkodi. P	Dr.Y. Hariprasad	2018	
19.	Arunbabu. J	Dr.V.Selvanarayanan	2018	Studies on resistance in black gram and green gram accessions against selected insect pests
20.	Athithya. A	Dr.S. Manickavasagam	2018	Taxonomy of certain genera of Mymarid (Hymenoptera: Chalcidoidea) egg parasitoids
21.	Balamurugan. S	Dr.S. Arivudainambi	2018	Efficacy of certain botanicals against selected sap feeders on chilli
22.	Dharani Priya. N	Dr.R. Kannan	2018	Evaluation of certain red algal seaweeds against <i>Spodoptera litura</i> (Fabricius)
23.	Janakiraman. R	Dr. T. Selvamuthukumar	2018	Evaluation of anti insect efficacy of selected botanical formulations against <i>Spodoptera litura</i> (Fabricius) in black gram
24.	Khaviya Bala. B	Dr. B. Ananda Ganesa Raja	2018	Bioefficacy of selected botanicals against cotton mealy bug, <i>Phenacoccus s olenopsis</i> L. (Pseudococcidae: Hemiptera) on okra
25.	Maline. A S	Dr. C. Kathirvelu	2018	Studies on fumigant toxicity of selected essential oils against certain key insect pests of stored produce
26.	Mangaiyarkkarasi.R	Dr. R. Kanagarajan	2018	Studies on taxonomy of encyrtid (Hymenoptera: Chalcidoidea) parasitoids
27.	Manojkumar. S	Dr. Chand Asaf	2018	Bioefficacy of selected biopesticides against <i>Helicoverpaarmigera</i> (Hubner) on pigeon pea
28.	Mary Floret. V	Dr. R. Ayyasamy	2018	Evaluation of Chlorantraniliprole 9.3% w/w + Lambd cyhalothrin 4.6% w/w 150 ZC against major pests of tomato
29.	Pavithradevi . P	Dr. N. Muthukumar	2018	Studies on influence of inorganic nutrients on resistance in bhendi against certain insect pests
30.	Prabhavathi. M	Dr. V. Sathyaseelan	2018	Studies on the bioefficacy of certain phytochemicals against two spotted spider mite, <i>Tetranychusurticae</i> Koch (Acari: Tetranychidae) on cowpea ( <i>Vigna unguiculata</i> L.) Walp.
31.	Rajeshkumar. P	Dr. T. Rani	2018	Combined effect of certain botanicals and biocontrol agents on rice pests management
32.	Ravichandaran. S	Dr. M. Senthilkumar	2018	Studies on mycological suppression of rice leaf folder, <i>Cnaphalocrocismedinalis</i> (Guenee)
33.	Sasinathan. S	Dr.T. Nalini	2018	Studies on ecology and non-chemical management of

				<i>Solenopsisgeminata</i> (Fabricius) (Hymenoptera: Formicidae)
34.	Sathya. S	Dr. M. Pazhanisamy	2018	Evaluation of certain organic and indigenous components against <i>Spodoptera litura</i> (Fabricius) on black gram
35.	Sushmetha. V.	Dr.Y. Hariprasad	2018	Studies on Host plant resistance selected solanaceae crops (Brinjal,Chilli and tomato) against sucking pests
36.	Aarthi. S	Dr.V.Selvanarayanan	2019	Studies on the preference of Pulse Beetle towards selected Hosts, Germplasm Accessions and containers
37.	Ajay Karthick. S	Dr.S.Manickavasagam	2019	Further studies on Taxonomy of Encyrtidae( Hymenoptera : Chalcidoidea) from India
38.	Dineshkumar. C	Dr.S.Arivudainambi	2019	Efficacy of certain botanicals against Brinjal Hadda Beetle, <i>Epilachnavigintioctopunctata</i> Fabricius (Coleoptera : Coccinellidae)
39.	Gunalan. C	Dr.R.Kannan	2019	Studies on certain Brown Algal Seaweed's Toxicity against <i>Spodoptera litura</i> (Fabricius)(Noctuidae: Lepidoptera)
40.	Kavinilavu. A	Dr.T.Selvamuthukumar	2019	Evaluation of Argemone 26ectarin L. Farmulations against Rice Leaf Folder <i>Cnaphalocrocismedinalis</i> Guenee
41.	Logeshvararaj. B	Dr.B.Ananda Ganesa Raja	2019	Botanicals Based Management of Banana Pseudostem borer, <i>Odoiporuslongicollisoliver</i> (Curculionidae: Coleoptera)
42.	Mangayarkarasi.S	Dr.C.Kathirvelu	2019	Bioactivities of certain Synthetic Volatile Compounds and Essential Oils against Coleopteran Pests of Stored Produce
43.	Mary Lisha. J	Dr.R.Kanagarajan	2019	Dynamics of Insect pests and Natural enemies in selected Rice Varieties
44.	Naveena Devi. G	Dr.Chand Asaf	2019	Biology and Bio-intensive Management of south American tomato Pinworm, <i>Tutaabsoluta</i> Meyrick (26ectarines26: gelechidae) on Tomato
45.	Nivetha. N	Dr.R.Ayyasamy	2019	Evaluation of phosmet 50 WP against <i>Cnaphalocrocismedinalis</i> and <i>Scirpophagaincertulas</i> on paddy
46.	Priyadharsan. R	Dr.N.Muthukumar	2019	Studies on the Influence of Solar Powered Light Trap on Insect Diversity in Rice Eco System
47.	Ragul. R	Dr.V.Sathyaseelan	2019	Studies on the management of cowpeaq aphid, <i>Aphis craccivora</i> Koch. (Hemiptera :Aphididae) on Cowpea, <i>Vigna unguiculata</i> (L) Walp.
48.	Ramya. J	Dr.T.Rani	2019	BIO-Efficacy of certain Botanicals against Cotton sucking pests
49.	Remoniya. X	Dr.M.Senthilkumar	2019	Anti-Insect properties of neem and Nerium against Tobacco Catterpillar, <i>Spodoptera litura</i> FAB. (Noctuidae : Lepidoptera)
50.	Revathi. M	Dr.T.Nalini	2019	Interactions between ants, herbivores and natural enemies associated with Extrafloral 26ectarines of cotton, sesame and castor

51.	Sowmiya S	Dr.M.Palanisamy	2019	Evaluation of certain Eco-Friendly Management Modules Against Major Sucking Pests of Bhendi
52.	Sowmiya T M	Dr.Y.Hariprasad	2019	Comparative Studies in Bio-Intensive pest management(BIPM) and Farmer's Practices against major insect pests on Rice
53.	Sridharan. P	Dr.V.Selvanarayanan	2019	Studies on the scope of Alternate Host and Mutant Accessions in managing Sesame Webworm <i>Antigsatracatalaunalis</i> Duponchel (Lepidoptera: Crambidae)
54.	Surya. K	Dr.S.Manickavasagam	2019	Taxonomy of Polynemagroup of Genera (Hymenoptera: Mymaridae) from India
55.	Tharani Sindiya R	Dr.S.Arivudainambi	2019	Biology and Survival Potential of cotton Mealybug, Phenacoccusolenopsis Tinsley (Hemiptera :Pseudococcidae) on non-Crop Plants
56.	Dhivya N	R. Kannan	2020	Ecological Engineering for the Conservation of Natural Enemies of Pests in Brinjal Ecosystem
57.	Gokulakrishna R K	Dr.T.Selvamuthukumran	2020	Evaluation of Different Cultivators of Tapioca <i>Manihot esculenta</i> Crats. As host of Eri silkwarmamiaricini Donovan
58.	Gracy P	Dr.B.Ananda Ganesa Raja	2020	Bio-efficacy and phytotoxicity evaluation of emamectin benzoate 5% SG against fall silk worm SpodapterafrugiperdaSmith (Noctuidae: Lepidoptera) in maize
59.	Kavitha T	Dr.C.Kathivelu	2020	Foraging 27ectarine and management of natural enemies of Indian honey bee <i>Apis cerana indica</i> Fab. In Annamalainagar
60.	Minu subhashree R	Dr.R.Kanagarajan	2020	Diversity of encyrtid parasitoids( Hymenoptera:Chalcidoidea) fromseleced crop Eco systems
61.	Padmapriya B	Dr.S.Manickavasagam	2020	Management of Indian Honey bee, <i>Apis cerana indica</i> F.(Hymenoptera : Apidae) at Annamalainagar coastal belt
62.	Poovizhi R	Dr.M.Ramanan	2020	Seasonal incidence and management of bhendi mites, <i>Tetranychus spp.</i>
63.	Priyadharshini V	Dr.R.Ayyasamy	2020	Bio-Efficacy ofEthiprole (10.7%) + Pymetrazine (40 % WG) against major sucking pests of Rice
64.	Saraswathi J M	Dr.N. Muthukumaran	2020	Host Plant Resisteant in castor Accessions against tobacco caterpillar <i>Spodoptera litura</i> Fab.
65.	Silambarasan S B	Dr.V.Sathyaseelan	2020	Insect and non-insect pest complex on Mulberry, <i>Morus spp.</i> And its management
66.	Sivasankari S	Dr.C.Kathivelu	2020	Evaluation of IPM modules for the management of Hadda Beetle, <i>Henosepilachnavigintioctopunctata</i> Fab. (Coccinellidae: Coleopreta) on

				Brinjal
67.	Sneka S	Dr.T.Nalini	2020	Multitrophic Interactions associated with Extrafloral Nectaries of Mesta and Castor
68.	Sowmiya K	Dr.M.Palanisamy	2020	Evaluation of certain Eco-Friendly management modules against shoot and fruit borer, <i>Leucinodesorbonalis</i> (Guenee) in Brinjal
69.	Srivarshini K	Dr.V.Selvanarayanan	2020	Studies of the Efficacy of Behavioural Approaches in managing selected insect pests infesting Bhendi
70.	Sudhandira N	Dr.S.Manickavasagam	2020	Taxonomy of Chalcidid(Hymenoptera: Chalcididae) pupal parasitoids
71.	Suguna G	Dr.S.Arivudainambi	2020	Impact of weather variables and host plants on the survival and development of fall Armyworm, <i>Spodoptera frugiperda</i> (J.E. Smith)(Lepidoptera: Noctuidae)
72.	Vishnu M	R. Kannan	2020	Studies on the effect of Red, Brown & Green Algal seaweeds for their Toxicity against Tobacco caterpillar <i>Spodopteralitura</i> (Fab.)
73.	Siranjeevi S	Dr. C. Kathirvelu	2021	Screening of Hermetic storage bags for themanagement of Rice Weevil, <i>Sitophilus oryzae</i> L.
74.	Ajay S	Dr. R. Kannan	2021	Potential Contact Toxicity of Brown Macroalgae, <i>Sargassumweghtii</i> Greville against the pulse Beetle <i>Callosobruchus maculates</i> (Fab.)
75.	Anujaa B	Dr. S. Manickavasagam	2021	Suitability of Artificial Diet in Rearing Eri Silkworm, <i>Samia ricini</i> (DONOVAN) and its Economics
76.	Balachandar. B	Dr. V. Sathyaseelan	2021	Seasonal incidence and life table parameters of two spotted spider Mite. <i>Tetranychusurticae</i> Koch. On Bhendi <i>Abelmoschus esculentus</i> (L.) Moench
77.	Deepa M	Dr. B. Ananda Ganesa Raja	2021	Bio-Efficacy of Chlorantraniliprole 9.3% w/w + Lambda-Cyhalothrin 4.6% w/w ZC (Ampligo 150 ZC) against pests of Pomegranate
78.	Dharagai C	Dr.T.Selvamuthukumaran	2021	Evaluation of Formulations of Gloriosa 28ectar L. Against <i>Spodoptera litura</i> Fab.
79.	Ganesh M	Dr .R.Ayyasamy	2021	Bio-Efficacy of Emamectin Benzoate (5%) against Brinjal Shoot and Fruit Border, <i>Leucinodesorbonails</i> (Guenee) (Lepidoptera: Crambiade)
80.	Gokul V	Dr. M. Ramanan	2021	Evaluation of Anti Insect Properties of <i>Senna alata</i> L. Plant extracts on <i>Spodoptera litura</i> Fab.
81.	Harshitha T V	Dr .T .Nalini	2021	Studies on Colony Dynamics and predatory efficiency of <i>Oecopphyllasmaragdina</i> Fab. ( <i>Hymenoptera: Formicidae</i> ) on pests of Agri-Horticultural crops

82.	Jayaveni M	Dr.N.Muthukumaran	2021	Influence of Microbial inoculants on Resistance in Bhendi Accessions against shoot and fruit border, <i>Eariasvittella</i> Fab.
83.	Keerthana B	Dr. R. Kanagarajan	2021	Quality and Economic Analysis of value – Added Honey of Indian Bee, <i>Apis cerana indica</i> (Hymenoptera; Apidae)
84.	Nesamani C	Dr.S.Arivudainambi	2021	Anti- Insect potency of selected Botanicals Against <i>Spodoptera litura</i> Fabricius (Noctuidae: Lepidoptera)
85.	Parameshwari D	Dr.M .Pazhanisamy	2021	Studies on Population Dynamics and management of Fall Armyworm, <i>Spodoptera frugiperda</i> ( J.E. Smith) ( <i>Lepidoptera</i> : <i>Noctuidae</i> ) On Maize
86.	Rohini A	Dr.Arivudainambi	2021	Insecticidal Potency of selected botanicals against Cowpea Aphid, <i>Aphis craccivora</i> Koch ( <i>Hemiptera</i> : <i>Aphididae</i> )
87.	Saai Vignesh B	Dr. S. Manickavasagam	2021	Diversity, Nesting Behavior, Foraging pattern and Hive Modelling in Meliponiculture
88.	Shanmugapriya C	Dr. T. Rani	2021	Bio- Efficacy of certain Botanicals Against sucking pests of Blackgram
89.	Venkatesh G	Dr.M.Senthilkumar	2021	Bio-Efficacy of Entomopathogenic fungus <i>metarhiziumanisopliae</i> against tobacco caterpillar <i>spodopteralitura</i> Fab.
90.	Desika C	Dr. S. Manickavasagam	2022	Role of stingless bee ( <i>Tetragonulairidipennis</i> )Hymenoptera: Apidae in Crop pollination
91.	Dhanapriya P	Dr.N.Muthukumaran	2022	Effect of micronutrients on the yield of foliage in mulberry ( <i>Morus alba</i> L.) and economic characters of silkworm ( <i>Bombyx mori</i> L.)
92.	Hari Amirtha R	Dr. B. Ananda Ganesa Raja	2022	Studies on the effect of selected entomopathogenic fungi and their combination against important sucking pest on okra
93.	Hari Chandana Koduru	Dr. S. Manickavasagam	2022	Role of bed disinfectants, photoperiod and oviposition substrates for a better ericulture
94.	Hari Karthick M	Dr.AmalaHicynth	2022	off- season foraging behaviour and management of Indian Honeybees ( <i>A.cerana indica</i> F.) in coastal ecosystem
95.	Janarthanan R	Dr.Arivudainambi	2022	Studies on bioefficacy and safety of cold pressed neem oil
96.	Kamalraj G	Dr. M. Ramanan	2022	Evaluation of anti insect properties of <i>Senna auriculata</i> L. Plant extracts on <i>Spodoptera litura</i> Fab.
97.	Karthick G	Dr. V. Sathyaseelan	2022	Biological attributes and seasonal incidence of yellow mite, <i>Polyphagotarsonemus latus</i> (Banks) on chilli, <i>Capsicum annum L.</i>

98.	Manikandan R	Dr .R.Ayyasamy	2022	Impact of lemongrass plant parts against brinjal hadda beetle, <i>Henosepilachnavigintioctapunctata</i> Fabricius, Coccinellidae: Coleoptera
99.	Mohammad Ikram	Dr.Arivudainambi	2022	Farming of Black Soldier Fly <i>Hermetia illucens</i> Linnaeus (Stratiomyidae: Diptera)
100.	Muthukrishnan N	Dr. C. Kathirvelu	2022	Evaluation of selected hermetic storage bags against Rice weevil, <i>Sitophilus oryzae</i> (Linn.) in rice.
101.	Priyadharshini P	Dr.T.Selvamuthukumaran	2022	Evaluation of anti-insect properties of <i>Annona squamosa</i> L. and <i>Annona 3oectarines</i> L. and studies on their physiological influences on <i>Spodoptera litura</i> F.
102.	Priyanka K	Dr. R. Kannan	2022	Potential toxicity of red algae seaweed <i>Gracilariasalicornia</i> against rice leaf folder <i>Cnaphalocrocismedinalis</i>
103.	Selvapriya V	Dr .T .Nalini	2022	Multitrophic interactions associated with extrafloral 3oectarines of <i>Impatiens balsamina</i> L. (Balsaminaceae)
104.	Sowmya Kalava	Dr. T. Rani	2022	Bioefficacy of certain botanicals against pulse beetle, <i>Callosobruchuschinensis</i> Linn. On stored black gram
105.	Thasneem A	Dr.M .Pazhanisamy	2022	Bioefficacy of certain biopesticides against Brinjal shoot and fruit borer, <i>Leucinodesorbonalis</i> .
106.	Vikaash M	Dr.R.Kanagarajan	2022	Foraging behaviour and management of <i>Apis cerana indica</i> F. (Hymenoptera: Apidae) during honey flow season.



#### 6.4.7 Feedback of stakeholders (Students, farmers, company, parents etc.)

An effective **Mentor - mentee** system is functioning at the department level to get feedback from the students regarding curricular and co-curricular activities. The course teachers are getting feedback regularly in the prescribed format from each student regarding lecture delivery, hands on training *etc.* at the end of the semester. The feedback obtained is discussed in the Department staff meeting for necessary improvement in curricula, hands- on training and research facilities.

In addition, feedback from nearby farming communities is regularly obtained by field visits. Meetings with **farmers, NGOs** and state government agricultural officers are arranged periodically to discuss and get feedback and is used for undertaking need based research to solve the issues. **Informal feedback from entrepreneurs and industry personnel** are obtained during their visits to the Department either for their reunion meets or official visits. With the support of **Annamalai Digital Information Centre**, online feedback and suggestions are obtained from students and the **IQAC** process these inputs and offer suggestions to the concerned Department. Further such inputs are placed in the Academic Council and Syndicate meetings along with the Action Taken Reports. Based on the inputs from all the three spheres, structural modifications in the syllabus are done. Occasionally, parents are meeting the staff and sharing the views.

Stakeholders	Action taken
<b>Students</b>	Conducting coaching classes for competitive and entrance examinations such as NET, ICAR fellowship and Ph.D.
	Regular Diagnostic field visits and short study tours to eco-spots
	Creation of additional pot-culture yard and semi field research facility
	Internship during the Programme
<b>Farmers, NGOs &amp; Agricultural officers</b>	Method demonstration related to pest management
	Training on apiary maintenance and issuing bee colonies
	Demonstration and Fixing of solar powered light traps
	Campaign on rodent management & Owl nesting
	Guidance in preparation of improved formulations of botanicals
	Inputs for organic agriculture
<b>Pesticide and Sugar Industries</b>	Syllabus revision in tune with the latest developments in the industry
	Establishment of doses for pesticide molecules
	Resistance monitoring
	Domain specific Laboratories
<b>Parents</b>	Increased number of student fellowships - around 35 lakh rupees has been awarded to students of PG from funded projects in the last five years.
	Creation of Employment opportunities (Placement)

#### 6.4.8 Student intake and attrition in the programme (last five years)

Students are admitted in the programme based on the OGPA, subject OGPA, entrance examination marks and interview performance. **State government reservation policy is strictly followed in the selection.**

Details	Students admitted					Attrition (%)				
Academic Year	2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
Total	20	17	17	17	18	0	0	0	0	0
Male: Female	1:1.8	1:4.6	1:1.1	1:1.1	1:1	0	0	0	0	0

Number of PG Students Graduated					
Year	2017-18	2018-19	2019-20	2020-21	2021-22
Total	20	20	17	17	17
Male: Female	1:1.5	1:1.8	1:4.6	1:1.1	1:1.1

#### Progression of PG students

The Department always motivates the students to take up national level entrance/competitive examinations and coaching classes have been organised regularly for the PG students who are preparing for ICAR fellowships for their higher studies, ARS and NET. This approach had paid dividend in the form of increased number of successful candidates in the recent years in the national level examinations.

Number of Students Progressed to Ph.D.					
Academic Year	2017-18	2018-19	2019-20	2020-21	2021-22
Total	7	9	8	6	5
Male: Female	1:2	1:3.1	1:1.8	1:5	1:1.5

#### List of Students Progressed to Ph.D.

S.No.	Year of passing PG	Name of the student	Student Unique Enrolment ID	Name of the Institution Joined
1.	2017	Absisalam Ali Nur Abdi	81501	USA
2.	2017	Indhumathi. B.	81505	Annamalai University
3.	2017	Jennio Percy, A.	81507	TNAU
4.	2017	Nisha, L.N.	81510	Annamalai University
5.	2017	Nivetha, T.K.	81511	TNAU

6.	2017	Sankararaman, H.	81513	Annamalai University
7.	2017	Suhasini, V.	81514	Annamalai University
8.	2018	Archunan. K	81602	Annamalai University
9.	2018	Arulkodi. P	81603	Annamalai University
10.	2018	Athithya. A	81605	Annamalai University
11.	2018	Balamurugan. S	81606	Annamalai University
12.	2018	Dharani Priya. N	81607	TNAU
13.	2018	Khaviya Bala	81609	TNAU
14.	2018	Mary Floret. V	81613	Annamalai University
15.	2018	Pavithradevi, P	81614	Annamalai University
16.	2018	Sathya S	81619	TNAU
17.	2019	Aarthi S	081701	Annamalai University
18.	2019	Gunalan C	081705	TNAU
19.	2019	Logeshvararaj B	081707	Annamalai University
20.	2019	Mangayarkarasi.S	081708	Annamalai University
21.	2019	Mary Lisha. J	081709	TNAU
22.	2019	Priyadharsan. R	081712	Annamalai University
23.	2019	Remoniya. X	081715	TNAU
24.	2019	Revathi. M	081716	Annamalai University
25.	2020	Sowmiya K	1850120023	Annamalai University
26.	2020	Suguna G	1850120007	Annamalai University
27.	2020	Priyadharshini V	1850120018	Annamalai University
28.	2020	Gokulakrishnaa RK	1850120026	Annamalai University
29.	2020	Saraswathi JM	1850120013	Annamalai University
30.	2020	S.Sivasankarai	1850120021	TNAU
31.	2021	Anujaa B	197080003	Annamalai University
32.	2021	Jayaveni M	197080011	TNAU
33.	2021	Saai Vignesh B	197080016	TNAU
34.	2021	Shanmugapriya C	197080017	Annamalai University
35.	2021	Venkatesh G	197080018	Annamalai University

### Performance of PG students in NET/ARS

Number of students Passed in NET/ARS					
Year	2017	2018	2019	2020	2021
Number Passed	1	9	7	8	10
Number Appeared	3	10	7	9	10
Pass Percentage	34%	90%	100%	89%	100%

### List of Students Passed in NET/ARS

Year	NET/ARS Qualified (roll number in parenthesis)
2017	Nisha, LN. (81510)
2018	Arulkodi, P.(81603) Dharani Priya, N (81607) Pavithradevi ,P (81614)

Year	NET/ARS Qualified (roll number in parenthesis)
	Archunan, K. (81602) Suhasini, V. (81514) Sankararaman, H.(81513) Athithya. A(81605) Sathya. S(81619) Khaviya Bala(81609)
2019	Gunalan. C (1750120012) Logeshvararaj. B (1750120003) Mangayarkarasi.S (1750120006) Mary Lisha. J (1750120001) Priyadharsan. R (1750120007) Remoniya. X (1750120011) Revathi. M (1750120016)
2020	Gokulakrishnaa R K (1850120026) Gracy P (1850120001) Priyadharshini V (1850120018) Saraswathi J M (1850120013) Sneka S (1850120019) Sowmiya K (1850120023) Suguna G (1850120007) Vishnu M (1850120008)
2021	Anujaa B (197080003) Balachandar. B (197080004) Deepa M (197080005) Ganesh M (197080007) Gokul V (197080009) Harshitha T V (197080010) Jayaveni M (197080011) Keerthana B (197080012) Parameshwari D (197080014) Rohini A (197080015)

### **Endowment prizes offered in the Department**

There are five Endowment prizes constituted for the first Rank holder in Entomology.

1. Gujarat AgroIndustriesGold Medal,
2. SrilochaniVaradarajulu Prize,
3. Thirumathi.R.BagirathiammalPrize,
4. Thiru.S.P.Renganathan Prize and
5. Dr. Rm. Nachiappan and his students Prize (from 2004)

### Fellowships offered in the Department

Fellowships from private funded projects (around 40 lakhs rupees for the past five years) are extended to PG students to encourage their research activities.

Academic Year	Amount Dispersed as Fellowships (Rs. in lakhs)	Number of Students benefitted
2017-18	10.42	14
2018-19	8.37	12
2019-20	4.32	5
2020-21	5.22	5
2021-22	9.90	11

### Internships undergone

The post graduate students are undergoing internship program for a period of 20 – 30 days in organizations related to Entomology. The students of 2020- 22 batch participated in the internship program in the following organizations.

- Ecocare Pest Control Services, Toothukudi
- Vibis Natural Bee Farm, Madurai
- Centre for Indian Knowledge system, Sirkazhi
- Coromandal India Ltd., Cuddalore

### Employment of Post graduate Students

The Department is also striving hard to produce employable graduates which results in greater placements of the students in various private sectors.

Year	Number of PG students graduated (Male: Female)	Progression to higher Education	Employed in					Percent employed
			Central Govt.	State Govt.	Private	Entrepreneur	International	
2017	15 (8:7)	7	-	1	4	2	1	100
2018	20 (8:12)	9	-	1	7	-	1	82
2019	20 (7:13)	8	-	-	7	-	-	59
2020	17 (3:14)	6	-	-	3	-	-	28
2021	17 (8:9)	5	-	-	5	-	-	42
2022	17 (8:9)	-	-	-	2	-	-	-



**list of students employed with details**

S.No.	Year	Name	Student Unique Enrolment ID	Email ID	Company Name	Salary (per Month)
1.	2017	Abdisalam Ali Nur Abdi	81501	cabdisalaan990@gmail.com	Research Associate, College of Agricultural and Environmental Science, Ohio State, USA	2,00,000
2.	2017	Arasu A	81503	aarasu1994@gmail.com	Aravindhan Agriculture College, Tiruvannamalai	25,000
3.	2017	Avinkumar M	81503	avinkumaragri@gmail.com	Agriculture Officer, Centre of millets research, Tiruvannamalai	46,935
4.	2017	Balamurugan G	81504	balabsc93@gmail.com	Entrepreneur - Fertilizer shop, Viruthachalam	75,000
5.	2017	Jayakumar K	81506	Jayak1994@gmail.com	Entrepreneur - Agrocenter, Namakal	60,000
6.	2017	Karthikeyan M	81508	karthman@gmail.com	Field Officer, ATMA Scheme, Govt. of Tamil Nadu	30,000
7.	2017	Promothkumar R	81512	promoth03@gmail.com	Field officer, Andrapradesh	60,000
8.	2017	Vinithra A	81514	vinithra127@gmail.com	Assistant professor, Dhanalakshmi sreenivasan Agricultural College, Perambalur	30,000
9.	2018	Ambika S	81601	sssambi@gmail.com	Assistant manager IAC, KrishiTech Pvt Ltd.	41,000
10.	2018	Arun babu J	81604	arunento07@gmail.com	EFS facilities service, Al Ain Branch, Agriculture Engineer, Landscape pest control, Dubai	1,00,000
11.	2018	Janakiraman R	81608	jackeyagri@gmail.com	Senior officer Entomology, Quaramendal Int Ltd., Bioproduct	41,000

					division, Cuddalore.	
12.	2018	Manojkumar S	81612	entomanoj@gmail.com	CEO, FPO-Karur	33,000
13.	2018	Rajesh kumar P	81616	entorajeshkumar@gmail.com	Senior Landscape Horticulturist, Master plan landscape architect, Kassiarcad, T nagar, Chennai	50,000
14.	2018	Ravichandran S	81617	ravichandranentomology@gmail.com	AO, Farm manager, State oil seed farm, Vellalaviduthi	
15.	2018	Sasinathan S	81618	sasinathan143@gmail.com	Trial trainee Syngenta Ind Pvt lts, R & D, Coimbatore	40,000
16.	2018	Sushmetha V	81620	methaento@gmail.com	Bharath institute of Higher education and Research, Tambaram, Chennai	40,000
17.	2018	Sathya S	81619	Ammusathya135@gmail.com	Assistant Manager, Quality control, Dharmapuri	35,000
18.	2019	Ajay Karthick. S	081702	aajaykarthick96@gmail.com	Technical Officer – Eco-care pest control Services	30,000
19.	2019	Dineshkumar. C	081703	diamonddinesh514@gmail.com	Phytosanitary Inspector, VIS Fumigation Services	25,000
20.	2019	Nivetha. N	081711	nivetha96agri@gmail.com	Assistant Professor – Indian College of Agriculture, Radhapuram, Tirunelveli	25,000
21.	2019	Ragul. R	081713	Ragul.ranganathan96@gmail.com	Study Personnel, IIBAT, Chennai	30,000
22.	2019	Sowmiya S	081717	Sowmiyasivanesan22@gmail.com	Assistant Professor – Palar College of Agriculture	35,000
23.	2019	Sridharan. P	081719	Sridharmani20@gmail.com	Phytosanitary Inspector, Fumigation Services Pvt. Ltd.	45,000
24.	2019	Surya. K	081720	Suryakathirvel96@gmail.com	Technical Officer – Eco-care pest control Services	25,000
25.	2020	Vishnu M	1850120008	saivishnu574@gmail.com	Technical Officer – Quarantine	25,000
26.	2020	R.Poovizhi	1850120011	poovizhirajendran1997@gmail.com	Technical Officer – Quarantine	25,000
27.	2020	Padmapriya. B	1850120024	priyabaluagri@gmail.com	Technical Officer – Quarantine	30,000

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28.	2021	Dharagai C	197080006	dharagaichandrasekaran@gmail.com	Kanakagiri collective farmer producer company Ltd. Elumathur	20,000
29.	2021	Parameshwari D	197080014	paramesoundarya@gmail.com	Assistant Professor, Don-Bosco College of Agriculture, Arakonam	30,000
30.	2021	Rohini A	197080015	rohinimcdc@gmail.com	CEO, Farmer's Production Organization	30,000
31.	2021	Balachandar B	197080004	balacb@gmail.com	R&D-Syngenta India Ltd. Sathyamangalam, Coimbatore	19,931
32.	2021	Ganesh M	197080007	mganee@gmail.com	Assistant Professor, Pushkaram college of Agriculture, Pudukottai	22,000
33.	2022	Janarthan R	207083336	janaran@gmail.com	Field development specialist, FMC India Pvt. Ltd.	45,000
34.	2022	Priyanka K	207080014	abipriyanka1999@gmail.com	Eco Care India Pvt Ltd, Tanjore	20,000

#### 6.4.9 ICT application in curricular delivery

ICT tools are used in handling both theory and practical classes. Smart class room with internet facility (broadband connection and Wi-fi facility), LCD projectors, TV and smart board helps in making the teaching enabled with ICT in the Department.

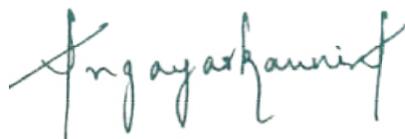
Video facilities available in the Department help us to cast videos on sericulture, apiculture and lac culture. PPTs are designed and up dated regularly to teach the syllabus content in a way to make the students understand better. A web browsing enclave linked computers have access to the UGC Inlibnet portal "SodhSindhu" and "Sodhganga" for literature surveys. Number of computers in use is 15 of which 10 are with networking facility.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. A. ANGAYARKANNI** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Genetics and Plant Breeding

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



## M.Sc. (Ag.) in Genetics and Plant Breeding

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#### 6.4. Self Study Report for the Programme

**Name of the Programme: M.Sc. (Ag.) in Genetics and Plant Breeding**

**Offered by: Department of Genetics and Plant Breeding**  
(UGC SAP DRS Phase II & DST FIST supported)

##### 6.4.1. Brief History of M.Sc. (Ag.) in Genetics and Plant Breeding

The division of Agricultural Botany came into existence mainly to cater the instructional needs of UG degree in the year 1958. Later the division was upgraded as the Department of Agricultural Botany in the Faculty of Agriculture in 1980. The Post graduate programme in Genetics and Plant Breeding was started in the year 1989 in the Department of Genetics and Plant Breeding.

Historical Itinerary	Year of Commencement/Period
Division of Agricultural Botany	1958
Ph.D. in Agricultural Botany	1965
The Division was upgraded as Department of Agricultural Botany	1980
M.Sc. (Ag.) in Genetics and Plant Breeding	1989
Ph.D. in Genetics and Plant Breeding	1992
M.Sc. (Ag.) in Seed Science and Technology	2006
The Department was renamed as Department of Genetics and Plant Breeding	2010
Ph.D. in Seed Science and Technology	2010
M.Sc. (Ag.) in Agricultural Biotechnology	2012
Ph.D. in Agricultural Biotechnology	2019
Renamed as M.Sc. (Ag.) in Plant Molecular Biology and Biotechnology	2019
Renamed as Ph.D. in Plant Molecular Biology and Biotechnology	2019
Renamed as M.Sc. (Ag.) in Molecular Biology and Biotechnology; Ph.D. in Molecular Biology and Biotechnology	2022

The M.Sc. (Ag.) degree programme in Genetics and Plant Breeding, has a total of 55 credits (2017-18 to 2020-21) which includes 20 credits for major courses, 20 credits for Master's thesis research, 09 credits for minor courses, 05 credits for supporting courses, 1 credit for seminar along with non - credit compulsory courses.

The recommendations of the V Dean's Committee is implemented from 2022-23 onwards. Out of a total of 70 credits which includes 20 credits for major courses, 30 credits for Master's thesis research, 08 credits for minor courses, 06 credits for supporting courses, 05 for common course, 1 credit for seminar along with non - credit compulsory courses.

### **Vision**

- Leader in preparing plant breeding professionals with skills to provide services to improve the lives of farming community.
- To progress as lead centre to breed crops in marginal environments with greater efficiency for the benefit of the resource-poor farmers.

### **Goals**

- To impart high quality education by reasoning out modern technological advancements.
- Utilization of advancements in plant science techniques to improve crops for greater food and nutritional security in east coast region of Tamil Nadu
- Meeting the demands of ever burgeoning population for food grains by accelerating genetic mechanisms pertinent to the crop.
- To develop improved crop varieties with increased yield, resistance and wider adaptability to changing climate.
- To collaborate with research and development agencies for innovative research projects.
- To become “Centre for excellence” in plant breeding education.

### **Objectives**

- To inculcate knowledge based education on recent advancements in Plant Genetics and modern Plant Breeding practices and to contribute in the development of professionals with sufficient competence and technical knowledge in plant breeding to carry out independent research.
- To impart sound basic knowledge about various plant breeding techniques in field and horticultural crops and to provide emerging technologies in the field of plant breeding.
- Emphasizing the importance of data utilization, genomics, high throughput phenotyping-thus shortening the time frame of breeding cycle in crop improvement and to prospect the under exploited minor crops for potential utilization of their nutritive value.
- Breeding for biotic and abiotic stress tolerance through marker assisted breeding and to identify candidate genes for both saline and flood tolerance suitable for east coast region of Tamil Nadu.
- Collaborative research with ICAR and IRRI for development of region specific mandate crops and to integrate into AICRIP program in mandate crops of Cuddalore district. This will facilitate research based teaching effective.
- Strong research integration with ICAR, UGC, DST, DBT. IIRR, IIOR and IRRI for development of region specific mandate crop varieties.

### Strategic Plan to Achieve Vision and Goal

Goals	Objectives	Implementation plan	Performance Metrics / Time-line	Outcome
To impart high quality education by reasoning out modern technological advancements in Plant Breeding and Genetics	<p>To inculcate knowledge based education on recent advancement on Plant Genetics and modern Plant Breeding practices.</p> <p>To contribute in the development of professionals with sufficient competence and technical knowledge in plant breeding to carry out independent research.</p>	<p>Upgradation of course content periodically.</p> <p>Organizing special lectures and guest lectures.</p> <p>Hands on training on different practical tools of plant breeding</p> <p>Through class seminars and credit seminars</p>	<p>Once in three years.</p> <p>Every semester</p> <p>Every semester</p> <p>Every semester</p>	<p>A periodically updated curriculum adds up to the domain knowledge of the students.</p> <p>Improved presentation skills and interaction skills.</p> <p>Development of student's personality to face the society in future.</p>
Utilization of advancements in plant science techniques to improve crops for greater food and nutritional security in east coast region of Tamil Nadu	<p>To impart sound basic knowledge about various plant breeding techniques in field and horticultural crops.</p> <p>To provide emerging technologies in the field of plant breeding.</p>	<p>Hands on training in discerning the floral biology for identifying respective pollination mechanism.</p> <p>Organizing special lectures and guest lectures.</p> <p>Training session, study tours and exposure in laboratory techniques.</p>	Every semester	Expertise in identifying apt breeding technique for the target crop.
Meeting the demands of ever burgeoning population for food grains by accelerating	Emphasizing the importance of data utilization, genomics, high throughput phenotyping- thus shortening the time frame of breeding cycle	Development of high yielding varieties suitable for Cauvery delta region.	Periodically	Improvement on livelihood of farmers.

Goals	Objectives	Implementation plan	Performance Metrics / Time-line	Outcome
genetic mechanisms pertinent to the crop.	in crop improvement.  Prospecting the under exploited minor crops for potential utilization of their nutritive value.			
To develop improved crop varieties with increased yield, resistance and wider adaptability to changing climate.	Breeding for biotic and abiotic stress tolerance through marker assisted breeding.  Identifying candidate genes for both saline and flood tolerance suitable for east coast region of Tamil Nadu.	Development of abiotic and biotic stress tolerant/resistant varieties.  Advancement of breeding cycle for developing short duration varieties in rice, blackgram, greengram and bhendi.	Periodically	Precision breeding.
To collaborate with research and development agencies for innovative research projects.	Collaborative research with ICAR and IRRI for development of region specific mandate crops.  Integration into AICRIP program in mandate crops of Cuddalore district. This will facilitate research based teaching effective.	Identification of high yielding stable varieties.  Imparting technical know-how to students in screening stable genotypes.	Once in a year	Varietal improvement
To become “Centre for excellence” in plant breeding education	Strong research integration with ICAR, UGC, DST, DBT. IIRR, IIOR and IRRI for development of region specific mandate crop varieties.	To introduce modern breeding tools practiced in National and International Institutes.  MoU with National and International research agencies.	Periodical	Learning current advancements and implementation for speed breeding.  MoU with IRRI for evaluating “Multiple Stress Tolerant Rice Varieties for Tamil Nadu”.

## Accomplishments

### Research Collaborations

- The Department of Genetics and Plant Breeding has collaborated with various National and International agencies such as **IAEA, FAO, IRRI, IIRR, IIOR, and UGC**.
- The department has strong collaboration with **AICRIP (ICAR) and STRASA (IRRI) (saline tolerant breeding network)** programme.
- Faculties of the Department are actively engaged in **IRRI-Annamalai University (IRRI-AU) MoU on “Multiple Stress tolerant Rice Varieties for TamilNadu”** involving extensive evaluation of elite **Green Super Rice (GSR) lines** since 17.06.2020.

### Research Fundings

The research environment of the Department got boosted up by funds from

- ✓ **UGC-SAP DRS Phase I & II (102.5 lakhs)**
- ✓ **DST FIST (Rs. 38 lakhs)**
- ✓ **Non-SAP (10 lakhs)**
- ✓ **RUSA (10 lakhs) and**
- ✓ **TNSCST.**
- ✓ **RGNF.**
- ✓ **Fly Ash mission from NLCIL.**

### Research Outcomes

- Standardized hand emasculatation and pollination method for hybrid seed production in Sesame is a major outcome of FAO/IAEA research project.
- Annamalai Melon.
- AU-1 rice are the notable contributions of the department.
- Annamalai Brinjal (National Aphid resistant check variety), a popular and major cultivated variety in Cuddalore district of Tamil Nadu.
- AU-1 GSR (Green Super Rice), an elite high yielding, multiple stress tolerant rice variety was released during December, 2020. It is cultivated in the districts of Nagapattinam, Mayiladuthurai, Cuddalore, Villupuram, Kallakurichi, Thiruvallur, Salem, and Madurai.
- Seed pelleting techniques for sesame, green gram and black gram using fly ash was developed through DST Project.
- Sesame seed hardening technique chicory medicinal herb extract was developed through UGC - MRP project
- Seed halogenation technique for sesame seed storage through TNSCST project
- Seed hardening techniques for paddy, Greengram and brinjal.
- SSR marker techniques for varietal identification.
- Standardized Bio pelleting using *Prosopis* spp.
- Standardization of tissue culture techniques for sesame, green gram and black gram was developed through DST Project.
- Black gram genotypes resistant to YMV was screened using molecular tools through UGC-GDA-XII plan innovative Research project.

### Achievements by Faculty

- Dr. C.N. Sambandam an eminent vegetable breeder and the first Head of the Department spearheaded the release of Annamalai Brinjal.
- Dr. S. Thirugnanakumar's Doctoral research scholar Dr. R. Narasimman received **Jawaharlal Nehru Post Graduate Research Award from ICAR.**
- Dr. A. Anandan went for hands-on training at **International Rice Research Institute (IRRI), Philippines.**
- Dr. R. Eswaran had undergone training at **Ghent University, Belgium**
- Dr.S.Murugan was invited as **Visiting Professor** by the Dept. of Horticulture, **North Carolina State University, U.S.A.**
- Dr. S. Murugan was invited as **Visiting Scholar/Researcher** by the **Biomedical Sciences Research Institute, Ulster University, UK.**
- Dr. M. Prakash, Professor served as **UGC-SAP Co-Ordinator** for DRS Phase I and II.
- Dr. S. Murugan, Professor served as **UGC-SAP Deputy -Coordinator** for DRS Phase I and II.
- Dr. M. Prakash, Professor is currently serving as **Controller of Examinations**, Annamalai University since, Januaray, 2022.
- Dr. S. Murugan, Professor is serving as **Joint-Director, Directorate of Research and Development (DRD)**, Annamalai University.
- Dr. S. Padmavathi, Professor is serving as **Academic Council Member**, Annamalai University from 2022 onwards.
- Dr. K. Saravanan, Professor is serving as **Faculty Co-Ordinator, IQAC Cell, Faculty of Agriculture** from 2020 onwards.
- Dr.T. Sabesan, Associate Professor is serving as **Deputy Director, Center for Alumni Relations**, Annamalai University since 2019.
- Dr. M. Venkatesan Associate Professor is serving as **Nodal-Officer, Disability Cell**, Annamalai University.
- Dr. S. Vennila, Assistant Professor is serving as **Associating Scientist, Center for Natural Farming and Sustainable Agriculture.**
- **IRRI-AU MoU Team of Department of Genetics and Plant Breeding include Dr. K. Saravanan, Dr. T. Sabesan, Dr.R.Elangaimannan and Dr. B. Sunilkumar as lead plant breeders.**
- **"AU-1 GSR" – A multi stress tolerant rice variety was released by IRRI-AU MoU Team of Department of Genetics and Plant Breeding.**

The faculties also visited various countries and attended research oriented conferences and workshops. They are also actively involved in professional development activities by becoming members in various professional bodies and published research articles in various peer reviewed and high impact factor journals. The majority of the Staff in this discipline has qualified the National Eligibility Test.

Departmental Research Metrics :

Topic	Metrics	Source
'h' Index	11	IRINS, AU
i 10 Index	7.9	Google Scholar
Cross-Ref Citations	338	IRINS, AU
Total Citations	747	IRINS, AU

Special Lectures

- Dr.V. Vijayakumar, Eastern Connecticut State University, USA
- Prof. C. Ramasamy, Former Vice Chancellor (TNAU), Coimbatore.
- Dr. K.K.Vinod, Principal Scientist, IARI, Regional Centre, Aduthurai.
- Dr. R. Vijayaraghavan, Dean, Adhiyaman College of Agriculture and Research, Krishnagiri.
- Dr.Mohan Andrew Savery, Senior Rice Breeder, KVK, Puducherry
- Dr. M. Subramanian, Former Director of Research, TNAU
- Dr.MuraliGopal, Principal Scientist, ICAR- Central Plantation Crops Research Institute, Kerala.
- Dr. S. Thirumeni, Professor& Head, PAJANCOA, Karaikal.
- Dr.J. KannanBapu, Former Registrar, TNAU
- Dr.Muralidharan, Director, Indian Institute of Pulses Research
- Dr. M. Mageswaran, Director, CPBG, TNAU
- Dr.N. Nadarajan, Professor, Tamil Nadu Agricultural University.
- Mr.UmakanthDubey, Deputy Registrar, PPVFRA, New Delhi
- Ms. Subashini Sridar, Centre for Indigenous Knowledge Systems (CIKS)

International and National Seminars/Conferences/Workshops - Organised (2017-2022)

Topic	Metrics
<b>International Conference</b>	01
<b>National Seminar/Conference/Webinars</b>	09
<b>National/Workshop</b>	08

The department successfully organized the first policy meeting on “National Consultation Workshop on Agro-biodiversity Hotspots and Access and Benefit Sharing” of National Biodiversity Authority (NBA) and PPVFRA.

In March, 2018 the department successfully organized the Plant variety protection Awareness programme for Farmers under the aegis of PPVFRA.

### Research Publications and Books (2017-2022)

Journal Articles	302
Books & Book Chapters	91

ICAR has recommended two books namely, “A Text book of Seed Science and Technology” “Quantitative Genetics and Crop Breeding” authored by Dr. S. Thirugnanakumar and Co-authors as well as Dr. S. Padmavathi and Co authors for the aspirants of PG and Ph.D. courses in ICAR and affiliated colleges.

### Student Progression

Students are constantly motivated to take up national level competitive examinations like National Eligibility Test, ARS and were guided through coaching classes with supporting books. The Department is striving hard to produce excellent researchers with outstanding skill sets. The faculty members periodically organize Seminars, Trainings and workshops to impart knowledge on recent development in crop improvement.

Thrust has been given to impart knowledge to students on various aspects of Genetics and Plant Breeding at post graduate level. This ultimately encourages the students to improve their competing ability to express their ability in the competitive examinations. Additionally, coaching classes are being conducted to make the students, facing competitive world. This enables the students to secure placements in World Class coveted overseas institutions, most often with full-funding.

Remedial classes are being offered for slow learners for easy understanding and enhance their performance. By taking Guest lectures with renowned scholars, the knowledge and recent trends of the subjects are being updated.

### Alumni Support

Alumni of the Department placed in SAUs, ICAR Institutions, International Institutes, and Private Sectors act as a major driver of growth providing technical guidance, essential infrastructure, CSR funding and placement.

The alumni donations has resulted in realizing the Dr. C.N. Sambandam Hi-Tech Presentation Hall.

### Departmental Endowment Awards for Students

The six endowment awards, instituted decades back, to provide impetus for students to excel in the various facets of M.Sc. in Genetics and plant Breeding, are listed below.

Sl. No.	Name of the Endowment award/medal
1.	Dr. M.S. Swaminathan endowment gold medal for top ranking student
2.	Shri. V.S. Ramalingam Pillai Gold medal for Plant Breeding and Genetics
3.	Vallalar Endowment prize
4.	Dr. V. Sivasubramanian endowment Gold medal for Quantitative Genetics
5.	Dr. V. Sivasubramanian endowment Gold medal for Best Research in Genetics and Plant Breeding
6.	Srilochani Varadarajan endowment for top ranking student

### Department Snapshot

Category	Total period	Last five year period (2017-2022)
Number of Publications (Journal articles)	883	345
Number of Publications (Seminars/Conferences/Symposia)	240	80
Number of Books & Book Chapters	161	22
Numbers of Projects obtained	30	11
Grants Mobilization (Lakh rupees)	343.13	194.26
Number of Ph.Ds. Produced	57	5
Number of PGs Produced	503	112
Number of Seminars/Conference/ Webinar/ Training program/Workshops organized	32	18

#### 6.4. 2. Faculty Strength

The permanent faculty strength appointed in the Department of Genetics and Plant Breeding is furnished below.

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
1.	Professor*	9	9	-	1
2.	Associate Professor*	10	10	-	1
3.	Assistant Professor*	12	12	-	3
	<b>Total</b>	<b>31</b>	<b>31</b>	<b>-</b>	<b>5</b>

\*Assigned responsibilities for multiple programmes



### Credentials of the Faculty

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)
				PG	PhD		Journal	Others			
1.	Dr. S. Padmavathi © Professor and Head	26	Hybrid seed production, Seed Treatment techniques	19	3	20	3	1	6	3	114
2.	Dr. M. Prakash ©# Professor	26	Stress Physiology and plant Molecular Biology	25	8	72	15	6	17	31	1142
3.	Dr. S. Murugan *# Professor	26	Cytogenetics, Heterosis Breeding, Molecular Plant Breeding, Molecular marker technology	15	3	50	9	2	9	9	242
4.	Dr.S.Thirugnanakumar * Professor (Retired on 30.06.2022)	26	Molecular genetics, Biotechnology, Mutation Breeding, Recombination breeding	28	7	90	5	2	11	11	296
5.	Dr. P. Senthil Kumar *# Professor	24	Heterosis Breeding, Sesame Breeding, Musk melon breeding, Molecular marker	22	3	31	-	2	13	16	512

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)
				PG	PhD		Journal	Others			
							11	7.94			
			technology								
6.	Dr. Y. Anbuselvam * Professor	26	Genetics and Cytogenetics, Biometrics, Biotechnology	23	6	56	10	2	11	12	313
7.	Dr. P. Thangavel * Professor	25	Biometrics, Genetics and Pulse Breeding	18	1	57	3	1	9	9	248
8.	Dr. K. Saravanan * Professor	24	Quantitative Genetics, Biometric analysis	18	4	98	4	3	15	27	1001
9.	Dr. N. Senthil Kumar * Associate Professor	22	Heterosis Breeding in Vegetables	15	3	72	19	9	8	6	231
10.	Dr. Y. AnithaVasline * Associate Professor	22	Mutation Breeding, Cytogenetics	15	1	29	8	4	7	3	89
11.	Dr. B. Sunil Kumar *# Associate Professor	20	Physiological and Molecular genetics in Pulses	11	1	61	6	4	14	30	1310
12.	Dr. J. Gokulakrishnan * Associate Professor	21	Heterosis Breeding in Rice & Maize	13	2	43	10	6	7	6	169
13.	Dr. R. Elangaimannan *# Associate Professor	21	Heterosis Breeding, Biometrics,	13	1	43	10	3	6	6	188

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)
				PG	PhD		Journal	Others			
			physiology & Plant Biotechnology								
14.	Dr. T. Sabesan *# Associate Professor	20	Heterosis breeding, and Molecular Plant Breeding for Abiotic stress.	11	-	61	18	8	13	16	615
15.	Dr. V. Anbanandan * Associate Professor	18	Sugarcane Breeding, Rice Breeding	7	-	33	9	2	5	2	98
16.	Dr. GSathiyarayanan © Associate Professor	19	Seed Halogenation. Hybrid seed production	16	-	90	29	2	8	6	222
17.	Dr. S. Ezhil Kumar © Associate Professor	19	Molecular Varietal identification, Seed Production and Seed Testing.	15	-	21	5	2	2	1	20
18.	Dr. P. Karthikeyan * Associate Professor	17	Rice Saline Tolerant	7	-	46	9	3	6	5	171
19.	Dr. M. Venkatesan * Associate Professor	17	Rice Breeding, Innovative Breeding, Hybrid rice	10	-	57	9	2	9	9	241

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)
				PG	PhD		Journal	Others			
							11	7.94	747		
20.	Dr. R. Ebneezer Baburajan * Associate Professor	19	Heterosis Breeding, Resistance Breeding	6	-	34	19	4	3	1	36
21.	Dr. R. Eswaran ** Assistant Professor	19	Heterosis Breeding, Molecular Breeding	12	-	63	22	5	13	15	503
22.	Dr. C. Praveen Sampath Kumar ** Assistant Professor	18	Heterosis Breeding in Bhendi	10	-	73	19	3	8	7	188
23.	Dr. J.L. Joshi ** Assistant Professor	16	Heterosis Breeding in Bhendi	8	-	43	11	2	2	1	31
24.	Dr. R. Anandan # Assistant Professor	16	Plant Molecular Biology and Biotechnology	8	-	33	5	1	8	6	224
25.	Dr. K.R. Saravanan ** Assistant Professor	16	Screening genotypes for saline Ecosystem	12	-	72	21	4	5	1	58
26.	Dr. S. Vennila *© Assistant Professor	16	Mutation Breeding, Cytogenetics	8	-	43	27	5	5	3	75
27.	Dr. S. Suganthi *© Assistant Professor	16	Recombination Breeding, Crop Diversity Analysis	8	-	41	26	4	5	3	105

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)
				PG	PhD		Journal	Others			
							11	7.94	747		
28	Dr. S. RanjithRajaram *© Assistant Professor	14	Rice and Sesame Breeding	8	-	31	24	3	5	2	72
29.	Dr. A. Kamaraj © Assistant Professor	13	Pre sowing seed enhancement treatment, Seed testing	7	-	34	18	2	3	2	58
30.	Dr. P. Satheesh Kumar *© Assistant Professor	13	Heterosis Breeding, Mutation Breeding.	7	-	50	18	4	6	4	160
31.	Mr. V. Arivoli * Assistant Professor	12	Recombination Breeding	-	-	0	-	-	-	-	-
32.	Dr. R. Narayanan *© Assistant Professor	12	Recombination breeding, Mutation Breeding	7	-	15	8	2	2	1	23

\* - Genetics and Plant Breeding, ©- Seed Science and Technology, # - Molecular Biology and Biotechnology

## List of Project Handled - Last five years

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
1.	Screening Bhendi genotypes ( <i>Abelmoschus esculentus</i> (L.) moench) (rice fallow) for resistance to yellow vein mosaic virus disease combined with high yield Suitable for Coastal Ecosystem.	N. Senthil Kumar	2013-2017	UGC	15.42
2.	Exploitation of medicinal herbs to alleviate moisture stress and enhancing yield potential in sesame ( <i>Sesamum indicum</i> L) under rainfed condition through molecular approach	Dr. G. Sathiya Narayanan Dr. B. Sunil Kumar Dr. R. Anandan	2013-2017	UGC	7.95
3.	DST -FIST	Dr. S. Murugan	2013-2018	DST	38.00
4.	Development of stress tolerance varieties for coastal regions of TamilNadu in mandate crops (UGC SAP DRS Phase II)	Dr. M. Prakash Dr.S.Murugan	2015-2020	UGC	102.50
5.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic back ground of Black gram ( <i>Vignamungo</i> (L.)	Dr. S. Murugan Dr. M. Prakash Dr. R. Anandan Dr. J. Gokulakrishnan	2016 -2017	UGC	1.25
6.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic backgrounds of blackgram ( <i>Vignamungo</i> L.) (DST PURSE Phase II)	Dr. S. Murugan	2018-2021	DST-PURSE	5.00

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
7.	Green Super Rice for TamilNadu: Assessing multiple abiotic and biotic stress tolerance and yield potency under varying environment for sustaining production and ensuring nutritional integrity	Dr. R. Elangaimannan Dr. K. Saravanan Dr. T. Sabesan Dr. B. Sunilkumar Dr. S. Murugan	2021-2023	RUSA	10.00
8.	Technology development for biofortification through micronutrients and bioactive compounds for protection and enhancement of human health in coastal ecosystem	Dr. Elayaraja Dr. N. Senthilkumar	2022-2024	RUSA	10.13
<b>TOTAL (A)</b>					<b>190.25</b>
<b>Private Sector Projects</b>					
Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
1.	Efficacy trials with Modulin on the expression ,growth ,development and yield of rice crop	Dr. G. Barathan Dr. S. Murugan	2016-2017	T-Stanes and company Ltd.,Coimbatore	2.10
2.	Evaluation of Methyl violet Dye in the formulation of Carboxin 37.5% +Thiram 37.5% WS on groundnut.	Dr. T. Sabesan	2018 - 2019	Arysta Life Science, Mumbai	0.91
3.	Digitalization of data on Crop cultivation practices of major Agricultural and Horticultural crops	Dr. S. Murugan	2018-2019	Bayer crop Science	1.00
<b>TOTAL (B)</b>					<b>4.01</b>
<b>TOTAL A+B</b>					<b>194.26</b>

**Awards/Recognitions/States & Countries visited by Faculty**

Sl. No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
1	Dr.S.Murugan	Visiting Professor, North Carolina State University (2017) Fellow of Indian Society of Genetics and Plant Breeding, New Delhi	U.S.A , Water melon and cucumber breeding, North Carolina State University, U.S.A
2	Dr. G. Sathyanarayanan	Excellence in Research Award (2017)	S & T SIRI, Telangana
3	Dr. M. Prakash	Best research publications award, 2012-2017. J JChinoy Gold Medal Award- Indian Society of Plant Physiology, 2017. Fellow - Indian Society of Plant Physiology, New Delhi, 2015. (FISPP). Fellow - National Academy of Biological Sciences, Chennai. 2016 (FNABS).	
4	Dr.S.Thirugnanakumar	Fellow of Indian Society of Oil Seed Research, Fellow of HIND AGRI-HORT Society. ICAR Citation for best Thesis award 2007 Dr.Kannaiyan endowment - Best researcher award -2018	
5	Dr.R. Anandan	Best oral presentation award (2017)	National Conference on Innovations in Biotechnology at Madurai Kamaraj University during 14 <sup>th</sup> & 15 <sup>th</sup> Dec., 2017.
6	Dr. T. Sabesan	Editorial Board Member (2017 onwards)	Journal of Innovative Agriculture (eISSN: 2394-5389)
7	Dr. R.Eswaran	Summer course on “Modern Breeding Techniques for the Improvement of leguminous plants” (2017).	Institute of plant biotechnology for developing countries , Ghent University , Belgium
8	Dr. K.R. Saravanan	Scientist of the year award (2018)	ICFA, Jharkand
9	Dr. K.R. Saravanan	Outstanding Breeder Award (2019)	PRAGATI, Jharkand
10	Dr. S. Murugan	Member, Panel of Examiners, TamilNadu Public Service Commission (TNPSC) ( 2019)	

Sl. No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
11	Dr. T. Sabesan	Confidential work at TamilNadu Public Service Commission (TNPSC), Chennai (2019)	(TNPSC), Chennai
12	Dr. M. Venkatesan	Best Oral Presentation award (2019)	University of Hyderabad
13	Dr. S. RanjithRajaram	Best Oral Presentation (2019)	PRAGATI, Jharkhand
14	Dr.T.Sabesan	Best paper Award (First Place) in the session Genetics (2020)	In the 6 <sup>th</sup> National Conference in Agricultural Scientific Tamil held International Institute of Tamil Studies, Chennai during Dec 21-22, 2020.
15	Dr.B. SunilKumar	Outstanding Scientist Award (2018)	Conferred by the Society of Tropical Agriculture, New Delhi
16	Dr. G. Sathyanarayanan	Best Researcher Award (2020)	ICEACBS, Puducherry
17	Dr. M. Venkatesan	Best Scientist Award (2020)	ICEAACBS, Puducherry
18	Dr. S. Thirugnanakumar	Editorial member for the journal "Advances in Plant Sciences"	
19	Dr. T. Sabesan	Reviewer Excellence Certificate (2020)	<i>ActaEcologicaSinica</i> (Elsevier), Agricultural Science Digest (ARCC)
22	Dr. S. RanjithRajaram	Academic Excellence Award (2021)	Institute of Researchers, Wayanad, Kerala
23	Dr. M. Venkatesan	Best Teacher Award (2021)	Global Management Council, Ahmadabad
24	Dr. Y. Anbuselvam	Reviewer Excellence Award (2021)	ARCC Journal
25	Dr. T. Sabesan	Excellence in Reviewing (2022)	International Journal of Plant & Soil Science
26.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Asian Journal of Biotechnology and Genetic Engineering
27.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Current Journal of Applied Science and Technology
28.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	International Journal of Environment

Sl. No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
			and Climate Change
29.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	Annual Research and Review in Biology
30.	Dr. S. Vennila	Best Oral Presentation (2018)	Dept. of Genetics and Plant Breeding, Faculty of Agriculture, Annamalai University
31.	Dr. S. Vennila	Best Oral Presentation (2020)	Dept. of Plant Pathology, Faculty of Agriculture, Annamalai University
32.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University
33.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Agrl. Extention, Faculty of Agriculture, Annamalai University
34.	Dr. G. Sathiyarayanan	Best Poster Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University

### 6.4.3. Technical and Supporting staff

The technical and supporting staff of the Department of Genetics and Plant Breeding is given below

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
1.	Assistant*	4	4	-	1
2.	Lab assistant*	4	4	-	2
3.	Field assistant*	5	5	-	2
	<b>Total</b>	<b>13</b>	<b>13</b>	<b>-</b>	<b>5</b>

S. No.	Sanctioned post	Staff in place	Responsibilities
1.	Supporting Staff*	4	<ul style="list-style-type: none"> <li>• Assisting in Data processing and documentation.</li> <li>• Maintenance of office files and official records.</li> <li>• Execution of purchase and settlement of bills.</li> <li>• PG and Ph.D admissions work</li> <li>• UG, PG and Ph.D Examination works</li> <li>• Computer typing works.</li> </ul>
2.	Technical Staff* (Department)	4	<ul style="list-style-type: none"> <li>• Assisting laboratory classes.</li> <li>• Supervision of labourers</li> <li>• Maintenance of stock registers.</li> </ul>
3.	Technical Staff* (Research)	3	<ul style="list-style-type: none"> <li>• Layout of field trials.</li> <li>• Supervision of labourers</li> <li>• Maintenance of stock registers.</li> </ul>
4.	Field Staff*	2	<ul style="list-style-type: none"> <li>• Layout of field trials.</li> <li>• Recording of research trial observations.</li> </ul>

\*Assigned responsibilities for multiple programmes

#### 6.4.4. Classrooms and Laboratories

Sl.No.	Abstract of Facilities	Numbers
1.	HOD Room	1
2.	Office Room	1
3.	Staff Rooms	5
4.	UG Laboratories	3
5.	PG Lecture Halls	3
6.	Ph.D. Lecture Halls	3
7.	Field Demonstration Hall	1
8.	PG & Ph.D. Laboratories	5
9.	Department Library	1
10.	Hi-Tech Hall	1
11.	Pot Culture Yard	3
12.	Plant Breeding Experimental Farm (Field No. 13,14,15 & 16)	4

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
1.	HOD Room	1	(15x9.7) 145.5	1	-
2.	Office Room	1	(16x9.7) 155.2	3	-
3.	Staff Room-1	1	(17.8x9.2) 163.76	2	-
4.	Staff Room-2	1	(17.8x9.2) 163.76	3	-
5.	Staff Room-3	1	(17.8x9.2) 163.76	3	-
6.	Staff Room-4	1	(17.8x9.2) 163.76	3	-
7.	Staff Room-5	1	(31.5x19.4) 611.1	13	-
8.	UG Laboratory-1	1	(30x36.2) 1086.75	50	OHP projector, LCD television, monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
9.	UG Laboratory-2	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
10.	UG Laboratory-3	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
11.	PG Lecture Hall (Genetics & Plant Breeding)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like LCD projector and Smart TV.
12.	PG Lecture Hall (Seed Science & Technology)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like Smart TV

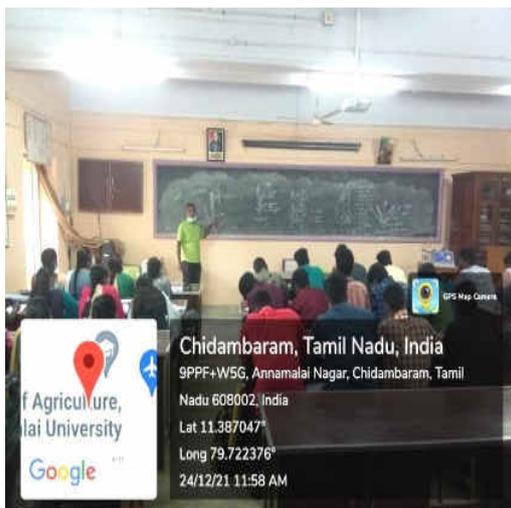
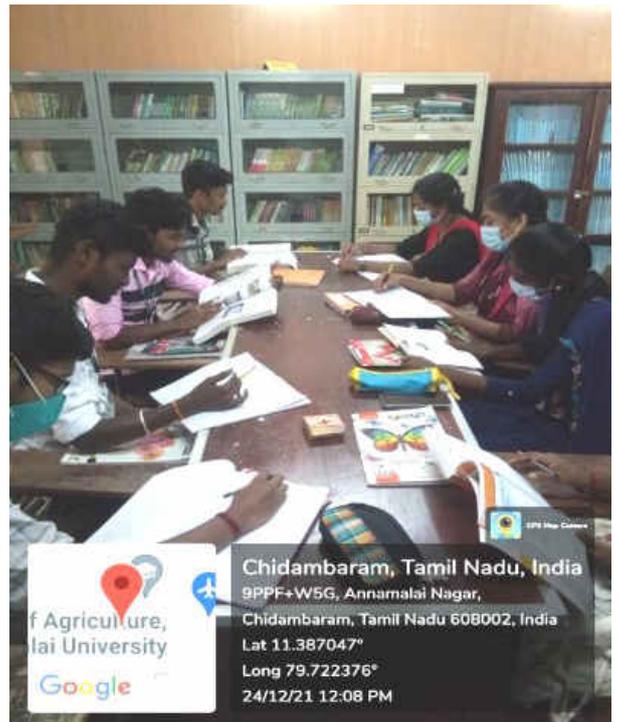
Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
13.	PG Lecture Hall (Molecular Biology & Biotechnology)	1	(30x12.73) 381.98	10	Smart class rooms are available with facilities like LCD projector (Smart board) and Smart TV
14.	Ph.D. Lecture Hall (Genetics & Plant Breeding)	1	(19.8x11) 220	10	Class rooms are available with Smart TV facility.
15.	Ph.D. Lecture Hall (Seed Science & Technology)	1	(19.8x11.6) 229.6	10	Class rooms are available with Smart TV facility.
16.	Ph.D. Lecture Hall (Molecular Biology & Biotechnology)	1	(17.8x9.2) 163.7	6	Class rooms are available with Smart TV facility.
17.	Field Demonstration Hall	1	(30x20) 600	30	For Practical classes
18.	Cytology & Cytogenetics Laboratory	1	(26.5x20) 530	20	The laboratory is equipped with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber).
19.	Seed technology Laboratory	2	(15x6.2) + (15x6.2) 94+94	5+5	The laboratory is equipped with seed technological instruments like seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
20.	Plant Tissue culture Laboratory	1	(10x8) 80	5	Plant tissue culture laboratory is equipped with laminar air flow chamber, autoclave and incubator, mini thermo cycler, electronic weighing balance, gel documentation chamber.
21.	Molecular Biology Laboratory	1	(30x11.3) 339	7	Molecular biology laboratory is equipped with major instruments like BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-8 transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge
22.	Department Library	1	(30x22) 660	25	The Department Library is provisioned with 612 text and reference books, PG and Ph.D. thesis, National and International journals, conference proceedings and volumes, 20 project reports.
23.	Dr. C.N.Sambandam Hi-Tech Hall	1	(30x22) 660	50	Hi-Tech presentation hall
24.	Pot Culture Yard-GPB	1	0.03 ha	-	To conduct preliminary evaluation trials and seed multiplication.
25.	Pot Culture Yard-SST	1	0.03 ha	-	To conduct preliminary trials and germination studies.
26.	Pot Culture Yard-PMBB	1	0.03 ha	-	For hardening and to conduct preliminary trials.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
27.	Plant Breeding Experimental Farm-Field no.13	1	0.73 ha.	-	Conducting trials for post graduate students and AICRIP trials
28.	Plant Breeding Experimental Farm-Field no.14	1	0.58 ha.	-	Conducting trials for post graduate students and AICRIP trials
29.	Plant Breeding Experimental Farm-Field no.15	1	0.80 ha.	-	Conducting trials for post graduate students and AICRIP trials
30.	Plant Breeding Experimental Farm-Field no.16	1	0.69 ha.	-	Conducting trials for post graduate students and AICRIP trials

**Instrument Facilities:**

S.No	Items	Nos.
1.	Dissection Microscope	46
2.	Compound Microscope	10
3.	Electronic Moisture Meter	2
4.	Electronic Balance	4
5.	Seed Germinator	2
6.	Automatic seed / Grain counter	1
7.	Hot air Oven	1
8.	BOD Incubator	1
9.	Fluorescence Microscope	1
10.	Centrifuge	3
11.	Growth Chamber	2
12.	Distillation Assembly	1
13.	PCR	3
14.	Gel document	2
15.	P <sup>H</sup> meter	2
16.	Orbital Shaker	1
17.	Photo synthetic meter	1
18.	Water Potential meter	1
19.	Electrophoresis	4
20.	Deep Freezer	3
21.	Refrigerator	2
22.	UV Nano spectrophotometer	1
23.	Sequencing Gel apparatus	1
24.	Ultra sonicator	1
25.	Desiccator	1
26.	Laminar Airflow chamber	2
27.	Autoclave	1
28.	Micro Air oven	2
29.	Water Bath	2
30.	Vaccum emasculator	1
31.	Triers	4
32.	Seed - Dividers	3
33.	Seed Blower	1
34.	Purity Working Board	4
35.	Seed Pelleting machine	1



Hands on Training on Molecular Biotechnology (HTMB) 10 – 14, August 2017

#### 6.4.5. Conduct of Practicals and Hands-on-Trainings

Course	Practicals / Hands-on training	Laboratory / Field Visits
Principles of Genetics	Study of various types of microscopes.	Visit to Central Instrumentation Laboratory of Annamalai University for exposure about Electron Microscopy, SEM, TEM etc.
	Fixing specimen for cytology works.	Visit to Cytology Laboratory, Department of Botany, Annamalai University.
	Stages of cell division in onion and rice.	Experimental designs for breeding trials. They are taught to practice Cytogenetic Techniques and technical knowhow on the research methodology followed.
	Study of chromosome structure	The students have been trained in microscopy and dissection of plant specimens. Students are also encouraged to attend National and International seminars and symposiums.
Principles of Plant Breeding	Exposure about various pollination systems in crop plants	Hands on training imparted to students on the basic tools of plant breeding.
	Emasculation and pollination techniques in field & horticultural crops.	Students are also taken to research stations like TRRI, Aduthurai Horticultural Research Station, Palur, for direct exposure to basics of variety development programmes.
	Hybrid seed production techniques.	
	Screening methods – laboratory and field – for biotic and abiotic stresses.	
Breeding of Crops	. Exposure about importance of anthesis time.	Students are also taken to different research stations like TRRI, Aduthurai, RRS, Virudachalam, SBI, Cuddalore, Horticultural Research Station, Palur, ORS, Tindivanam etc. and Rasi Seeds Pvt Ltd, Salem for direct exposure to variety development programmes.
	Types of isolation and its impact.	
	Emasculation and crossing techniques in major field and horticultural crops	
Quantitative Genetics	Experimental designs for breeding trials.	Hands-on data analysis using software's like AGRES, GENRES, NPRC-STAT, IRRI-STAT, STAR, PBTools, SPSS, Windo-Stat, Dr. S. Thirugnanakumar-STAT
	Data analysis using various softwares.	

Biotechnology For Crop Improvement	Preparation of buffers, reagents, media etc.,	Students are being taught with basic analytical chemistry and knowhow regarding normality, molarity, equivalent weight, and molarity for preparations of buffers / reagents / media / plant growth regulators which are frequently used in several molecular biology techniques
	Extraction of DNA	Students are given hands on experience in DNA extraction of Rice, blackgram, sesame and banana by following CTAB method
	Gel electrophoresis & autoradiography	Students are trained on agarose gel electrophoresis and autoradiography for DNA extracted from plants
	Agrobacterium-mediated & direct gene transfer	Students are demonstrated with gene gun and <i>Agrobacterium</i> mediated transformation using <i>cry1ACF</i> gene
Germplasm collection, exchange	Wild species of various crops.	Students were exposed about the necessity and use of germplasm collections. Visit to <i>in vivo</i> crop gene banks maintained by progressive farmers.
	Plant genetic resources.	Study tours. Role of National/International agencies and the need of SMTA.
Crop Physiology	Growth Parameters	Practicals on various physiological growth parameters such as RGR, LAI, NAR.
	Photosynthesis and respiration	Use of LiCOR Portable Photosynthetic Meter.
	Cycles of growth	Animations
Research	Breeding for high yield, abiotic/biotic stress tolerance and quality characters in crops like rice, blackgram, greengram, brinjal, sesame, bhendi, cotton, chillies etc	Collection of germplasm from NBPGR, New Delhi, IIHR, Bangalore, RRS, Dr. S. Thirugnanakumar SAUs, and progressive farmers etc.

### Study Tours / Industrial Visits

Students are also taken to different research stations like

Sl. No.	Place of Visit	Year
1	Kerala Agricultural University	2022
2	CTCRI Kerala	2017, 2022
3	Rajiv Gandhi Center for Biotechnology and Botanical Garden, Trivendrum, Kerala	2017, 2022
4	Dr. S. Thirugnanakumar, Coimbatore,	2022
5	Central Instrumentation Laboratory, Annamalai University	2017, 2018, 2022
6	NRCB, Trichy,	2022
7	IICPT, Tanjore,	2017, 2018,
8	Rasi seeds,	2022
9	Maha seeds.	2022
10	Plant Quarantine Centre, Trichy,	2022
11	Indian Institute of Pulse Research, Vamban,	2022
12	Regional Research Station, Aduthurai,	2017, 2022
13	State Seed Farm, Vandrayanpattu,	2022
14	KVK, Pondicherry	2022
15	PAJANCOA, Karaikal.	2017, 2018, 2022



**Crossing block - Samba 2021**



#### 6.4.6. Supervision of students in PG programme

Each Post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise a Major Adviser (Chairman) and two members. Out of the two members, one will be from the same Department of Faculty of Agriculture and the other in the related field from the other Departments of Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The chairman in consultation with the Head of the Department will nominate the other two members. The Duties of advisory committee is as follows:

1. Guiding students in drawing the outline of research work.
2. Guidance throughout the programme of study of the students.
3. Evaluation of research and seminar credits.
4. Correction and finalization of thesis draft.
5. Conduct of qualifying and final Viva-Voce examination.
6. The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
7. Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.
8. Mentor - Mentee

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.



Sl. No.	Name of Faculty / Scientist	Whether qualify for supervision of PG Programme ?	Whether qualify for supervision of Ph.D. Programme?	Name of students Guided	Degree Programme	Year of submission	Title of thesis
<b>2017-2018</b>							
1	Dr. S. RanjithRajaram	Yes	Yes	Anju,R	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Line x Tester mating design analysis for yield and related yield traits in Rice ( <i>Oryza sativa</i> L.)
2	Dr. P. Satheesh Kumar	Yes	Yes	ChinnathambiPonRenuka Devi	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on combining ability for grain yield and yield component traits in Rice ( <i>Oryza sativa</i> L.)
3	Dr. R. Narayanan	Yes	Yes	Karthikeyan, M	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Stability studies for salt tolerances their economic characters in Rice ( <i>Oryza sativa</i> L.)
4	Dr. S. Murugan	Yes	Yes	Karthikeyan, R	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Genetic analysis of blackgram under yellow mosaic virus (YMV) hotspot region.
5	Dr. S. Thirugnanakumar	Yes	Yes	Kirubhakaran, S.R	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Competing ability and combining ability in Rice
6	Dr. P. Senthil Kumar	Yes	Yes	Loganayagi, U	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on some important genetic parameters under coastal ecosystem in bhendi ( <i>Abelmoschus esulentus</i> L.)
7	Dr. Y. Anbuselvam	Yes	Yes	Maddi. Siva Kumar	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Triple test cross analysis in rice ( <i>Oryza sativa</i> . L)
8	Dr. P. Thangavel	Yes	Yes	Manivelan, K	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Combining ability studies in greengram
9	Dr. K. Saravanan	Yes	Yes	Mohanlal, V.A	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on genetic divergence in blackgram ( <i>Vigna mungo</i> (L.) hepper)
10	Dr. N. Senthil Kumar	Yes	Yes	Mudhalvan, S	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Combining ability and heterosis in Bhendi ( <i>Abelmosculms esculantes</i> )
11	Dr. Y. AnithaVasline	Yes	Yes	Nagalakshmi, A	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on genetics of certain quantitative characters in rice ( <i>Oryza</i>

							<i>sativa</i> L.)
12	Dr. J. Gokulakrishnan	Yes	Yes	Nirmal Raj, R	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on stability analysis in maize hybrids ( <i>Zea mays</i> L.)
13	Dr. R. Elangaimannan	Yes	Yes	Raghavi, G	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on combining ability in chester bean
14	Dr. B. Sunil Kumar	Yes	Yes	Saravanan, T	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on salinity stress and its growth in Mungbean
15	Dr. T. Sabesan	Yes	Yes	Sirapurapu Sri Vidya	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on heterosis and combining ability in Rice ( <i>Oryza sativa</i> L.)
16	Dr. R. Eswaran	Yes	Yes	Sridhar, V	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Drought tolerance in rice
17	Dr. R. Ebenezer BabuRajan	Yes	Yes	Subbulakshmi, M	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on heterosis and combining ability in Rice ( <i>Oryza sativa</i> L.)
18	Dr. V. Anbanandan	Yes	Yes	Syed Azmath	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on combining ability and heterosis in Rice
19	Dr. C. Praveen Sampath Kumar	Yes	Yes	TamilMathi, T	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Partial dialed analysis in bhendi
20	Dr. M. Venkatesan	Yes	Yes	Thilagavathi, T	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Genetic divergence in rice ( <i>Oryza sativa</i> L.) under natural saline condition.
21	Dr. P. Karthikeyan	Yes	Yes	Varadharajan, A	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on genetic divergence for certain morphological characters in rice ( <i>Oryza sativa</i> L.)
22	Dr. K. Palaniraja	Yes	Yes	VennapusaRamanjaneya Reddy	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on genetics of certain quantitative traits in Rice ( <i>Oryza sativa</i> L.)
23	Dr. J.L. Joshi	Yes	Yes	Vinoth Kumar, M	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Studies on combining ability heterosis in rice using diallel analysis
24	Dr. K.R. Saravanan	Yes	Yes	Yogini, D	M.Sc.(Ag.) Genetics and Plant Breeding	2018	Combining ability and heterosis for earliness and yield contributing characters inBhendi ( <i>Abelmoschuseculentus</i> )

2018-2019							
1	Dr. S. Vennila	Yes	Yes	Aarthi, M	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on genetic diversity of certain biometric traits in rice ( <i>O.sativa</i> L.) genotypes under natural saline condition
2	Dr. S. Suganthi	Yes	Yes	Abdigafar Ahmed Jimale Mohamed	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on combining ability and reterosis estimates in sesame ( <i>Sesamumindicum</i> ) through diallel analysis)
3	Dr. S. RanjithRajaram	Yes	Yes	Amarnath, T	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on combining ability and heterosis estimation in sesame ( <i>Sesamumindicum</i> ) through LxT analysis
4	Dr. P. Satheesh Kumar	Yes	Yes	Anusuyadevi, K	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on combining ability and heterosis in bhendi ( <i>Abelmoschuseculentus</i> L. moench) Line x Tester analysis
5	Dr. R. Narayanan	Yes	Yes	Arunkumar, P	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on abiotic stress (saline) tolerance in rice ( <i>Oryza sativa</i> L.) cultivars veing molecular markers RAPD
6	Dr. S. Murugan	Yes	Yes	DivyaBharathi, V	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on molecular validation of YMV resistance in green gram genotypes
7	Dr. S. Thirugnanakumar	Yes	Yes	Harikrishnan, M	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on genetic diversity in medium duration rice genotypes
8	Dr. P. Senthil Kumar	Yes	Yes	James, M	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on genetics of certain biometrics characters in maize
9	Dr. Y. Anbuselvam	Yes	Yes	Kayathri, S	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Molecular study of segregating generation in rice
10	Dr. P. Thangavel	Yes	Yes	Madhubala, R	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on Line x Tester analysis in bhendi
11	Dr. K. Saravanan	Yes	Yes	Madhumathi, A	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on combining ability and heterosis through diallel analysis in

							bhendi ( <i>Ablesmenusesculentis</i> (L.) moench)
12	Dr. N. Senthil Kumar	Yes	Yes	Ponsiva, S.T	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on genetic diversity in rice
13	Dr. Y. AnithaVasline	Yes	Yes	Praveena, P	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on combining ability and 17eterosis through diallel analysis in bhendi
14	Dr. J. Gokulakrishnan	Yes	Yes	Priya, B	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Genetic variability combining ability studies for yield & yield contribution traits in maize
15	Dr. R. Elangaimannan	Yes	Yes	Priyanka, K	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on heat responsive protein in rice ( <i>Oryza sativa</i> L.) genotypes for changing climatic scenario
16	Dr. B. Sunil Kumar	Yes	Yes	Pugahendhi, N	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Effect of salinity stress on quantitative and biophysical characters in mungbean ( <i>Vigna radiate</i> )
17	Dr. T. Sabesan	Yes	Yes	Sathyaraj, D	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on Genetic divergence in finger millet ( <i>Elucincoracan</i> )
18	Dr. R. Eswaran	Yes	Yes	Silambarasan, V	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Variability studies in brinjal
19	Dr. R. EbenezerBabuRajan	Yes	Yes	Sivaranjani, P	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Study on combining ability and heterosis in bhendi ( <i>Abelmaschusesculentus</i> ) LxT analysis.
20	Dr. V. Anbanandan	Yes	Yes	Sofiya, M	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Genetic diversity in brinjal for fruit and shoot bever
21	Dr. C. Praveen Sampath Kumar	Yes	Yes	Sudhir Deepak, M	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on genetic diversity in rice ( <i>Oryza sativa</i> )
22	Dr. M. Venkatesan	Yes	Yes	Suganthi, S	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Line x Tester analysis in rice ( <i>Oryza sativa</i> . L)
23	Dr. P. Karthikeyan	Yes	Yes	Suganya, G	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on the heterosis and combining ability in rice ( <i>Oryza sativa</i> . L)

24	Dr. K. Palaniraja	Yes	Yes	Sumithra, V	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Studies on genetic diversity and gene action for certain economic characters in rice under coastal saline condition
25	Dr. J.L. Joshi	Yes	Yes	Surya, T	M.Sc.(Ag.) Genetics and Plant Breeding	2019	Biparantal mating in bhendi
<b>2019-2020</b>							
1	Dr. K.R. Saravanan	Yes	Yes	Abinaya, S	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on genetic analysis in rice for yield and yield contributing traits
2	Dr. S. Vennila	Yes	Yes	Balakrishnan, T	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on gene action and heterosis in cotton (g.hirsution) through Line x Tester Analysis
3	Dr. S. Suganthi	Yes	Yes	BenilinThangaJebitha, W	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on genetic characters in rice ( <i>Oryza sativa</i> )
4	Dr. S. RanjithRajaram	Yes	Yes	DhivyaBarathi, G	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on combining ability and heterosis in a diallelcross of bhendi ( <i>Abolmoschulesculentus</i> )
5	Dr. P. Satheesh Kumar	Yes	Yes	Elakkiya, S	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on combining ability and heterosis in a dialed cross of bhendi ( <i>Abolmoschulesculentus</i> )
6	Dr. R. Narayanan	Yes	Yes	Evangeline G,	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Heterosis breeding in cotton & Molecular diversity analysis for biotic & abiotic stress tolerance
7	Dr. S. Murugan	Yes	Yes	Sankar, J	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Molecular marker assisted breeding for biotic stressed in blackgram
8	Dr. S. Thirugnanakumar	Yes	Yes	Ezhilmathi, M	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on induced micro-mutations in rice ( <i>Oryza sativa</i> L.)
9	Dr. P. Senthil Kumar	Yes	Yes	Fidel Castro, R.S.	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on genetics certain traits in sesame ( <i>Sesamumindicum</i> L.)
10	Dr. Y. Anbuselvam	Yes	Yes	Keerthana, S	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Genetic studies on certain traits in rice
11	Dr. P. Thangavel	Yes	Yes	Madhumitha, Y	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Line x Tester analysis in Bhendi
12	Dr. K. Saravanan	Yes	Yes	Merlin Nisha, J	M.Sc.(Ag.) Genetics	2020	Studies on stability analysis in rice

					and Plant Breeding		( <i>Oryza sativa</i> L.)
13	Dr. N. Senthil Kumar	Yes	Yes	Prathinlekha, M	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on combining ability and heterosis in Bhendi
14	Dr. Y. AnithaVasline	Yes	Yes	Priyadharshini, R	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on genetics of certain quantitative traits in bhendi ( <i>Abolmoschulesculentus</i> )
15	Dr. J. Gokulakrishnan	Yes	Yes	Sanyo Sara, G	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on genetic divergence analysis in pearl millet
16	Dr. R. Elangaimannan	Yes	Yes	Savitha, D	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Line x Tester analysis to estimate combining ability and gene action for yield and its components in rice
17	Dr. B. Sunil Kumar	Yes	Yes	SowmiyaSelvanaya gi, C	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Phinolyning of dragnet characterits in Mungbean ( <i>vigna radiate</i> (L) wilkines) its validation using SS marker)
18	Dr. T. Sabesan	Yes	Yes	Srimathi, K	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on genetic diversity and stability analysis in rice
19	Dr. R. Eswaran	Yes	Yes	Susmitha, J	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Evaluation of brinjalgermplasm for fruit borer resistance
20	Dr. R. Ebenezer BabuRajan	Yes	Yes	Thendral Devi, S	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on heterosis and combining ability yield and yield contributing traits in blackgram ( <i>vignamungo</i> )
21	Dr. V. Anbanandan	Yes	Yes	Vanivaidegi, S	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Evaluation of brinjalgermplasm for fruit borer resistance
22	Dr. C. Praveen Sampath Kumar	Yes	Yes	Vignesh, S	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Screening of bleck gram genotypes for salinity tolerant using microsaleling markers
23	Dr. M. Venkatesan	Yes	Yes	Vinothkumar, G	M.Sc.(Ag.) Genetics and Plant Breeding	2020	Studies on combining ability and heterosis in Bhendi for YMV ( <i>Abolmoschulesculentus</i> )
24	Dr. P. Karthikeyan	Yes	Yes	Yuvarani, R	M.Sc.(Ag.) Genetics	2020	Studies on genetic divergence in rice

2020 – 2021							
1	Dr. S. Vennila	Yes	Yes	Aadharshya Ram, U.K	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on genetic diversity and gene action of certain biometric traits in rice ( <i>Oryza sativa</i> L.) under coastal saline environment
2	Dr. J.L. Joshi	Yes	Yes	Anushya, R	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Characterisation of rice ( <i>Oryza sativa</i> L.) genotypes for lodging resistance and validation through SSR marker
3	Dr. K.R. Saravanan	Yes	Yes	Arivin, M	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on linkage and crossing over in Blackgram ( <i>Vignamungo</i> . L) with reference to YMV resistance
4	Dr. S. Vennila	Yes	Yes	Balasubramanian, M	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on gene action and heterosis in traditional rice ( <i>Oryza sativa</i> L.) varieties.
5	Dr. S. Suganthi	Yes	Yes	Bharathraj, S	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Assessment of genetic diversity for salinity tolerance using SSR/ Microsatellite markers
6	Dr. S. RanjithRajaram	Yes	Yes	Praveenkumar, S	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on gene action and combining ability analysis for yield and its component traits in blackgram ( <i>Vignamungo</i> L.)
7	Dr. P. Satheesh Kumar	Yes	Yes	Hemadeepika, A	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on genetic diversity variability and association analysis in rice ( <i>Oryza sativa</i> L.) genotypes
8	Dr. R. Narayanan	Yes	Yes	Jerish, J.R	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on physiological biochemical & molecular analysis in rice ( <i>Oryza sativa</i> L.) genotypes for abiotic stress tolerance screening
9	Dr. P. Senthil Kumar	Yes	Yes	Keerthana, S	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on genetics of certain traits of rice ( <i>Oryza sativa</i> ) and molecular characterization

10	Dr. S. Murugan	Yes	Yes	Keerthika, C	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Assessment of genetic diversity for bruchid resistance in blackgram
11	Dr. S. Thirugnanakumar	Yes	Yes	Kiruthika, R	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on induced chemical mutagenesis in rice ( <i>Oryza sativa</i> L.) – M <sub>3</sub> and M <sub>4</sub> generations
12	Dr. Y. Anbuselvam	Yes	Yes	Surendhar, M	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Characteriation and validation of rice ( <i>Oryza sativa</i> L.) Genotypes for BLB & blast resistance through SSR markers
13	Dr. P. Thangavel	Yes	Yes	Nishanthi, M	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Line x Tester analysis in forage sorghum ( <i>Sorghum bicolor</i> )
14	Dr. K. Saravanan	Yes	Yes	Devadharssini, O.K	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on stability analysis in rice ( <i>Oryza sativa</i> L.)
15	Dr. N. Senthil Kumar	Yes	Yes	RajkapurHartiabines araj, APT	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on genetic diversity in rice ( <i>Oryza sativa</i> L.)
16	Dr. Y. AnithaVasline	Yes	Yes	Renuka Devi, P	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on genetic divergene analysis in blackgram genotypes ( <i>Vignamungo</i> (L) Hepper)
17	Dr. B. Sunil Kumar	Yes	Yes	Revathi, R	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on biometric, bio-physiological and biochemical characters in Sorghum
18	Dr. J. Gokulakrishnan	Yes	Yes	Saranya, K	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Stability analysis in chillies ( <i>capisiacm annum</i> )
19	Dr. R. Elangaimannan	Yes	Yes	Selvamani, S	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on genetics of Earliness, Drought and yield parameters of traditional and modern rice cultivates.
20	Dr. T. Sabesan	Yes	Yes	Sowmia, K	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies of stability analysis in rice under coastal saline eco system
21	Dr. V. Anbanandan	Yes	Yes	Sumiya, K.J	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on genetic diversity in rice genotypes
22	Dr. P. Karthikeyan	Yes	Yes	Monisha, A	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Genetic improvement of barnyard millet through mutation breeding

23	Dr. M. Venkatesan	Yes	Yes	Thanigaiselvi, D	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on Line x Tester analysis in Bhendi
24	Dr. R. Ebneezer Baburajan	Yes	Yes	Thanuja, P	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Studies on heterosis and combining ability in brinjal ( <i>Solanum melongina</i> L.)
25	Dr. R. Eswaran	Yes	Yes	Thivyavarshini, M	M.Sc.(Ag.) Genetics and Plant Breeding	2021	Genetic divergence studies in sesame
<b>2021 – 2022</b>							
1	Dr. C. Praveen Sampath Kumar	Yes	Yes	ARIHARASUDAN, A	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on genetic divergence and variability in traditional rice ( <i>Oryza sativa</i> L.) Genotypes
2	Dr. J.L. Joshi	Yes	Yes	DEEPA DHARSINI, V	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Analysis of genetic divergence in sesame ( <i>Sesamum indicum</i> L.) genotypes using D2 statistics and principal component analysis (PCA)
3	Dr. K.R. Saravanan	Yes	Yes	DEEPTHI TANGUTUR	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on combining ability analysis in chilli in LXT mating design
4	Dr. S. Vennila	Yes	Yes	DESIKA, J	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on multivariate analysis of quantitative and nutritional qualities in rice ( <i>Oryza sativa</i> L.)
5	Dr. S. Suganthi	Yes	Yes	DURGA KEERTHI, G A	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on combining ability and heterosis in Bhendi ( <i>Abelmoschus esculentus</i> (L.) Moench) through Line x Tester analysis for yield and yield contributing traits
6	Dr. S. Ranjith Rajaram	Yes	Yes	ELAKKIYA, R	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on combining ability and heterosis through line x tester analysis in brinjal ( <i>Solanum melongena</i> L.)
7	Dr. P. Satheesh Kumar	Yes	Yes	MAGESH, Y	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on combining ability and Heterosis in Sesame ( <i>Sesame indicum</i> L)
8	Dr. R. Narayanan	Yes	Yes	MAHALAKSHMI, M	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on induced Mutagenesis in Barnyard millet

							( <i>Echinochloafrumentacea</i> ) Co (KV)2 using gamma rays and EMS
9	Dr. S. Thirugnanakumar	Yes	Yes	MOHAMED ADHIL, A	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on genetic variability: Correlation and causation and genetic diversity in rice ( <i>Oryza sativa</i> L.) Genotypes
10	Dr. P. Senthil Kumar	Yes	Yes	PREETHI, M	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on genetic diversity on rice genotypes for saline tolerance using SSR markers
11	Dr. S. Murugan	Yes	Yes	PRIYANKA, S	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Genetic diversity analysis of abiotic stress tolerance in blackgram ( <i>Vignamungo</i> L. Hepper)
12	Dr. Y. Anbuselvam	Yes	Yes	REETH JESSICA, G	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Studies on genetic diversity and variability in rice ( <i>Oryza sativa</i> L.) through phenotypic and molecular assessment under saline situation
13	Dr. P. Thangavel	Yes	Yes	SWETHA, J.R	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Diallel analysis in cotton ( <i>Gossypiumhirsutum</i> L.)
14	Dr. K. Saravanan	Yes	Yes	UDAYA KARTHIKA, S.S	M.Sc.(Ag.) Genetics and Plant Breeding	2022	Study on combining ability analysis and heterosis through Line x Tester analysis in bhendi ( <i>Abelmoschusesculentus</i> (L.) Moench)

**6.4.7. Feedback of stakeholders**

The feedback is obtained for every course at the end of each semester and the consolidated action taken report is presented in the following table.

Sl. No.	Stakeholders	Feedback	Action taken
1	Students	Requested special classes for slow learning students	Remedial classes are taken for slow learners.
2		Asked for free ICAR coaching classes.	Special coaching classes for ICAR and competitive examinations.
3		Expressed the need for air conditioned Seminar Hall with A/V facilities.	Established Hi-Tech seminar Hall with funding from Departmental alumni and contribution from department Faculties.
4		Requested for re-fencing of damaged segments.	Re-fencing Plant Breeding Farm for conduct of various field trials.
5		Asked facility to carry out rapid emasculation in short span of time in rice.	Vacuum emasculator for ease and rapid hybridization in rice.
6		Expressed the need for free access to online journals for research at Department itself.	Provided Wi-Fi INFLIB net / MYLOFT for easy access of journals for research.
7		Requested for more seating capacity and books.	Enhanced Department Library facilities in terms of space and inventory.
8		Asked separate area for preliminary screening.	Partitioning of Pot-Culture Yard for three disciplines of study.
9		Requested smart class room facility.	Smart TVs in classrooms for visual presentation of videos and power points.
10		Expected guidance for their Progression.	“WhatNext?!”-A student oriented guidance programme by Experts was conducted on 2022.

Sl. No.	Stakeholders	Feedback	Action taken
11	Students	Asked for exposure to become an entrepreneur.	<ul style="list-style-type: none"> <li>▪ Industrial Visits were made to several Government and private institutes.</li> <li>▪ Guest Lectures from entrepreneur.</li> </ul>
12		During COVID-19 Pandemic students requested for online classes and research updates.	Online-classes and International Webinars.
13		Placement services	Annual Recruitment of students by Private Sector Seed Companies.
14	Parents	Requested minimal Financial support for their wards.	Rs.2000/- financial aid per student for top ranking 3 students in each discipline of study have been disbursed to students in the last five years from the UGC-SAP.
15.		Expressed concern about the safety and progress of their wards.	<ul style="list-style-type: none"> <li>• Mentor-Mentee system was in place to cater the concern of the students.</li> <li>• Department Faculties also serve as Deputy Wardens in various Hostels.</li> </ul>
16	Farmers	Asked for latest developments and happenings.	PPVFRA Training programme to Farmers
17.		Asked for high yielding/remunerative varieties.	<ul style="list-style-type: none"> <li>▪ Annamalai Musk melon.</li> <li>▪ AU-1.</li> <li>▪ Anamalai-Brinjal.</li> <li>▪ AU -1 GSR Rice variety</li> </ul>
18.	Employers , those who come for campus placements banks, private sector seed companies etc.	Expected skilled and technically sound employable candidates with good communication ability.	<ul style="list-style-type: none"> <li>▪ Industrial Tie-up training arranged at various public/private sector.</li> <li>▪ Personality Development Classes</li> <li>▪ Mock-Interviews</li> <li>▪ Group Discussions and Brain Storming Sessions.</li> </ul>

**6.4.8 Student intake and attrition in the programme for last five years**

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
25	24	25	14	15	-	-	-	-	-

**Performance of PG Students in competitive/ Entrance Exam**

Sl.No.	Academic Year	PhD in ICAR institutes & State SAUs / Overseas	
		Name of the Students	Institutes of Study
1.	2017-18	Sowmiya, C.A.	Tamil Nadu Agricultural University, Coimbatore
2.		Jeeva, G.	Tamil Nadu Agricultural University, Coimbatore
3.		Mudhalvan, S	Tamil Nadu Agricultural University, Coimbatore
4.		Manivelan, K	Tamil Nadu Agricultural University, Coimbatore
5.		Karthikeyan, R	AnnamalaiUniversity
6.		Thirumalai, R	AnnamalaiUniversity
7.	2018-19	Nirmal Raj, R	Pursuing Ph.D. at <b>University of Queensland, Australia with 1.35Crores financial aid.</b>
8.		Subbulakshmi, M	Tamil Nadu Agricultural University, Coimbatore
9.		Yogini, D	Tamil Nadu Agricultural University, Coimbatore
10.	2019-20	Arunkumar,P	AnnamalaiUniversity
11.		James,	ICAR Campus, Manipur
12.		Ponsiva, Dr. S. Thirugnanakumar	AnnamalaiUniversity
13.		Pugazendhi,D	AnnamalaiUniversity
14.		Sathyaraj, D	AnnamalaiUniversity
15.		Sivaranjani, P	AnnamalaiUniversity
16.		Sudhir Deepak	Tamil Nadu Agricultural University
17.		Sumithra, S	Tamil Nadu Agricultural University, Coimbatore

18.	2020-21	Sankar, J	AnnamalaiUniversity
19.		Madumitha, Y	AnnamalaiUniversity
20.		Prathinlekha, M	AnnamalaiUniversity
21.		Priyadarshini, R	AnnamalaiUniversity
22.		Susmitha,J	AnnamalaiUniversity
23.	2021-22	Devadarahini, OP	Tamil Nadu Agricultural University, Coimbatore
24.		Keerthana,	Tamil Nadu Agricultural University, Coimbatore

Sl. No.	Academic Year	NET Qualified Students
1	2017-18	Jeeva,G.
2		Dinesh, R
3	2018-19	NirmalRaj.R,
4	2019-20	Aarthi, M.
5		James, M.
6		Sumithra, V.
7	2020-21	Sruthi, S.R.

#### Employment details of PG Students

Academic year	Number of Students Graduated (PG)	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	24	-	2	-	11	2	15	63
2018-19	25	-	4	-	8	1	13	52
2019-20	24	-	-	-	9	3	12	50
2020-21	25	-	2	-	8	3	13	52
2021-22	14	-	-	-	-	-	-	-

#### 6.4.9. ICT Application in Curricular Delivery

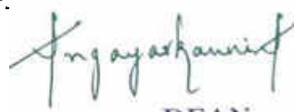
- Animations and videos on recent technologies, through audio visual aids.
- All the laboratories are provided with LCD projector and LCD TV
- Power point and video presentations are displayed to the students about Emasculation, Pollination and breeding techniques.
- Softwares like Agres. Genres, NPRC, IRRI-STAT,STARSAS are used to demonstrate to the students the Experimental and Mating designs.
- E - courses and online journals are used for effective dissemination of course
- Intranet facilities are provided to the students to access online journals.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and Ph.D. Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean .....**A. Angayarkanni**..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Molecular Biology & Biotechnology

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



**M.Sc. (Ag.) Molecular Biology and Biotechnology**  
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#### 6.4. Self Study Report for the Programme

**Name of the Degree Programme: M.Sc. (Ag.) Molecular Biology and Biotechnology**

**Offered by: Department of Genetics and Plant Breeding**  
(UGC SAP DRS Phase II & DST FIST supported)

##### 6.4.1. Brief History of the Degree Programme

The division of Agricultural Botany came into existence mainly to cater the instructional needs of UG degree in the year 1958. Later the division was upgraded as the Department of Agricultural Botany in the Faculty of Agriculture in 1980. The Post graduate programme in Agricultural Biotechnology was started in the year 2012 in the Department of Genetics and Plant Breeding. The PG degree was later renamed as Molecular Biology and Biotechnology in the year 2022.

Historical Itinerary	Year of Commencement/Period
Division of Agricultural Botany	1958
Ph.D. in Agricultural Botany	1965
The Division was upgraded as Department of Agricultural Botany	1980
M.Sc. (Ag.) in Genetics and Plant Breeding	1989
Ph.D. in Genetics and Plant Breeding	1992
M.Sc.(Ag.) in Seed Science & Technology	2006
The Department was renamed as Department of Genetics and Plant Breeding	2010
Ph.D. in Seed Science and Technology	2010
M.Sc.(Ag.) in Agricultural Biotechnology	2012
Ph.D. in Agricultural Biotechnology	2019
Renamed as M.Sc.(Ag.) in Plant Molecular Biology and Biotechnology	2019
Renamed as Ph.D. in Plant Molecular Biology and Biotechnology	2019
Renamed as M.Sc.(Ag.) in Molecular Biology and Biotechnology; Ph.D. in Molecular Biology and Biotechnology	2022

The M.Sc. (Ag.) degree programme in Molecular Biology and Biotechnology, has a total of 55 credits (2017-18 to 2020-21) which includes 20 credits for major courses, 20 credits for Master's thesis research, 09 credits for minor courses, 05 credits for supporting courses, 1 credit for seminar along with non - credit compulsory courses.

The recommendations of the V Dean's Committee is implemented from 2022-23 onwards. Out of a total of 70 credits which includes 20 credits for major courses, 30 credits for Master's thesis research, 08 credits for minor courses, 06 credits for supporting courses, 05 for common course, 1 credit for seminar along with non - credit compulsory courses.

**Vision**

- To grow into a leading centre with the integration of teaching and learning in molecular breeding and plant biotechnology.
- To become a leading Laboratory with the latest molecular tools to disseminate knowledge and skill to the students.

**Goals**

- To enhance the expertise through high delivery inputs in advanced learning, research and development through Institutional collaboration.
- To empower the graduates to start an enterprise on their own and deliver products.
- To develop abiotic stress tolerant varieties using molecular tools.
- To reach out to national and global collaborators to enhance and achieve the excellence in Plant Biotechnology.

**Objectives**

- To provide students with the most useful practical skills and to introduce them to area of research methods and techniques used in modern biological sciences.
- To generate entrepreneurship in Agricultural Biotechnology and agro-based industries
- Breeding for abiotic stress tolerance by utilising latest molecular tools for saline and flood tolerance suitable for east coast region of Tamil Nadu.
- To establish link with DBT, ICAR, SAUs, IRRI and other leading national and international institutes and Biotechnology based industries

**Strategic plan to achieve Vision and Goal (Agricultural Biotechnology)**

Goal	Objectives	Implementation plan	Performance Metrics/Timeline	Outcomes
To enhance the expertise through high delivery inputs in advanced learning, research and development through Institutional collaboration.	To provide students with the most useful practical skills and to introduce them to area of research methods and techniques used in modern biological sciences.	Periodical upgradation of course content.  Definitive implementation of class seminars & credit seminar to impart interactive ability among students	Once in three years.  Once in a semester	A periodically updated curriculum adds up to the domain knowledge of the students.

To generate entrepreneurship in Agricultural Biotechnology and agro-based industries	To generate entrepreneurship in Agricultural Biotechnology and agro-based industries	Organizing periodical guest lectures by entrepreneurs/industrialist  Arranging industrial visit	Periodically	Development of student's personality to face the society.
To develop abiotic stress tolerant varieties using molecular tools.	Breeding for abiotic stress tolerance by utilising latest molecular tools for saline and flood tolerance suitable for east coast region of Tamil Nadu.	Development of abiotic stress tolerant/resistant varieties.	Periodically	Adaptation to changing environmental conditions.  Improvement on livelihood of farmers.
To reach out to national and global collaborators to enhance and achieve the excellence in Plant Biotechnology.	To establish link with DBT, ICAR, SAUs, IRRI and other leading national and international institutes and Biotechnology based industries	To introduce modern molecular tools practiced in National and International Institutes.  MoU with National and International research agencies.	Periodical	To build and strengthen a strong education, research and translation ecosystem across the country.

### Accomplishments

#### Research Collaborations

- The Department of Genetics and Plant Breeding has collaborated with various National and International agencies such as **IAEA, FAO, IRRI, IIRR, IIOR, and UGC.**
- The department has strong collaboration with **AICRIP (ICAR) and STRASA (IRRI) (saline tolerant breeding network)** programme.
- Faculties of the Department are actively engaged in **IRRI-Annamalai University (IRRI-AU) MoU on "Multiple Stress tolerant Rice Varieties for TamilNadu"** involving extensive evaluation of elite **Green Super Rice (GSR) lines** since 17.06.2020.

## Research Fundings

The research environment of the Department got boosted up by funds from

- ✓ UGC-SAP DRS Phase I & II (102.5 lakhs)
- ✓ DST FIST (Rs. 38 lakhs)
- ✓ Non-SAP (10 lakhs)
- ✓ RUSA (10 lakhs) and
- ✓ TNSCST.
- ✓ RGNF.
- ✓ Fly Ash mission from NLCIL.

## Research Outcomes

- Standardized hand emasculation and pollination method for hybrid seed production in Sesame is a major outcome of FAO/IAEA research project.
- Annamalai Melon.
- AU-1 rice are the notable contributions of the department.
- Annamalai Brinjal (National Aphid resistant check variety), a popular and major cultivated variety in Cuddalore district of Tamil Nadu.
- AU-1 GSR (Green Super Rice), an elite high yielding, multiple stress tolerant rice variety was released during December, 2020. It is cultivated in the districts of Nagapattinam, Mayiladuthurai, Cuddalore, Villupuram, Kallakurichi, Thiruvallur, Salem, and Madurai.
- **Seed pelleting techniques for sesame, green gram and black gram using fly ash was developed through DST Project.**
- **Sesame seed hardening technique chicory medicinal herb extract was developed through UGC - MRP project**
- **Seed halogenation technique for sesame seed storage through TNSCST project**
- **Seed hardening techniques for paddy, Greengram and brinjal.**
- **SSR marker techniques for varietal identification.**
- **Standardized Bio pelleting using Prosopis spp.**
- **Standardization of tissue culture techniques for sesame, green gram and black gram was developed through DST Project.**
- **Black gram genotypes resistant to YMV was screened using molecular tools through UGC-GDA-XII plan innovative Research project.**

## Achievements by Faculty

- Dr. C.N. Sambandam an eminent vegetable breeder and the first Head of the Department spearheaded the release of Annamalai Brinjal.
- Dr. S. Thirugnanakumar's Doctoral research scholar Dr. R. Narasimman received **Jawaharlal Nehru Post Graduate Research Award from ICAR.**
- Dr. A. Anandan went for hands-on training at **International Rice Research Institute (IRRI), Philippines.**
- Dr. R. Eswaran had undergone training at **Ghent University, Belgium**
- Dr.S.Murugan was invited as **Visiting Professor** by the Dept. of Horticulture, **North Carolina State University, U.S.A.**
- Dr. S. Murugan was invited as **Visiting Scholar/Researcher** by the **Biomedical Sciences Research Institute, Ulster University, UK.**

- Dr. M. Prakash, Professor served as **UGC-SAP Co-Ordinator** for DRS Phase I and II.
- Dr. S. Murugan, Professor served as **UGC-SAP Deputy -Coordinator** for DRS Phase I and II.
- Dr. M. Prakash, Professor is currently serving as **Controller of Examinations**, Annamalai University since, Januaray, 2022.
- Dr. S. Murugan, Professor is serving as **Joint-Director, Directorate of Research and Development (DRD)**, Annamalai University.
- Dr. S. Padmavathi, Professor is serving as **Academic Council Member**, Annamalai University from 2022 onwards.
- Dr. K. Saravanan, Professor is serving as **Faculty Co-Ordinator, IQAC Cell, Faculty of Agriculture** from 2020 onwards.
- Dr.T. Sabesan, Associate Professor is serving as **Deputy Director, Center for Alumni Relations**, Annamalai University since 2019.
- Dr. M. Venkatesan Associate Professor is serving as **Nodal-Officer, Disability Cell**, Annamalai University.
- Dr. S. Vennila, Assistant Professor is serving as **Associating Scientist, Center for Natural Farming and Sustainable Agriculture**.
- **IRRI-AU MoU Team of Department of Genetics and Plant Breeding include Dr. K. Saravanan, Dr. T. Sabesan, Dr.R.Elangaimannan and Dr. B. Sunilkumar as lead plant breeders.**
- **“AU-1 GSR”** - A multi stress tolerant rice variety was released by IRRI-AU MoU Team of Department of Genetics and Plant Breeding.

The faculties also visited various countries and attended research oriented conferences and workshops. They are also actively involved in professional development activities by becoming members in various professional bodies and published research articles in various peer reviewed and high impact factor journals. The majority of the Staff in this discipline has qualified the National Eligibility Test.

#### Departmental Research Metrics :

Topic	Metrics	Source
'h' Index	11	IRINS, AU
i 10 Index	7.9	Google Scholar
Cross-Ref Citations	338	IRINS, AU
Total Citations	747	IRINS, AU

#### Special Lectures

- Dr.V. Vijayakumar, Eastern Connecticut State University, USA
- Prof. C. Ramasamy, Former Vice Chancellor (TNAU), Coimbatore.

- Dr. K.K.Vinod, Principal Scientist, IARI, Regional Centre, Aduthurai.
- Dr. R. Vijayaraghavan, Dean, Adhiyaman College of Agriculture and Research, Krishnagiri.
- Dr.Mohan Andrew Savery, Senior Rice Breeder, KVK, Puducherry
- Dr. M. Subramanian, Former Director of Research, TNAU
- Dr.MuraliGopal, Principal Scientist, ICAR- Central Plantation Crops Research Institute, Kerala.
- Dr. S. Thirumeni, Professor& Head, PAJANCOA, Karaikal.
- Dr.J. KannanBapu, Former Registrar, TNAU
- Dr.Muralidharan, Director, Indian Institute of Pulses Research
- Dr. M. Mageswaran, Director, CPBG, TNAU
- Dr.N. Nadarajan, Professor, Tamil Nadu Agricultural University.
- Mr.UmakanthDubey, Deputy Registrar, PPVFRA, New Delhi
- Ms. Subashini Sridar, Centre for Indigenous Knowledge Systems (CIKS)

#### International and National Seminars/Conferences/Workshops - Organised (2017-2022)

Topic	Metrics
International Conference	01
National Seminar/Conference/Webinars	09
National/ Workshop	08

The department successfully organized the first policy meeting on “National Consultation Workshop on Agro-biodiversity Hotspots and Access and Benefit Sharing” of National Biodiversity Authority (NBA) and PPVFRA.

In March, 2018 the department successfully organized the Plant variety protection Awareness programme for Farmers under the aegis of PPVFRA.

#### Research Publications and Books (2017-2022)

Journal Articles	302
Books & Book Chapters	91

ICAR has recommended two books namely, “A Text book of Seed Science and Technology” “Quantitative Genetics and Crop Breeding” authored by Dr. S. Thirugnanakumar and Co-authors as well as Dr. S. Padmavathi and Co authors for the aspirants of PG and Ph.D. courses in ICAR and affiliated colleges.

#### Student Progression

Students are constantly motivated to take up national level competitive examinations like National Eligibility Test, ARS and were guided through coaching classes with supporting books. The Department is striving hard to produce excellent researchers with outstanding skill sets. The faculty members periodically organize

Seminars, Trainings and workshops to impart knowledge on recent development in crop improvement.

Thrust has been given to impart knowledge to students on various aspects of Molecular Biology and Biotechnology at post graduate level. This ultimately encourages the students to improve their competing ability to express their ability in the competitive examinations. Additionally, coaching classes are being conducted to make the students, facing competitive world. This enables the students to secure placements in World Class coveted overseas institutions, most often with full-funding.

Remedial classes are being offered for slow learners for easy understanding and enhance their performance. By taking Guest lectures with renowned scholars, the knowledge and recent trends of the subjects are being updated.

### **Alumni Support**

Alumni of the Department placed in SAUs, ICAR Institutions, International Institutes, and Private Sectors act as a major driver of growth providing technical guidance, essential infrastructure, CSR funding and placement.

The alumni donations has resulted in realizing the Dr. C.N. Sambandam Hi-Tech Presentation Hall.

### Departmental Endowment Awards for Students

To motivate and enthuse the PG students, an endowment is instituted.

Sl. No.	Name of the Endowment award/medal
1.	Srilochani Varadarajulu Prize for top ranking student

### Department Snapshot

Category	Total period	Last five year period (2017-2022)
Number of Publications (Journal articles)	883	345
Number of Publications (Seminars/ Conferences/Symposia)	240	80
Number of Books & Book Chapters	161	22
Numbers of Projects obtained	30	11
Grants (Mobilization (Lakh rupees)	343.13	194.26
Number of Ph.Ds. Produced	-	-
Number of PGs Produced	37	25
Number of Seminars/Conference/ training program/workshops organized	32	18

### 6.4.2. Faculty Strength

The permanent faculty strength appointed in the Department of Genetics and Plant Breeding is furnished below.

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
1.	Professor*	9	9	-	1
2.	Associate Professor*	10	10	-	1
3.	Assistant Professor*	12	12	-	3
	<b>Total</b>	<b>31</b>	<b>31</b>	<b>-</b>	<b>5</b>

\*Assigned responsibilities for multiple programmes



### Credentials of the Faculty

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
							11	7.94	747		
1.	Dr. S. Padmavathi © Professor and Head	26	Hybrid seed production, Seed Treatment techniques	19	3	20	3	1	6	3	114
2.	Dr. M. Prakash ©# Professor	26	Stress Physiology and plant Molecular Biology	25	8	72	15	6	17	31	1142
3.	Dr. S. Murugan *# Professor	26	Cytogenetics, Heterosis Breeding, Molecular Plant Breeding, Molecular marker technology	15	3	50	9	2	9	9	242
4.	Dr.S.Thirugnanakumar * Professor (Retired on 30.06.2022)	26	Molecular genetics, Biotechnology, Mutation Breeding, Recombination breeding	28	7	90	5	2	11	11	296
5.	Dr. P. Senthil Kumar *# Professor	24	Heterosis Breeding, Sesame Breeding, Musk melon breeding, Molecular marker	22	3	31	-	2	13	16	512

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
			technology								
6.	Dr. Y. Anbuselvam * Professor	26	Genetics and Cytogenetics, Biometrics, Biotechnology	23	6	56	10	2	11	12	313
7.	Dr. P. Thangavel * Professor	25	Biometrics, Genetics and Pulse Breeding	18	1	57	3	1	9	9	248
8.	Dr. K. Saravanan * Professor	24	Quantitative Genetics, Biometric analysis	18	4	98	4	3	15	27	1001
9.	Dr. N. Senthil Kumar * Associate Professor	22	Heterosis Breeding in Vegetables	15	3	72	19	9	8	6	231
10.	Dr. Y. Anitha Vasline * Associate Professor	22	Mutation Breeding, Cytogenetics	15	1	29	8	4	7	3	89
11.	Dr. B. Sunil Kumar *# Associate Professor	20	Physiological and Molecular genetics in Pulses	11	1	61	6	4	14	30	1310
12.	Dr. J. Gokulakrishnan * Associate Professor	21	Heterosis Breeding in Rice & Maize	13	2	43	10	6	7	6	169
13.	Dr. R. Elangaimannan *# Associate Professor	21	Heterosis Breeding, Biometrics,	13	1	43	10	3	6	6	188

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
			physiology & Plant Biotechnology								
14.	Dr. T. Sabesan *# Associate Professor	20	Heterosis breeding, and Molecular Plant Breeding for Abiotic stress.	11	-	61	18	8	13	16	615
15.	Dr. V. Anbanandan * Associate Professor	18	Sugarcane Breeding, Rice Breeding	7	-	33	9	2	5	2	98
16.	Dr. GSathiyarayanan © Associate Professor	19	Seed Halogenation. Hybrid seed production	16	-	90	29	2	8	6	222
17.	Dr. S. Ezhil Kumar © Associate Professor	19	Molecular Varietal identification, Seed Production and Seed Testing.	15	-	21	5	2	2	1	20
18.	Dr. P. Karthikeyan * Associate Professor	17	Rice Saline Tolerant	7	-	46	9	3	6	5	171
19.	Dr. M. Venkatesan * Associate Professor	17	Rice Breeding, Innovative Breeding, Hybrid rice	10	-	57	9	2	9	9	241

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
							11	7.94	747		
20.	Dr. R. Ebneezer Baburajan * Associate Professor	19	Heterosis Breeding, Resistance Breeding	6	-	34	19	4	3	1	36
21.	Dr. R. Eswaran ** Assistant Professor	19	Heterosis Breeding, Molecular Breeding	12	-	63	22	5	13	15	503
22.	Dr. C. Praveen Sampath Kumar ** Assistant Professor	18	Heterosis Breeding in Bhendi	10	-	73	19	3	8	7	188
23.	Dr. J.L. Joshi ** Assistant Professor	16	Heterosis Breeding in Bhendi	8	-	43	11	2	2	1	31
24.	Dr. R. Anandan # Assistant Professor	16	Plant Molecular Biology and Biotechnology	8	-	33	5	1	8	6	224
25.	Dr. K.R. Saravanan ** Assistant Professor	16	Screening genotypes for saline Ecosystem	12	-	72	21	4	5	1	58
26.	Dr. S. Vennila *© Assistant Professor	16	Mutation Breeding, Cytogenetics	8	-	43	27	5	5	3	75
27.	Dr. S. Suganthi *© Assistant Professor	16	Recombination Breeding, Crop Diversity Analysis	8	-	41	26	4	5	3	105

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94	747		
28	Dr. S. Ranjith Rajaram * <sup>©</sup> Assistant Professor	14	Rice and Sesame Breeding	8	-	31	24	3	5	2	72
29.	Dr. A. Kamaraj <sup>©</sup> Assistant Professor	13	Pre sowing seed enhancement treatment, Seed testing	7	-	34	18	2	3	2	58
30.	Dr. P. Satheesh Kumar * <sup>©</sup> Assistant Professor	13	Heterosis Breeding, Mutation Breeding.	7	-	50	18	4	6	4	160
31.	Mr. V. Arivoli * Assistant Professor	12	Recombination Breeding	-	-	0	-	-	-	-	-
32.	Dr. R. Narayanan * <sup>©</sup> Assistant Professor	12	Recombination breeding, Mutation Breeding	7	-	15	8	2	2	1	23

\* - Genetics and Plant Breeding, <sup>©</sup>- Seed Science and Technology, # - Molecular Biology and Biotechnology

## List of Project Handled - Last five years

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
1.	Screening Bhendi genotypes ( <i>Abelmoschus esculentus</i> (L.) moench) (rice fallow) for resistance to yellow vein mosaic virus disease combined with high yield Suitable for Coastal Ecosystem.	N. Senthil Kumar	2013-2017	UGC	15.42
2.	Exploitation of medicinal herbs to alleviate moisture stress and enhancing yield potential in sesame ( <i>Sesamum indicum</i> L) under rainfed condition through molecular approach	Dr. G. Sathiya Narayanan Dr. B. Sunil Kumar Dr. R. Anandan	2013-2017	UGC	7.95
3.	DST -FIST	Dr. S. Murugan	2013-2018	DST	38.00
4.	Development of stress tolerance varieties for coastal regions of TamilNadu in mandate crops (UGC SAP DRS Phase II)	Dr. M. Prakash Dr. S. Murugan	2015-2020	UGC	102.50
5.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic back ground of Black gram ( <i>Vigna mungo</i> (L.)	Dr. S. Murugan Dr. M. Prakash Dr. R. Anandan Dr. J. Gokulakrishnan	2016 -2017	UGC	1.25
6.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic backgrounds of blackgram ( <i>Vigna mungo</i> L.) (DST PURSE Phase II)	Dr. S. Murugan	2018-2021	DST-PURSE	5.00
7.	Green Super Rice for TamilNadu: Assessing multiple abiotic and biotic stress tolerance and yield potency under varying	Dr. R. Elangaimannan Dr. K. Saravanan Dr. T. Sabesan	2021-2023	RUSA	10.00

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
	environment for sustaining production and ensuring nutritional integrity	Dr. B. Sunilkumar Dr. S. Murugan			
8.	Technology development for biofortification through micronutrients and bioactive compounds for protection and enhancement of human health in coastal ecosystem	Dr. Elayaraja Dr. N. Senthilkumar	2022-2024	RUSA	10.13
<b>TOTAL (A)</b>					<b>190.25</b>
<b>Private Sector Projects</b>					
Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
1.	Efficacy trials with Modulin on the expression ,growth ,development and yield of rice crop	Dr. G. Barathan Dr. S. Murugan	2016-2017	T-Stanes and company Ltd.,Coimbatore	2.10
2.	Evaluation of Methyl violet Dye in the formulation of Carboxin 37.5% +Thiram 37.5% WS on groundnut.	Dr. T. Sabesan	2018 - 2019	Arysta Life Science, Mumbai	0.91
3.	Digitalization of data on Crop cultivation practices of major Agricultural and Horticultural crops	Dr. S. Murugan	2018-2019	Bayer crop Science	1.00
<b>TOTAL (B)</b>					<b>4.01</b>
<b>TOTAL A+B</b>					<b>194.26</b>

## Awards/Recognitions/Countries visited by Faculty

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
1	Dr.S.Murugan	Visiting Professor, North Carolina State University (2017) Fellow of Indian Society of Genetics and Plant Breeding, New Delhi	U.S.A , Water melon and cucumber breeding, North Carolina State University, U.S.A
2	Dr. G. Sathyanarayanan	Excellence in Research Award (2017)	S & T SIRI, Telangana
3	Dr. M. Prakash	Best research publications award, 2012-2017. J JChinoy Gold Medal Award- Indian Society of Plant Physiology, 2017. Fellow - Indian Society of Plant Physiology, New Delhi, 2015. (FISPP). Fellow - National Academy of Biological Sciences, Chennai. 2016 (FNABS).	
4	Dr.S.Thirugnanakumar	Fellow of Indian Society of Oil Seed Research, Fellow of HIND AGRI-HORT Society. ICAR Citation for best Thesis award 2007 Dr.Kannaiyan endowment - Best researcher award -2018	
5	Dr.R. Anandan	Best oral presentation award (2017)	National Conference on Innovations in Biotechnology at Madurai Kamaraj University during 14 <sup>th</sup> & 15 <sup>th</sup> Dec., 2017.
6	Dr. T. Sabesan	Editorial Board Member (2017 onwards)	Journal of Innovative Agriculture (eISSN: 2394-5389)
7	Dr. R.Eswaran	Summer course on "Modern Breeding Techniques for the Improvement of leguminous plants" (2017).	Institute of plant biotechnology for developing countries , Ghent University , Belgium
8	Dr. K.R. Saravanan	Scientist of the year award (2018)	ICFA, Jharkand
9	Dr. K.R. Saravanan	Outstanding Breeder Award (2019)	PRAGATI, Jharkand
10	Dr. S. Murugan	Member, Panel of Examiners, TamilNadu Public Service Commission (TNPSC) ( 2019)	

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
11	Dr. T. Sabesan	Confidential work at TamilNadu Public Service Commission (TNPSC), Chennai (2019)	(TNPSC), Chennai
12	Dr. M. Venkatesan	Best Oral Presentation award (2019)	University of Hyderabad
13	Dr. S. RanjithRajaram	Best Oral Presentation (2019)	PRAGATI, Jharkhand
14	Dr.T.Sabesan	Best paper Award (First Place) in the session Genetics (2020)	In the 6 <sup>th</sup> National Conference in Agricultural Scientific Tamil held International Institute of Tamil Studies, Chennai during Dec 21-22, 2020.
15	Dr.B. SunilKumar	Outstanding Scientist Award (2018)	Conferred by the Society of Tropical Agriculture, New Delhi
16	Dr. G. Sathyanarayanan	Best Researcher Award (2020)	ICEACBS, Puducherry
17	Dr. M. Venkatesan	Best Scientist Award (2020)	ICEAACBS, Puducherry
18	Dr. S. Thirugnanakumar	Editorial member for the journal "Advances in Plant Sciences"	
19	Dr. T. Sabesan	Reviewer Excellence Certificate (2020)	<i>ActaEcologicaSinica</i> (Elsevier), Agricultural Science Digest (ARCC)
22	Dr. S. RanjithRajaram	Academic Excellence Award (2021)	Institute of Researchers, Wayanad, Kerala
23	Dr. M. Venkatesan	Best Teacher Award (2021)	Global Management Council, Ahmadabad
24	Dr. Y. Anbuselvam	Reviewer Excellence Award (2021)	ARCC Journal
25	Dr. T. Sabesan	Excellence in Reviewing (2022)	International Journal of Plant & Soil Science
26.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Asian Journal of Biotechnology and Genetic Engineering
27.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Current Journal of Applied Science and Technology
28.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	International Journal of Environment and Climate Change

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
29.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	Annual Research and Review in Biology
30.	Dr. S. Vennila	Best Oral Presentation (2018)	Dept. of Genetics and Plant Breeding, Faculty of Agriculture, Annamalai University
31.	Dr. S. Vennila	Best Oral Presentation (2020)	Dept. of Plant Pathology, Faculty of Agriculture, Annamalai University
32.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University
33.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Agrl. Extention, Faculty of Agriculture, Annamalai University
34.	Dr. G. Sathiyarayanan	Best Poster Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University

### 6.4.3. Technical and Supporting staff

The technical and supporting staff of the Department of Genetics and Plant Breeding is given below

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Assistant*	4	4	-	1
2.	Lab assistant*	4	4	-	2
3.	Field assistant*	5	5	-	2
<b>Total</b>		<b>13</b>	<b>13</b>	<b>-</b>	<b>5</b>

S. No.	Sanctioned post	Staff in place	Responsibilities
1.	Supporting Staff*	4	<ul style="list-style-type: none"> <li>• Assisting in Data processing and documentation.</li> <li>• Maintenance of office files and official records.</li> <li>• Execution of purchase and settlement of bills.</li> <li>• PG and Ph.D admissions work</li> <li>• UG, PG and Ph.D Examination works</li> <li>• Computer typing works.</li> </ul>
2.	Technical Staff* (Department)	4	<ul style="list-style-type: none"> <li>• Assisting laboratory classes.</li> <li>• Supervision of labourers</li> <li>• Maintenance of stock registers.</li> </ul>
	Technical Staff* (Research)	3	<ul style="list-style-type: none"> <li>• Layout of field trials.</li> <li>• Supervision of labourers</li> <li>• Maintenance of stock registers.</li> </ul>
3	Field Staff*	2	<ul style="list-style-type: none"> <li>• Layout of field trials.</li> <li>• Recording of research trial observations.</li> </ul>

\*Assigned responsibilities for multiple programmes

#### 6.4.4. Classrooms and Laboratories

Sl.No.	Abstract of Facilities	Numbers
1.	HOD Room	1
2.	Office Room	1
3.	Staff Rooms	5
4.	UG Laboratories	3
5.	PG Lecture Halls	3
6.	Ph.D. Lecture Halls	3
7.	Field Demonstration Hall	1
8.	PG & Ph.D. Laboratories	5
9.	Department Library	1
10.	Hi-Tech Hall	1
11.	Pot Culture Yard	3
12.	Plant Breeding Experimental Farm (Field No. 13,14,15 & 16)	4

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
1.	HOD Room	1	(15x9.7) 145.5	1	-
2.	Office Room	1	(16x9.7) 155.2	3	-
3.	Staff Room-1	1	(17.8x9.2) 163.76	2	-
4.	Staff Room-2	1	(17.8x9.2) 163.76	3	-
5.	Staff Room-3	1	(17.8x9.2) 163.76	3	-
6.	Staff Room-4	1	(17.8x9.2) 163.76	3	-
7.	Staff Room-5	1	(31.5x19.4) 611.1	13	-
8.	UG Laboratory-1	1	(30x36.2) 1086.75	50	OHP projector, LCD television, monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
9.	UG Laboratory-2	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
10.	UG Laboratory-3	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
11.	PG Lecture Hall (Genetics & Plant Breeding)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like LCD projector and Smart TV.
12.	PG Lecture Hall (Seed Science & Technology)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like Smart TV

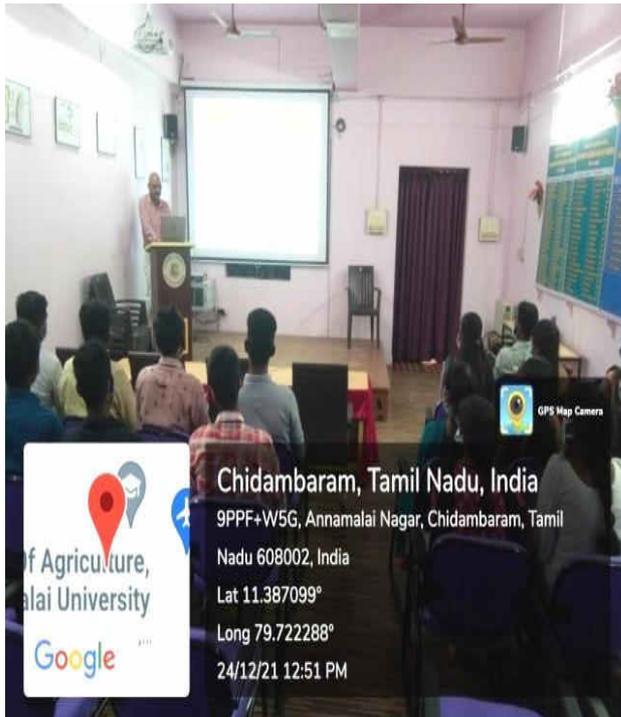
Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
13.	PG Lecture Hall (Molecular Biology & Biotechnology)	1	(30x12.73) 381.98	10	Smart class rooms are available with facilities like LCD projector (Smart board) and Smart TV
14.	Ph.D. Lecture Hall (Genetics & Plant Breeding)	1	(19.8x11) 220	10	Class rooms are available with Smart TV facility.
15.	Ph.D. Lecture Hall (Seed Science & Technology)	1	(19.8x11.6) 229.6	10	Class rooms are available with Smart TV facility.
16.	Ph.D. Lecture Hall (Molecular Biology & Biotechnology)	1	(17.8x9.2) 163.7	6	Class rooms are available with Smart TV facility.
17.	Field Demonstration Hall	1	(30x20) 600	30	For Practical classes
18.	Cytology & Cytogenetics Laboratory	1	(26.5x20) 530	20	The laboratory is equipped with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber).
19.	Seed technology Laboratory	2	(15x6.2) + (15x6.2) 94+94	5+5	The laboratory is equipped with seed technological instruments like seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
20.	Plant Tissue culture Laboratory	1	(10x8) 80	5	Plant tissue culture laboratory is equipped with laminar air flow chamber, autoclave and incubator, mini thermo cycler, electronic weighing balance, gel documentation chamber.
21.	Molecular Biology Laboratory	1	(30x11.3) 339	7	Molecular biology laboratory is equipped with major instruments like BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-8 transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge
22.	Department Library	1	(30x22) 660	25	The Department Library is provisioned with 612 text and reference books, PG and Ph.D. thesis, National and International journals, conference proceedings and volumes, 20 project reports.
23.	Dr. C.N.Sambandam Hi-Tech Hall	1	(30x22) 660	50	Hi-Tech presentation hall
24.	Pot Culture Yard-GPB	1	0.03 ha	-	To conduct preliminary evaluation trials and seed multiplication.
25.	Pot Culture Yard-SST	1	0.03 ha	-	To conduct preliminary trials and germination studies.
26.	Pot Culture Yard-PMBB	1	0.03 ha	-	For hardening and to conduct preliminary trials.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
27.	Plant Breeding Experimental Farm-Field no.13	1	0.73 ha.	-	Conducting trials for post graduate students and AICRIP trials
28.	Plant Breeding Experimental Farm-Field no.14	1	0.58 ha.	-	Conducting trials for post graduate students and AICRIP trials
29.	Plant Breeding Experimental Farm-Field no.15	1	0.80 ha.	-	Conducting trials for post graduate students and AICRIP trials
30.	Plant Breeding Experimental Farm-Field no.16	1	0.69 ha.	-	Conducting trials for post graduate students and AICRIP trials

**Instrument Facilities:**

S.No	Items	Nos.
1.	Dissection Microscope	46
2.	Compound Microscope	10
3.	Electronic Moisture Meter	2
4.	Electronic Balance	4
5.	Seed Germinator	2
6.	Automatic seed / Grain counter	1
7.	Hot air Oven	1
8.	BOD Incubator	1
9.	Fluorescence Microscope	1
10.	Centrifuge	3
11.	Growth Chamber	2
12.	Distillation Assembly	1
13.	PCR	3
14.	Gel document	2
15.	P <sup>H</sup> meter	2
16.	Orbital Shaker	1
17.	Photo synthetic meter	1
18.	Water Potential meter	1
19.	Electrophoresis	4
20.	Deep Freezer	3
21.	Refrigerator	2
22.	UV Nano spectrophotometer	1
23.	Sequencing Gel apparatus	1
24.	Ultra sonicator	1
25.	Desiccator	1
26.	Laminar Airflow chamber	2
27.	Autoclave	1
28.	Micro Air oven	2
29.	Water Bath	2
30.	Vaccum emasculator	1
31.	Triers	4
32.	Seed - Dividers	3
33.	Seed Blower	1
34.	Purity Working Board	4
35.	Seed Pelleting machine	1



#### 6.4.5. Conduct of Practical and Hands-on-Training is provided

Course	Practicals / Hands-on training	Laboratory Visits
Principles of Biotechnology	<p>Preparation of buffers, reagents, media etc.,</p> <p>Extraction of DNA</p> <p>Gel electrophoresis &amp; autoradiography</p> <p>Agrobacterium-mediated &amp; direct gene transfer</p>	<p>Students are being taught with basic analytical chemistry and knowhow regarding normality, molarity, equivalent weight, and molarity for preparations of buffers / reagents / media / plant growth regulators which are frequently used in several molecular biology techniques.</p> <p>Students are given hands on experience in DNA extraction of Rice, blackgram, sesame and banana by following CTAB method</p> <p>Students are trained on agarose gel electrophoresis and autoradiography for DNA extracted from plants</p> <p>Students are demonstrated with gene gun and <i>Agrobacterium</i> mediated transformation using <i>cry1ACF</i> gene.</p>
Fundamentals of Molecular Biology	<p>Extraction of proteins</p> <p>Electrophoretic separation of proteins by SDS-PAGE</p> <p>Western blotting techniques</p>	<p>Students are taught to extract protein of various plant samples using Bradford and Lowrys method at molecular biology laboratory, Department of genetics and plant breeding.</p> <p>Students are trained on electrophoretic separation of proteins by SDS-PAGE technique.</p> <p>Students are given demonstration on western blot technique by using Biorad apparatus at molecular biology laboratory, Department of genetics and plant breeding.</p>
Techniques in Molecular Biology	<p>Extraction of plant genomic DNA by CTAB method</p> <p>Centrifugation &amp; chromatography techniques</p> <p>Restriction digestion DNA</p>	<p>Students are given hands on experience in DNA extraction from Rice, blackgram, sesame and banana by following CTAB method</p> <p>Students are trained with Centrifugation &amp; column and thin layer chromatography techniques at molecular biology laboratory, Department of genetics and plant breeding.</p> <p>Students are given hands on experience in restriction digestion of DNA using EcoR1,</p>

	<p>Amplification of DNA &amp; analysis of PCR products</p> <p>Primer designing, DNA sequencing &amp; construction of genomic library</p>	<p>BamH1 and HindIII enzymes</p> <p>Students are given hands on experience in DNA amplification, analysis of PCR products and quantification using UV nano spectrophotometer at molecular biology laboratory, Department of genetics and plant breeding.</p> <p>Students are trained with primer designing using Primer3 software, sanger method of DNA sequencing and genome library construction.</p>
Molecular cell biology	<p>Cell staining &amp; Histochemical techniques</p> <p>Study of various microscopy</p> <p>Bacterial conjugation, transduction &amp; transformation</p> <p>Isolation of nuclear &amp; cytoplasmic genome</p>	<p>Visit to Cytology Laboratory, Department of Botany, Annamalai University.</p> <p>Visit to central instrumentation Laboratory, Annamalai University.</p> <p>Trained with heat shock and electroporation methods of bacterial transformation</p> <p>Students are given hands on experience for extraction of DNA from mitochondria and chloroplast genome</p>
Plant tissue culture & Genetic transformation	<p>Preparation of nutrient media</p> <p>Inaculation of Explant, subculturing &amp; plant regeneration</p> <p>Gene cloning &amp; vector construction</p> <p>RT-PCR to study transgenic expression</p>	<p>Visit to plant tissue culture laboratory, KVK, Pondicherry</p> <p>Visit to plant tissue culture laboratory, KVK, Pondicherry</p> <p>Students are given hands on regarding gene cloning vector construction</p> <p>Students are given demonstration on RT-PCR technique for transgene expression</p>
Genomics & Proteomics	<p>Physical &amp; Genetic mapping</p> <p>Molecular mapping using RFLP, RAPD, AFLP, SNP, etc.,</p>	<p>Visit to The Centre for Plant Molecular Biology (CPMB), Tamil Nadu Agricultural University, Coimbatore</p> <p>Visit to The Centre for Plant Molecular Biology (CPMB), Tamil Nadu Agricultural University, Coimbatore</p> <p>Visit to The Centre for Plant Molecular Biology (CPMB), Tamil Nadu Agricultural</p>

	<p>Gene prediction &amp; annotation using database</p> <p>DNA microarray &amp; chip technology</p>	<p>University, Coimbatore</p> <p>Visit to The Centre for Plant Molecular Biology (CPMB), Tamil Nadu Agricultural University, Coimbatore</p>
<p>Research</p>	<p>Research on Plant Micropropagation on medicinal plants, secondary metabolites through suspension culture, identification of novel phytochemicals through HPLC and GCMS, genomic diversification using molecular marker and genetic transformation using <i>cry</i> genes</p>	



**Hands on Training on Molecular Biotechnology (HTMB) 10 – 14, August 2017**

### Study Tours / Industrial Visits

Students are also taken to different research stations like

Sl. No.	Place of Visit	Year
1	Kerala Agricultural University	2022
2	CTCRI Kerala	2017, 2022
3	Rajiv Gandhi Center for Biotechnology and Botanical Garden, Trivendrum, Kerala	2017, 2022
4	Dr. S. Thirugnanakumar, Coimbatore,	2022
5	Central Instrumentation Laboratory, Annamalai University	2017, 2018, 2022
6	NRCB, Trichy,	2022
7	IICPT, Tanjore,	2017, 2018,
8	Rasi seeds,	2022
9	Maha seeds.	2022
10	Plant Quarantine Centre, Trichy,	2022
11	Indian Institute of Pulse Research, Vamban,	2022
12	Regional Research Station, Aduthurai,	2017, 2022
13	State Seed Farm, Vandrayanpattu,	2022
14	KVK, Pondicherry	2022
15	PAJANCOA, Karaikal.	2017, 2018, 2022

#### 6.4.6. Supervision of students in PG programme

Each post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise a Major Adviser (Chairman) and two members. Of the two members, one will be from the same Department of Faculty of Agriculture and the other in the related field from the other Departments of Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The chairman in consultation with the Head of the Department will nominate the other two members. The duties of advisory committee are as follows:

1. Guiding students in drawing the outline of research work
2. Guidance throughout the programme of study of the students.
3. Evaluation of research and seminar credits.
4. Correction and finalization of thesis draft.
5. Conduct of qualifying and final *Viva-Voce* examination.
6. The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
7. Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.
8. Mentor - Mentee

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.

Sl. No	Name of Faculty / Scientist	Whether qualify for supervision of PG Programme?	Whether qualify for supervision of Ph.D. Programme?	Name of students Guided	Degree Programme	Year of submission	Title of thesis
<b>2017-2018</b>							
1	Dr. R. Anandan	YES	YES	Deepak, K.V	M.Sc.(Ag.) Agricultural Biotechnology	2018	Studies on tissue culture work in pulse crop
2	Dr. S. Murugan	YES	YES	Malarkodi, A	M.Sc.(Ag.) Agricultural Biotechnology	2018	Validation of molecular markers in blackgram ( <i>Vigna mungo</i> ) using SSR markers
3	Dr. M. Prakash	YES	YES	Priyadharshni, B	M.Sc.(Ag.) Agricultural Biotechnology	2018	Invitro screening in blackgram for saline tolerance
4	Dr. P. Senthil Kumar	YES	YES	Vaisznavi, B	M.Sc.(Ag.) Agricultural Biotechnology	2018	Standardization of tissue culture technique in medicinal plants
5	Dr. Y. Anbuselvam	YES	YES	Vignesh, M	M.Sc.(Ag.) Agricultural Biotechnology	2018	Characterization of traditional rice genotypes for saline tolerance through DNA fingerprinting techniques
<b>2018 - 2019</b>							
1	Dr. R. Anandan	YES	YES	Johnny Subakar Ivin, J	M.Sc.(Ag.) Agricultural Biotechnology	2019	In vitro recreation studies in medicinal plant
2	Dr. K.R. Saravanan	YES	YES	Mary Roshni, A	M.Sc.(Ag.) Agricultural Biotechnology	2019	Studies on molecular diversity in Rice ( <i>Oryza sativa</i> L.)
3	Dr. R. Elangaimannan	YES	YES	Shobanadevi, C	M.Sc.(Ag.) Agricultural Biotechnology	2019	Studies on expression of heat shock protins to identify blackgram lines for the elevated temperature ecosystem
4	Dr. B. Sunil Kumar	YES	YES	Sushma, S	M.Sc.(Ag.) Agricultural Biotechnology	2019	Microsatellite markers assisted characterization for salinity tolerance in mungbean ( <i>Vigna radiate</i> (L.) wiczet)
5	Dr. T. Sabesan	YES	YES	Thenmozhi, M	M.Sc.(Ag.) Agricultural Biotechnology	2019	Studies on genetic diversity in blackgram using SSR markers

2019 - 2020							
1	Dr. R. Anandan	YES	YES	Bhuvaneshwari, R	M.Sc.(Ag.) Agricultural Biotechnology	2020	Assessment of genetic diversity in vitro gap for abiotic stress tolerance
2	Dr. M. Prakash	YES	YES	Merlin Monisha, M	M.Sc.(Ag.) Agricultural Biotechnology	2020	Genetic diversity assessment of greengram for satine drought tolerance
3	Dr. J.L. Joshi	YES	YES	Sriranganayaki, S	M.Sc.(Ag.) Agricultural Biotechnology	2020	Screening for YMV in bhendi using molecular markers
4	Dr. V. Anbanandan	YES	YES	Vanitha, V	M.Sc.(Ag.) Agricultural Biotechnology	2020	Studies on genetic diversity using molecular markers
2020 - 2021							
1	Dr. R. Anandan	YES	YES	Gurumoorthy, P	M.Sc.(Ag.) Agricultural Biotechnology	2021	In vitro studies in medicinal plants for germplasm conservation
2	Dr. M. Prakash	YES	YES	Kanmani Bharathi, J	M.Sc.(Ag.) Agricultural Biotechnology	2021	Standardization of regeneration portals in herbal plants with insulin preparation
3	Dr. R. Anandan	YES	YES	Poorna Lakshmi	M.Sc.(Ag.) Agricultural Biotechnology	2021	In vitro studies in for <i>Costus genus</i> accumulation of secondary metabolite
4	Dr. K.R. Saravanan	YES	YES	Priyadharshini, P	M.Sc.(Ag.) Agricultural Biotechnology	2021	Studies on linkage and crossing over in Blackgram genotypes ( <i>Vigna mungo</i> )
2021 - 2022							
1	Dr. R. Anandan	YES	YES	Divya, M	M.Sc.(Ag.) Plant Molecular Biology and Biotechnology	2022	Studies on in vitro regeneration protocol in <i>Pimenta dioica</i> – A high valued medicinal and aromatic plant
2	Dr. M. Prakash	YES	YES	Menaka, K	M.Sc.(Ag.) Plant Molecular Biology and Biotechnology	2022	In vitro tissue culture studies in <i>Impatiens balsamina</i> – An important ornamental medicinal plant

3	Dr. N. Senthil Kumar.	YES	YES	Preethi, M	M.Sc.(Ag.) Plant Molecular Biology and Biotechnology	2022	Studies on genetic diversity on rice genotypes for saline tolerance using SSR markers
4	Dr. R. Anandan	YES	YES	Saiprathyusha Neelam	M.Sc.(Ag.) Plant Molecular Biology and Biotechnology	2022	Studies on in vitro regeneration in <i>Premna integrifolia</i> – An important medicinal plant
5	Dr. B. Sunil Kumar	YES	YES	Srivaanchi Nathan, A	M.Sc.(Ag.) Plant Molecular Biology and Biotechnology	2022	Studies on in vitro regeneration protocol in cassia fisula through leaf explants
6	Dr. J.Gokulakrishnan	YES	YES	Suriyavelan, P	M.Sc.(Ag.) Plant Molecular Biology and Biotechnology	2022	Studies on genetic diversity for drought tolerance in tamilnadu traditional genotypes of rice ( <i>Oryza sativa</i> . L) using SSR markers
7	Dr. R. Elangaimannan	YES	YES	Surya Dharshini, C	M.Sc.(Ag.) Plant Molecular Biology and Biotechnology	2022	Standardization of <i>in vitro</i> regeneration protocol of tithonadiversifolia – An important medicinal plant



**6.4.7. Feedback of stakeholders**

The feedback is obtained for every course at the end of each semester and the consolidated action taken report is presented in the following table.

Sl. No.	Stakeholders	Feedback	Action taken
1	Students	Requested special classes for slow learning students	Remedial classes are taken for slow learners.
2		Asked for free ICAR coaching classes.	Special coaching classes for ICAR and competitive examinations.
3		Expressed the need for air conditioned Seminar Hall with A/V facilities.	Established Hi-Tech seminar Hall with funding from Departmental alumni and contribution from department Faculties.
4		Requested for re-fencing of damaged segments.	Re-fencing Plant Breeding Farm for conduct of various field trials.
5		Asked facility to carry out rapid emasculation in short span of time in rice.	Vacuum emasculator for ease and rapid hybridization in rice.
6		Expressed the need for free access to online journals for research at Department itself.	Provided Wi-Fi INFLIB net / MYLOFT for easy access of journals for research.
7		Requested for more seating capacity and books.	Enhanced Department Library facilities in terms of space and inventory.
8		Asked separate area for preliminary screening.	Partitioning of Pot-Culture Yard for three disciplines of study.
9		Requested smart class room facility.	Smart TVs in classrooms for visual presentation of videos and power points.
10		Expected guidance for their Progression.	"WhatNext?!"-A student oriented guidance programme by Experts was conducted on 2022.

Sl. No.	Stakeholders	Feedback	Action taken
11	Students	Asked for exposure to become an entrepreneur.	<ul style="list-style-type: none"> <li>▪ Industrial Visits were made to several Government and private institutes.</li> <li>▪ Guest Lectures from entrepreneur.</li> </ul>
12		During COVID-19 Pandemic students requested for online classes and research updates.	Online-classes and International Webinars.
13		Placement services	Annual Recruitment of students by Private Sector Seed Companies.
14	Parents	Requested minimal Financial support for their wards.	Rs.2000/- financial aid per student for top ranking 3 students in each discipline of study have been disbursed to students in the last five years from the UGC-SAP.
15.		Expressed concern about the safety and progress of their wards.	<ul style="list-style-type: none"> <li>• Mentor-Mentee system was in place to cater the concern of the students.</li> <li>• Department Faculties also serve as Deputy Wardens in various Hostels.</li> </ul>
16	Farmers	Asked for latest developments and happenings.	PPVFRA Training programme to Farmers
17.		Asked for high yielding/remunerative varieties.	<ul style="list-style-type: none"> <li>▪ Annamalai Musk melon.</li> <li>▪ AU-1.</li> <li>▪ Anamalai-Brinjal.</li> <li>▪ AU -1 GSR Rice variety</li> </ul>
18.	Employers , those who come for campus placements banks, private sector seed companies etc.	Expected skilled and technically sound employable candidates with good communication ability.	<ul style="list-style-type: none"> <li>▪ Industrial Tie-up training arranged at various public/private sector.</li> <li>▪ Personality Development Classes</li> <li>▪ Mock-Interviews</li> <li>▪ Group Discussions and Brain Storming Sessions.</li> </ul>

## 6.4.8 Student intake and attrition in the programme for last five years

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
5	4	4	7	5	-	-	-	-	-

## Performance of PG students in Competitive/ Entrance examinations

Sl.No.	Academic Year	PhD in ICAR institutes & State SAUs/Overseas	
		Name of the Students	Institutes of Study
1.	2017-18	Jeevitha, S,	Annamalai University
2.		Nukala Sumanth Kumar (UK),	University of Greenwich UK
3.		Punitha, E	Annamalai University
4.		Vishnupriya, V	Annamalai University
5.	2018-19	Vignesh, M	CPMB - Tamil Nadu Agricultural University
6.	2019-20	Johnny Subakar Ivin, J	Annamalai University
7.		Mary Roshini, A	CPMB - Tamil Nadu Agricultural University
8.		Shobhanadevi, C	Annamalai University
9.	2020-21	Bhuvaneshwari, R	Annamalai University
10.		Merlin Monisha, M	Annamalai University
	2021-22	-	-

Sl. No.	Academic Year	NET Qualified Students
1.	2019-20	Mary Roshini, A

### Employment Details of PG students

Academic Year	Number of students graduated (PG)	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	5	-	-	-	-	-	-	-
2018-19	5	-	1	-	-	-	1	100
2019-20	4	-		-	3	-	3	60
2020-21	4	-	-	-	3	-	3	60
2021-22	7	-	-	-	-	-	-	-

#### 6.4.9. ICT Application in Curricular Delivery

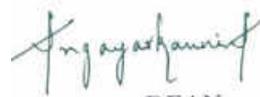
- Videos on Tissue culture, new possibilities of modelling and simulation, shared databases, collaborative tools, remote instrumentation for genetic improvement by gene transfer, protoplasm fusion (in the cell), varieties more tolerant of drought, salt, cold and metals, cloning, micropropagation, plotting the gene maps of plants, bioinformatics.
- Computer tools/Computer-aided algorithms are being used to analyse the behaviour of thousands of genes at a time and are creating a foundation of data for building integrated models of cellular processes
- Practical results have been obtained in identifying active genes in genomic sequences, assembling physical and genetic maps, and predicting protein structure.
- E-resources, PPTs and online journals are also used for effective dissemination of course content.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean .....**A. Angayarkanni**..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
 DEAN  
 FACULTY OF AGRICULTURE  
 ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Seed Science and Technology

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



## M.Sc. (Ag.) in Seed Science and Technology

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#### 6.4. Self Study Report for the Programme

**Name of the Degree Programme: M.Sc. (Ag.) in Seed Science and Technology**

**Offered by: Department of Genetics and Plant Breeding**  
(UGC SAP DRS Phase II & DST FIST supported)

##### 6.4.1. Brief History of M.Sc. (Ag.) in Seed Science and Technology

The division of Agricultural Botany came into existence mainly to cater the instructional needs of UG degree in the year 1958. Later the division was upgraded as the Department of Agricultural Botany in the Faculty of Agriculture in 1980.

The Post graduate programme in Seed Science and Technology was started in the year 2006 in the Department of Agricultural Botany. Subsequently, in the year 2010 the Department was renamed as Department of Genetics & Plant Breeding.

Historical Itinerary	Year of Commencement/Period
Division of Agricultural Botany	1958
Ph.D. in Agricultural Botany	1965
The Division was upgraded as Department of Agricultural Botany	1980
M.Sc. (Ag.) in Genetics and Plant Breeding	1989
Ph.D. in Genetics and Plant Breeding	1992
M.Sc. (Ag.) in Seed Science and Technology	2006
The Department was renamed as Department of Genetics and Plant Breeding	2010
Ph.D. in Seed Science and Technology	2010
M.Sc. (Ag.) in Agricultural Biotechnology	2012
Ph.D. in Agricultural Biotechnology	2019
Renamed as M.Sc. (Ag.) in Plant Molecular Biology and Biotechnology	2019
Renamed as Ph.D. in Plant Molecular Biology and Biotechnology	2019
Renamed as M.Sc. (Ag.) in Molecular Biology and Biotechnology; Ph.D. in Molecular Biology and Biotechnology	2022

The M.Sc. (Ag.) degree programme in Seed Science and Technology, has a total of 55 credits (2017-18 to 2020-21) which includes 20 credits for major courses, 20 credits for Master's thesis research, 09 credits for minor courses, 05 credits for supporting courses, 1 credit for seminar along with non - credit compulsory courses.

From 2021-22 onwards a total of 70 credits which includes 20 credits for major courses, 30 credits for Master's thesis research, 08 credits for minor courses, 06 credits for supporting courses, 05 for common course, 1 credit for seminar along with non - credit compulsory courses.

**Vision**

- To achieve the Status of excellence in Academic and Research
- To promote the use of quality seeds and seed treatment technology for diversifying farmers choice including use of local genetic resources.

**Goals**

- Impart quality education with instructional capacity
- To provide relentlessly pursue new horizons of seed technology through extensive research.
- .Obtain the expected dividends from the use of seeds of improved varieties.

**Objectives**

- To make awareness about seed certification procedures and quality seed production in all the economically important crops for students through Hands on Training.
- To undertake research on need based specific problems in seed science and technology and sort out their solution through scientific and standard procedure.
- Guide the seed techno graduates to identify their professional carrier and emerge as an entrepreneur.

**Strategic plan to achieve Vision and Goal (Seed Science and Technology)**

Goal	Objectives	Implementation of the plan	Performance Matrices/ Timeline	Outcome
Impart quality education with instructional capacity	To make awareness about seed certification procedures and quality seed production in all the economically important crops for students through Hands on Training	Up gradation of course content periodically.  Regular implementation of class and credit seminar to students  Industrial visit, State Seed Farm and Seed Processing Unit	Once in five years	Periodically updated curriculum which helped the students to gain new techniques in seed technology areas  Students were well trained in group discussion and media presentation.
To provide relentlessly pursue new horizons of	To undertake research on need based specific	Guest lecture of the Visiting professor from the other Institutions and technical	Once in semester	Students got wide exposures in the seed technological subjects.

Goal	Objectives	Implementation of the plan	Performance Matrices/ Timeline	Outcome
seed technology through extensive research.	problems in seed science and technology and sort out their solution through scientific and standard procedure.	guidance from the private seed companies  Conducted training program in various areas of seed production and extraction techniques to student	Twice in the year	Make the completed PG students become entrepreneur.
Obtain the expected dividends from the use of seeds of improved varieties.	Guide the seed techno graduates to identify their professional carrier and emerge as an entrepreneur	Technical guidance provided to the student to start the seed business through Training and Placement Cell	Once in a year	The Alumni Mr. U. Tamilmani, (2010-12 Batch) Dr. Dileep kumar (2009-11 Batch) Started successful seed companies in Salem and Cuddalore District

### Accomplishments

#### Research Collaborations

- The Department of Genetics and Plant Breeding has collaborated with various National and International agencies such as **IAEA, FAO, IRRI, IIRR, IIOR, and UGC.**
- The department has strong collaboration with **AICRIP (ICAR) and STRASA (IRRI) (saline tolerant breeding network)** programme.
- Faculties of the Department are actively engaged in **IRRI-Annamalai University (IRRI-AU) MoU on “Multiple Stress tolerant Rice Varieties for TamilNadu”** involving extensive evaluation of elite **Green Super Rice (GSR) lines** since 17.06.2020.

#### Research Fundings

The research environment of the Department got boosted up by funds from

- ✓ **UGC-SAP DRS Phase I & II (102.5 lakhs)**
- ✓ **DST FIST (Rs. 38 lakhs)**
- ✓ **Non-SAP (10 lakhs)**

- ✓RUSA (10 lakhs) and
- ✓TNSCST.
- ✓RGNF.
- ✓Fly Ash mission from NLCIL.

### Research Outcomes

- Standardized hand emasculation and pollination method for hybrid seed production in Sesame is a major outcome of FAO/IAEA research project.
- Annamalai Melon.
- AU-1 rice are the notable contributions of the department.
- Annamalai Brinjal (National Aphid resistant check variety), a popular and major cultivated variety in Cuddalore district of Tamil Nadu.
- AU-1 GSR (Green Super Rice), an elite high yielding, multiple stress tolerant rice variety was released during December, 2020. It is cultivated in the districts of Nagapattinam, Mayiladuthurai, Cuddalore, Villupuram, Kallakurichi, Thiruvallur, Salem, and Madurai.
- **Seed pelleting techniques for sesame, green gram and black gram using fly ash was developed through DST Project.**
- **Sesame seed hardening technique chicory medicinal herb extract was developed through UGC - MRP project**
- **Seed halogenation technique for sesame seed storage through TNSCST project**
- **Seed hardening techniques for paddy, Greengram and brinjal.**
- **SSR marker techniques for varietal identification.**
- **Standardized Bio pelleting using Prosopis spp.**
- **Standardization of tissue culture techniques for sesame, green gram and black gram was developed through DST Project.**
- **Black gram genotypes resistant to YMV was screened using molecular tools through UGC-GDA-XII plan innovative Research project.**

### Achievements by Faculty

- Dr. C.N. Sambandam an eminent vegetable breeder and the first Head of the Department spearheaded the release of Annamalai Brinjal.
- Dr. S. Thirugnanakumar's Doctoral research scholar Dr. R. Narasimman received **Jawaharlal Nehru Post Graduate Research Award from ICAR.**
- Dr. A. Anandan went for hands-on training at **International Rice Research Institute (IRRI), Philippines.**
- Dr. R. Eswaran had undergone training at **Ghent University, Belgium**
- Dr.S.Murugan was invited as **Visiting Professor** by the Dept. of Horticulture, **North Carolina State University, U.S.A.**
- Dr. S. Murugan was invited as **Visiting Scholar/Researcher** by the **Biomedical Sciences Research Institute, Ulster University, UK.**
- Dr. M. Prakash, Professor served as **UGC-SAP Co-Ordinator** for DRS Phase I and II.
- Dr. S. Murugan, Professor served as **UGC-SAP Deputy -Coordinator** for DRS Phase I and II.

- Dr. M. Prakash, Professor is currently serving as **Controller of Examinations**, Annamalai University since, January, 2022.
- Dr. S. Murugan, Professor is serving as **Joint-Director, Directorate of Research and Development (DRD)**, Annamalai University.
- Dr. S. Padmavathi, Professor is serving as **Academic Council Member**, Annamalai University from 2022 onwards.
- Dr. K. Saravanan, Professor is serving as **Faculty Co-Ordinator, IQAC Cell, Faculty of Agriculture** from 2020 onwards.
- Dr.T. Sabesan, Associate Professor is serving as **Deputy Director, Center for Alumni Relations**, Annamalai University since 2019.
- Dr. M. Venkatesan Associate Professor is serving as **Nodal-Officer, Disability Cell**, Annamalai University.
- Dr. S. Vennila, Assistant Professor is serving as **Associating Scientist, Center for Natural Farming and Sustainable Agriculture**.
- **IRRI-AU MoU Team of Department of Genetics and Plant Breeding include Dr. K. Saravanan, Dr. T. Sabesan, Dr.R.Elangaimannan and Dr. B. Sunilkumar as lead plant breeders.**
- **“AU-1 GSR”** - A multi stress tolerant rice variety was released by IRRI-AU MoU Team of Department of Genetics and Plant Breeding.

The faculties also visited various countries and attended research oriented conferences and workshops. They are also actively involved in professional development activities by becoming members in various professional bodies and published research articles in various peer reviewed and high impact factor journals. The majority of the Staff in this discipline has qualified the National Eligibility Test.

#### Departmental Research Metrics :

Topic	Metrics	Source
'h' Index	11	IRINS, AU
i 10 Index	7.9	Google Scholar
Cross-Ref Citations	338	IRINS, AU
Total Citations	747	IRINS, AU

#### Special Lectures

- Dr.V. Vijayakumar, Eastern Connecticut State University, USA
- Prof. C. Ramasamy, Former Vice Chancellor (TNAU), Coimbatore.
- Dr. K.K.Vinod, Principal Scientist, IARI, Regional Centre, Aduthurai.
- Dr. R. Vijayaraghavan, Dean, Adhiyaman College of Agriculture and Research, Krishnagiri.
- Dr.Mohan Andrew Savery, Senior Rice Breeder, KVK, Puducherry
- Dr. M. Subramanian, Former Director of Research, TNAU

- Dr.MuraliGopal, Principal Scientist, ICAR- Central Plantation Crops Research Institute, Kerala.
- Dr. S. Thirumeni, Professor& Head, PAJANCOA, Karaikal.
- Dr.J. KannanBapu, Former Registrar, TNAU
- Dr.Muralidharan, Director, Indian Institute of Pulses Research
- Dr. M. Mageswaran, Director, CPBG, TNAU
- Dr.N. Nadarajan, Professor, Tamil Nadu Agricultural University.
- Mr.UmakanthDubey, Deputy Registrar, PPVFRA, New Delhi
- Ms. Subashini Sridar, Centre for Indigenous Knowledge Systems (CIKS)

#### International and National Seminars/Conferences/Workshops - Organised (2017-2022)

Topic	Metrics
International Conference	01
National Seminar/Conference/Webinars	09
National/ Workshop	08

The department successfully organized the first policy meeting on “National Consultation Workshop on Agro-biodiversity Hotspots and Access and Benefit Sharing” of National Biodiversity Authority (NBA) and PPVFRA.

In March, 2018 the department successfully organized the Plant variety protection Awareness programme for Farmers under the aegis of PPVFRA.

#### Research Publications and Books (2017-2022)

Journal Articles	302
Books & Book Chapters	91

ICAR has recommended two books namely, “A Text book of Seed Science and Technology” “Quantitative Genetics and Crop Breeding” authored by Dr. S. Thirugnanakumar and Co-authors as well as Dr. S. Padmavathi and Co authors for the aspirants of PG and Ph.D. courses in ICAR and affiliated colleges.

#### Student Progression

Students are constantly motivated to take up national level competitive examinations like National Eligibility Test, ARS and were guided through coaching classes with supporting books. The Department is striving hard to produce excellent researchers with outstanding skill sets. The faculty members periodically organize Seminars, Trainings and workshops to impart knowledge on recent development in crop improvement.

Thrust has been given to impart knowledge to students on various aspects of Seed Science and Technology at post graduate level. This ultimately encourages the students to improve their competing ability to express their ability in the competitive examinations. Additionally, coaching classes are being conducted to make the students, facing competitive world. This enables the students to secure placements in World Class coveted overseas institutions, most often with full-funding.

Remedial classes are being offered for slow learners for easy understanding and enhance their performance. By taking Guest lectures with renowned scholars, the knowledge and recent trends of the subjects are being updated.

### Alumni Support

Alumni of the Department placed in SAUs, ICAR Institutions, International Institutes, and Private Sectors act as a major driver of growth providing technical guidance, essential infrastructure, CSR funding and placement.

The alumni donations has resulted in realizing the Dr. C.N. Sambandam Hi-Tech Presentation Hall.

### Departmental Endowment Awards for Students

Sl. No.	Name of the Endowment award/medal for P.G
1.	Srilochani Varadarajulu Prize for top ranking student
2.	Vallar Endowment prize.
3.	Dr. C.N. Sambandam Endowment Award for Seed Science & Technology subject for first rank holder in Seed Science &Technology

### Department Snapshot

Category	Total period	Last five year period (2017-2022)
Number of Publications (Journal Articles)	883	345
Number of Publications (Seminars / Conferences/Symposia)	240	80
Number of Books & Book Chapters	161	22
Numbers of Projects obtained	30	11
Grants (Mobilization (Lakh rupees)	343.13	194.26
Number of Ph.Ds. Produced	5	1
Number of PGs Produced	107	44
Number of Seminars/Conference	32	14

#### 6.4.2. Faculty Strength

The permanent faculty strength appointed in the Department of Genetics and Plant Breeding is furnished below.

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Professor*	9	9	-	1
2.	Associate Professor*	10	10	-	1
3.	Assistant Professor*	12	12	-	3
	<b>Total</b>	<b>31</b>	<b>31</b>	<b>-</b>	<b>5</b>

\*Assigned responsibilities for multiple programmes

### Credentials of the Faculty

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94	747		
1.	Dr. S. Padmavathi © Professor and Head	26	Hybrid seed production, Seed Treatment techniques	19	3	20	3	1	6	3	114
2.	Dr. M. Prakash ©# Professor	26	Stress Physiology and plant Molecular Biology	25	8	72	15	6	17	31	1142
3.	Dr. S. Murugan *# Professor	26	Cytogenetics, Heterosis Breeding, Molecular Plant Breeding, Molecular marker technology	15	3	50	9	2	9	9	242
4.	Dr. S.Thirugnanakumar * Professor (Retired on 30.06.2022)	26	Molecular genetics, Biotechnology, Mutation Breeding, Recombination breeding	28	7	90	5	2	11	11	296

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94	747		
5.	Dr. P. Senthil Kumar *# Professor	24	Heterosis Breeding, Sesame Breeding, Musk melon breeding, Molecular marker technology	22	3	31	-	2	13	16	512
6.	Dr. Y. Anbuselvam * Professor	26	Genetics and Cytogenetics, Biometrics, Biotechnology	23	6	56	10	2	11	12	313
7.	Dr. P. Thangavel * Professor	25	Biometrics, Genetics and Pulse Breeding	18	1	57	3	1	9	9	248
8.	Dr. K. Saravanan * Professor	24	Quantitative Genetics, Biometric analysis	18	4	98	4	3	15	27	1001
9.	Dr. N. Senthil Kumar * Associate Professor	22	Heterosis Breeding in Vegetables	15	3	72	19	9	8	6	231
10.	Dr. Y. Anitha Vasline * Associate Professor	22	Mutation Breeding,	15	1	29	8	4	7	3	89

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
											11
	Associate Professor		Cytogenetics								
11.	Dr. B. Sunil Kumar *# Associate Professor	20	Physiological and Molecular genetics in Pulses	11	1	61	6	4	14	30	1310
12.	Dr. J. Gokulakrishnan * Associate Professor	21	Heterosis Breeding in Rice & Maize	13	2	43	10	6	7	6	169
13.	Dr. R. Elangaimannan *# Associate Professor	21	Heterosis Breeding, Biometrics, physiology & Plant Biotechnology	13	1	43	10	3	6	6	188
14.	Dr. T. Sabesan *# Associate Professor	20	Heterosis breeding, and Molecular Plant Breeding for Abiotic stress.	11	-	61	18	8	13	16	615
15.	Dr. V. Anbanandan * Associate Professor	18	Sugarcane Breeding, Rice Breeding	7	-	33	9	2	5	2	98

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
16.	Dr.G Sathiyarayanan © Associate Professor	19	Seed Halogenation. Hybrid seed production	16	-	90	29	2	11	7.94	747
17.	Dr. S. Ezhil Kumar © Associate Professor	19	Molecular Varietal identification, Seed Production and Seed Testing.	15	-	21	5	2	8	6	222
18.	Dr. P. Karthikeyan * Associate Professor	17	Rice Saline Tolerant	7	-	46	9	3	2	1	20
19.	Dr. M. Venkatesan * Associate Professor	17	Rice Breeding, Innovative Breeding, Hybrid rice	10	-	57	9	2	6	5	171
20.	Dr. R. Ebneezer Baburajan * Associate Professor	19	Heterosis Breeding, Resistance Breeding	6	-	34	19	4	9	9	241
21.	Dr. R. Eswaran *# Assistant Professor	19	Heterosis Breeding, Molecular	12	-	63	22	5	3	1	36

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94			
			Breeding								
22.	Dr. C. Praveen Sampath Kumar *# Assistant Professor	18	Heterosis Breeding in Bhendi	10	-	73	19	3	8	7	188
23.	Dr. J.L. Joshi *# Assistant Professor	16	Heterosis Breeding in Bhendi	8	-	43	11	2	2	1	31
24.	Dr. R. Anandan # Assistant Professor	16	Plant Molecular Biology and Biotechnology	8	-	33	5	1	8	6	224
25.	Dr. K.R. Saravanan *# Assistant Professor	16	Screening genotypes for saline Ecosystem	12	-	72	21	4	5	1	58
26.	Dr. S. Vennila *© Assistant Professor	16	Mutation Breeding, Cytogenetics	8	-	43	27	5	5	3	75
27.	Dr. S. Suganthi *© Assistant Professor	16	Recombination Breeding, Crop Diversity Analysis	8	-	41	26	4	5	3	105
28	Dr. S. Ranjith	14	Rice and Sesame	8	-	31	24	3	5	2	72

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94	747		
	Rajaram *© Assistant Professor		Breeding								
29.	Dr. A. Kamaraj © Assistant Professor	13	Pre sowing seed enhancement treatment, Seed testing	7	-	34	18	2	3	2	58
30.	Dr. P. Satheesh Kumar *© Assistant Professor	13	Heterosis Breeding, Mutation Breeding.	7	-	50	18	4	6	4	160
31.	Mr. V. Arivoli * Assistant Professor	12	Recombination Breeding	-	-	0	-	-	-	-	-
32.	Dr. R. Narayanan *© Assistant Professor	12	Recombination breeding, Mutation Breeding	7	-	15	8	2	2	1	23

\* - Genetics and Plant Breeding, ©- Seed Science and Technology, # - Molecular Biology and Biotechnology

## List of Project Handled - Last five years

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
1.	Screening Bhendi genotypes ( <i>Abelmoschusculentus</i> (l.) moench) (rice fallow) for resistance to yellow vein mosaic virus disease combined with high yield Suitable for Coastal Ecosystem.	N. Senthil Kumar	2013-2017	UGC	15.42
2.	Exploitation of medicinal herbs to alleviate moisture stress and enhancing yield potential in sesame ( <i>Sesamumindicum</i> L) under rainfed condition through molecular approach	Dr. G. Sathiya Narayanan Dr. B. Sunil Kumar Dr. R. Anandan	2013-2017	UGC	7.95
3.	DST -FIST	Dr. S. Murugan	2013-2018	DST	38.00
4.	Development of stress tolerance varieties for coastal regions of TamilNadu in mandate crops (UGC SAP DRS Phase II)	Dr. M. Prakash Dr.S.Murugan	2015-2020	UGC	102.50

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
5.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic back ground of Black gram ( <i>Vignamungo</i> (L.)	Dr. S. Murugan Dr. M. Prakash Dr. R. Anandan Dr. J. Gokulakrishnan	2016 -2017	UGC	1.25
6.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic backgrounds of blackgram ( <i>Vignamungo</i> L.) (DST PURSE Phase II)	Dr. S. Murugan	2018-2021	DST-PURSE	5.00
7.	Green Super Rice for TamilNadu: Assessing multiple abiotic and biotic stress tolerance and yield potency under varying environment for sustaining production and ensuring nutritional integrity	Dr. R. Elangaimannan Dr. K. Saravanan Dr. T. Sabesan Dr. B. Sunilkumar Dr. S. Murugan	2021-2023	RUSA	10.00
8.	Technology development for biofortification through micronutrients	Dr. Elayaraja	2022-2024	RUSA	10.13

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
	and bioactive compounds for protection and enhancement of human health in coastal ecosystem	Dr. N. Senthilkumar			
<b>TOTAL (A)</b>					<b>190.25</b>
<b>Private Sector Projects</b>					
Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
1.	Efficacy trials with Modulin on the expression ,growth ,development and yield of rice crop	Dr. G. Barathan Dr. S. Murugan	2016-2017	T-Stanes and company Ltd.,Coimbatore	2.10
2.	Evaluation of Methyl violet Dye in the formulation of Carboxin 37.5% +Thiram 37.5% WS on groundnut.	Dr. T. Sabesan	2018 - 2019	Arysta Life Science, Mumbai	0.91
3.	Digitalization of data on Crop cultivation practices of major Agricultural and Horticultural crops	Dr. S. Murugan	2018-2019	Bayer crop Science	1.00
<b>TOTAL (B)</b>					<b>4.01</b>
<b>TOTAL A+B</b>					<b>194.26</b>

**Awards/Recognitions/Countries visited by Faculty**

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
1	Dr.S.Murugan	Visiting Professor, North Carolina State University (2017) Fellow of Indian Society of Genetics and Plant Breeding, New Delhi	U.S.A , Water melon and cucumber breeding, North Carolina State University, U.S.A
2	Dr. G. Sathyanarayanan	Excellence in Research Award (2017)	S & T SIRI, Telangana
3	Dr. M. Prakash	Best research publications award, 2012-2017. J JChinoy Gold Medal Award- Indian Society of Plant Physiology, 2017. Fellow - Indian Society of Plant Physiology, New Delhi, 2015. (FISPP). Fellow - National Academy of Biological Sciences, Chennai. 2016 (FNABS).	
4	Dr.S.Thirugnanakumar	Fellow of Indian Society of Oil Seed Research, Fellow of HIND AGRI-HORT Society. ICAR Citation for best Thesis award 2007 Dr.Kannaiyan endowment - Best researcher award -2018	
5	Dr.R. Anandan	Best oral presentation award (2017)	National Conference on Innovations in Biotechnology at Madurai Kamaraj University during 14 <sup>th</sup> & 15 <sup>th</sup> Dec., 2017.
6	Dr. T. Sabesan	Editorial Board Member (2017 onwards)	Journal of Innovative Agriculture (eISSN: 2394-5389)
7	Dr. R.Eswaran	Summer course on "Modern Breeding Techniques for the Improvement of leguminous plants" (2017).	Institute of plant biotechnology for developing countries , Ghent University , Belgium
8	Dr. K.R. Saravanan	Scientist of the year award (2018)	ICFA, Jharkand
9	Dr. K.R. Saravanan	Outstanding Breeder Award (2019)	PRAGATI, Jharkand

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
10	Dr. S. Murugan	Member, Panel of Examiners, TamilNadu Public Service Commission (TNPSC) ( 2019)	
11	Dr. T. Sabesan	Confidential work at TamilNadu Public Service Commission (TNPSC), Chennai (2019)	(TNPSC), Chennai
12	Dr. M. Venkatesan	Best Oral Presentation award (2019)	University of Hyderabad
13	Dr. S. RanjithRajaram	Best Oral Presentation (2019)	PRAGATI, Jharkhand
14	Dr.T.Sabesan	Best paper Award (First Place) in the session Genetics (2020)	In the 6 <sup>th</sup> National Conference in Agricultural Scientific Tamil held International Institute of Tamil Studies, Chennai during Dec 21-22, 2020.
15	Dr.B. SunilKumar	Outstanding Scientist Award (2018)	Conferred by the Society of Tropical Agriculture, New Delhi
16	Dr. G. Sathyanarayanan	Best Researcher Award (2020)	ICEACBS, Puducherry
17	Dr. M. Venkatesan	Best Scientist Award (2020)	ICEAACBS, Puducherry
18	Dr. S. Thirugnanakumar	Editorial member for the journal “Advances in Plant Sciences”	
19	Dr. T. Sabesan	Reviewer Excellence Certificate (2020)	<i>ActaEcologicaSinica</i> (Elsevier), Agricultural Science Digest (ARCC)
22	Dr. S. RanjithRajaram	Academic Excellence Award (2021)	Institute of Researchers, Wayanad, Kerala
23	Dr. M. Venkatesan	Best Teacher Award (2021)	Global Management Council, Ahmadebad
24	Dr. Y. Anbuselvam	Reviewer Excellence Award (2021)	ARCC Journal
25	Dr. T. Sabesan	Excellence in Reviewing (2022)	International Journal of Plant & Soil Science
26.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Asian Journal of Biotechnology and Genetic Engineering
27.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Current Journal of Applied Science and Technology
28.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	International Journal of Environment and Climate Change

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
29.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	Annual Research and Review in Biology
30.	Dr. S. Vennila	Best Oral Presentation (2018)	Dept. of Genetics and Plant Breeding, Faculty of Agriculture, Annamalai University
31.	Dr. S. Vennila	Best Oral Presentation (2020)	Dept. of Plant Pathology, Faculty of Agriculture, Annamalai University
32.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University
33.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Agrl. Extention, Faculty of Agriculture, Annamalai University
34.	Dr. G. Sathiyarayanan	Best Poster Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University



### 6.4.3. Technical and Supporting staff

The responsibility of the technical and supporting staff of the Seed Science and Technology is given below.

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Assistant*	4	4	-	1
2.	Lab assistant*	4	4	-	2
3.	Field assistant*	5	5	-	2
<b>Total</b>		<b>13</b>	<b>13</b>	<b>-</b>	<b>5</b>

S. No.	Sanctioned post	Staff in place	Responsibilities
1.	Supporting Staff*	4	<ul style="list-style-type: none"> <li>Assisting in Data processing and documentation.</li> <li>Maintenance of office files and official records.</li> <li>Execution of purchase and settlement of bills.</li> <li>PG and Ph.D admissions work</li> <li>UG, PG and Ph.D Examination works</li> <li>Computer typing works.</li> </ul>
2.	Technical Staff* (Department)	4	<ul style="list-style-type: none"> <li>Assisting laboratory classes.</li> <li>Supervision of labourers</li> <li>Maintenance of stock registers.</li> </ul>
	Technical Staff* (Research)	3	<ul style="list-style-type: none"> <li>Layout of field trials.</li> <li>Supervision of labourers</li> <li>Maintenance of stock registers.</li> </ul>
3	Field Staff*	2	<ul style="list-style-type: none"> <li>Layout of field trials.</li> <li>Recording of research trial observations.</li> </ul>

\*Assigned responsibilities for multiple programmes

#### 6.4.4. Classrooms and Laboratories

Sl.No.	Abstract of Facilities	Numbers
1.	HOD Room	1
2.	Office Room	1
3.	Staff Rooms	5
4.	UG Laboratories	3
5.	PG Lecture Halls	3
6.	Ph.D. Lecture Halls	3
7.	Field Demonstration Hall	1
8.	PG & Ph.D. Laboratories	5
9.	Department Library	1
10.	Hi-Tech Hall	1
11.	Pot Culture Yard	3
12.	Plant Breeding Experimental Farm (Field No. 13,14,15 & 16)	4

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
1.	HOD Room	1	(15x9.7) 145.5	1	-
2.	Office Room	1	(16x9.7) 155.2	3	-
3.	Staff Room-1	1	(17.8x9.2) 163.76	2	-
4.	Staff Room-2	1	(17.8x9.2) 163.76	3	-
5.	Staff Room-3	1	(17.8x9.2) 163.76	3	-
6.	Staff Room-4	1	(17.8x9.2) 163.76	3	-
7.	Staff Room-5	1	(31.5x19.4) 611.1	13	-
8.	UG Laboratory-1	1	(30x36.2) 1086.75	50	OHP projector, LCD television, monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
9.	UG Laboratory-2	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
10.	UG Laboratory-3	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
11.	PG Lecture Hall (Genetics & Plant Breeding)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like LCD projector and Smart TV.
12.	PG Lecture Hall (Seed Science & Technology)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like Smart TV

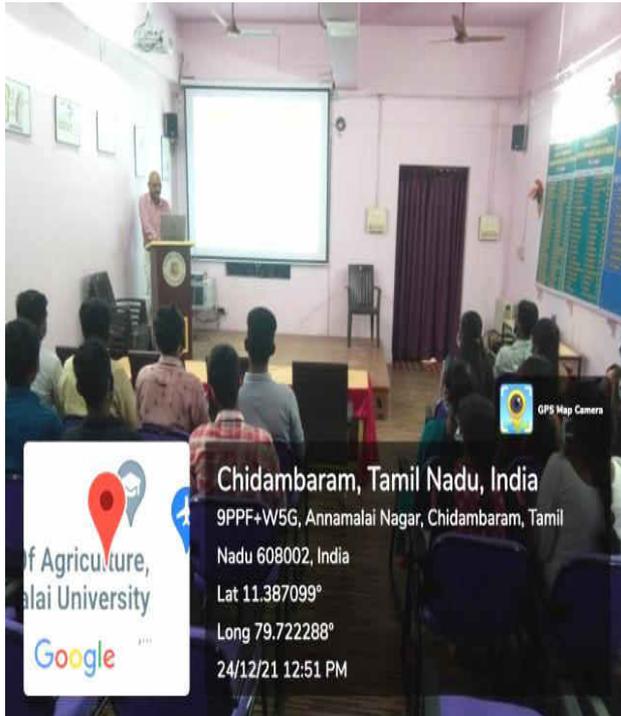
Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
13.	PG Lecture Hall (Molecular Biology & Biotechnology)	1	(30x12.73) 381.98	10	Smart class rooms are available with facilities like LCD projector (Smart board) and Smart TV
14.	Ph.D. Lecture Hall (Genetics & Plant Breeding)	1	(19.8x11) 220	10	Class rooms are available with Smart TV facility.
15.	Ph.D. Lecture Hall (Seed Science & Technology)	1	(19.8x11.6) 229.6	10	Class rooms are available with Smart TV facility.
16.	Ph.D. Lecture Hall (Molecular Biology & Biotechnology)	1	(17.8x9.2) 163.7	6	Class rooms are available with Smart TV facility.
17.	Field Demonstration Hall	1	(30x20) 600	30	For Practical classes
18.	Cytology & Cytogenetics Laboratory	1	(26.5x20) 530	20	The laboratory is equipped with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber).
19.	Seed technology Laboratory	2	(15x6.2) + (15x6.2) 94+94	5+5	The laboratory is equipped with seed technological instruments like seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
20.	Plant Tissue culture Laboratory	1	(10x8) 80	5	Plant tissue culture laboratory is equipped with laminar air flow chamber, autoclave and incubator, mini thermo cycler, electronic weighing balance, gel documentation chamber.
21.	Molecular Biology Laboratory	1	(30x11.3) 339	7	Molecular biology laboratory is equipped with major instruments like BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-8 transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge
22.	Department Library	1	(30x22) 660	25	The Department Library is provisioned with 612 text and reference books, PG and Ph.D. thesis, National and International journals, conference proceedings and volumes, 20 project reports.
23.	Dr. C.N.Sambandam Hi-Tech Hall	1	(30x22) 660	50	Hi-Tech presentation hall
24.	Pot Culture Yard-GPB	1	0.03 ha	-	To conduct preliminary evaluation trials and seed multiplication.
25.	Pot Culture Yard-SST	1	0.03 ha	-	To conduct preliminary trials and germination studies.
26.	Pot Culture Yard-PMBB	1	0.03 ha	-	For hardening and to conduct preliminary trials.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
27.	Plant Breeding Experimental Farm-Field no.13	1	0.73 ha.	-	Conducting trials for post graduate students and AICRIP trials
28.	Plant Breeding Experimental Farm-Field no.14	1	0.58 ha.	-	Conducting trials for post graduate students and AICRIP trials
29.	Plant Breeding Experimental Farm-Field no.15	1	0.80 ha.	-	Conducting trials for post graduate students and AICRIP trials
30.	Plant Breeding Experimental Farm-Field no.16	1	0.69 ha.	-	Conducting trials for post graduate students and AICRIP trials

**Instrument Facilities:**

S.No	Items	Nos.
1.	Dissection Microscope	46
2.	Compound Microscope	10
3.	Electronic Moisture Meter	2
4.	Electronic Balance	4
5.	Seed Germinator	2
6.	Automatic seed / Grain counter	1
7.	Hot air Oven	1
8.	BOD Incubator	1
9.	Fluorescence Microscope	1
10.	Centrifuge	3
11.	Growth Chamber	2
12.	Distillation Assembly	1
13.	PCR	3
14.	Gel document	2
15.	PH meter	2
16.	Orbital Shaker	1
17.	Photo synthetic meter	1
18.	Water Potential meter	1
19.	Electrophoresis	4
20.	Deep Freezer	3
21.	Refrigerator	2
22.	UV Nano spectrophotometer	1
23.	Sequencing Gel apparatus	1
24.	Ultra sonicator	1
25.	Desiccator	1
26.	Laminar Airflow chamber	2
27.	Autoclave	1
28.	Micro Air oven	2
29.	Water Bath	2
30.	Vaccum emasculator	1
31.	Triers	4
32.	Seed – Dividers	3
33.	Seed Blower	1
34.	Purity Working Board	4
35.	Seed Pelleting machine	1



#### 6.4.5. Conduct of Practical and Hands-on-Training is provided

Practical experiments are conducted during the practical classes and imparted with experimental methodology on seed structure, sampling, germination test, seedling evaluation, tetrazolium test and moisture estimation. The existing students and staff ration 1:10. Interactive learning methodology is adopted to make effective learning of the students. Theory classes are handled in single batches. Seminar presentation and assignments are allotted to the students as and when necessary.

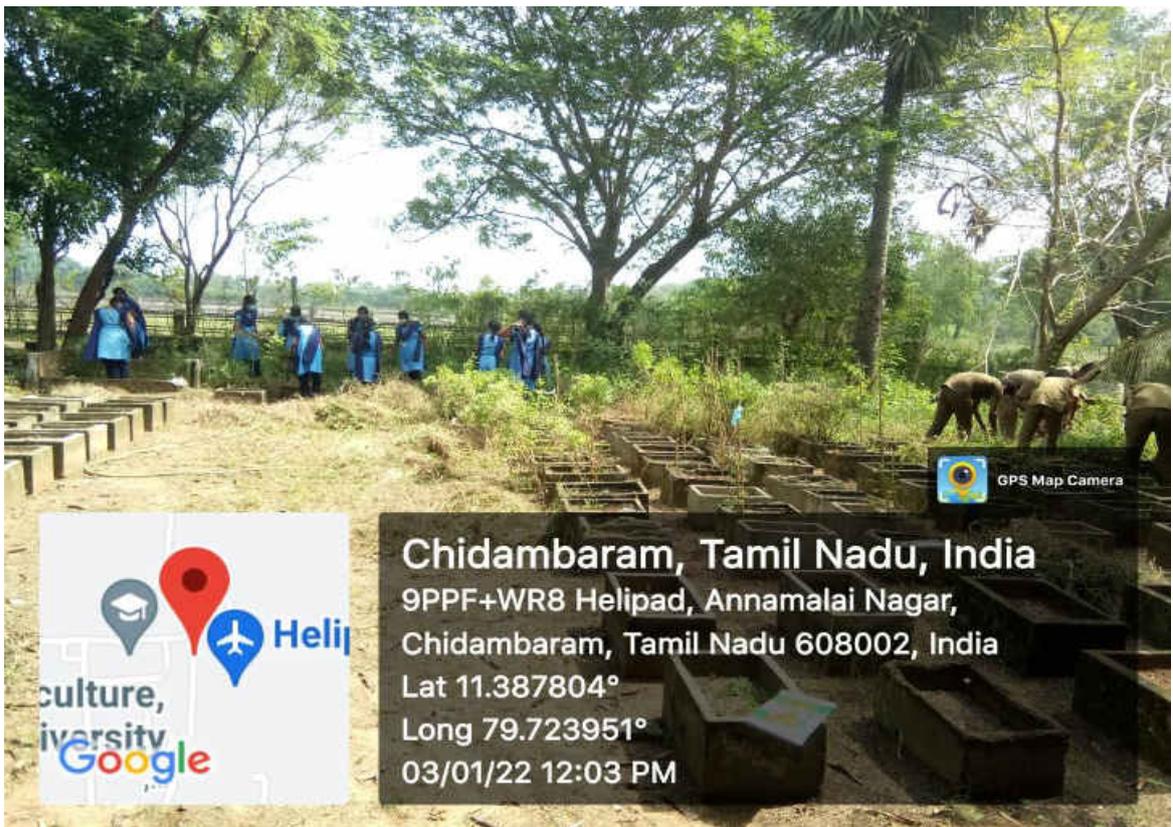
Course	Practicals / Hands-on training	Laboratory / Field Visits
Floral Biology, Seed Development and Maturation	Study of various types of flowers of monocot and Dicot Pollen Morphology.  Pollen viability studies	Collection of flowers of different crops and study about floral parts  The students have been trained in microscopy and dissection of plant specimens.  Through Acetocaramine dye
Principles of Seed Production	Exposure about various pollination systems in crop plants  Emasculation and pollination techniques in field crops.  Types of isolation and its impact. Hybrid seed production techniques.	Hands on training imparted to students on the basic tools of plant breeding.  Students are also taken to research stations like TRRI, Aduthurai, State Seed Farm, Milalur and Seed Processing Unit, Vandrayanpattu  Egg Floatation Techniques, Seed dormancy breaking treatment, seed pelleting, seed hardening Acid delinting of cotton Seed extraction in Tomato, Brinjal and Bhendi
Seed Quality Testing	Structure of Monocot and Dicot Seeds  Purity analysis Germination Test Tetrazolium Test Seed health test	Students have been trained in laboratory  Visit to Seed testing Lab, Cuddalore
Seed Storage and Deterioration	Packaging Material Accelerated Ageing Estimation of	Exhibiting different packaging material based on quantity of seeds per acre Visit to warehouse, Vandrayanpattu

	Protein and Carbohydrate	
Seed legislation and Certification	Field Inspection  Preparation of field visit report  Grow out Test Sampling Procedures	Students have been trained in the Experimental farms Visit to Plant Quarantine lab, Trichy Visit to Seed certification agency Seed Processing Unit, Milalur
Research	Seed Treatment for Abiotic Stress tolerance Varietal identification through Molecular techniques Storage studies of different crops	Collection of seed material from NBPGR, New Delhi, IIHR, Bangalore, RRS, TNAU SAUs, and progressive farmers etc.

### Study Tours / Industrial Visits

Students are also taken to different research stations like

Sl. No.	Place of Visit	Year
1	Kerala Agricultural University	2022
2	CTCRI Kerala	2017, 2022
3	Rajiv Gandhi Center for Biotechnology and Botanical Garden, Trivendrum, Kerala	2017, 2022
4	Dr. S. Thirugnanakumar, Coimbatore,	2022
5	Central Instrumentation Laboratory, Annamalai University	2017, 2018, 2022
6	NRCB, Trichy,	2022
7	IICPT, Tanjore,	2017, 2018,
8	Rasi seeds,	2022
9	Maha seeds.	2022
10	Plant Quarantine Centre, Trichy,	2022
11	Indian Institute of Pulse Research, Vamban,	2022
12	Regional Research Station, Aduthurai,	2017, 2022
13	State Seed Farm, Vandrayanpattu,	2022
14	KVK, Pondicherry	2022
15	PAJANCOA, Karaikal.	2017, 2018, 2022



#### 6.4.6. Supervision of students in PG programme

Each Post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise a Major Adviser (Chairman) and two members. Out of the two members, one will be from the same Department of Faculty of Agriculture and the other in the related field from the other Departments of Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The chairman in consultation with the Head of the Department will nominate the other two members. The Duties of advisory committee is as follows:

1. Guiding students in drawing the outline of research work.
2. Guidance throughout the programme of study of the students.
3. Evaluation of research and seminar credits.
4. Correction and finalization of thesis draft.
5. Conduct of qualifying and final Viva-Voce examination.
6. The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
7. Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.
8. Mentor - Mentee

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.

Sl. No	Name of Faculty / Scientist	Whether qualify for supervision of PG Programme?	Whether qualify for supervision of Ph.D. Programme?	Name of students Guided	Degree Programme	Year of submission	Title of thesis
<b>2017-2018</b>							
1	Dr. G. Sathiyarayanan	Yes	Yes	Ezhilarasan, K	M.Sc. (Ag.) Seed Science and Technology	2018	Seed technological studies in Jack
2	Dr. A. Kamaraj	Yes	Yes	Gnanasekar, R	M.Sc. (Ag.) Seed Science and Technology	2018	Studies on seed quality parameters of bhendi ( <i>Abelmoshcus esculentus</i> L. Moench) under salinity stress
3	Dr. S. Padmavathi	Yes	Yes	Kaviyarasan, G	M.Sc. (Ag.) Seed Science and Technology	2018	Studies on organic seed production in sesame ( <i>Sesamum indicum</i> L.)
4	Mr. S. Ezhil Kumar	Yes	Yes	Naveen, S.M	M.Sc. (Ag.) Seed Science and Technology	2018	Characterization of paddy variety by mm physiological and molecular markers.
5	Dr. M. Prakash	Yes	Yes	Pallavamallan, S	M.Sc. (Ag.) Seed Science and Technology	2018	Studies on organic seed enhancement techniques in greengram and bhendi
6	Dr. S. Vennila	Yes	Yes	Pushpakaran, M	M.Sc. (Ag.) Seed Science and Technology	2018	Studies on effect of seed polluting on seed quality improvement in blackgram
7	Dr. S. Suganthi	Yes	Yes	Raghul, S	M.Sc. (Ag.) Seed Science and Technology	2018	Studies on seed quality characters of parents and hybrids in Brinjal ( <i>Solanum melongina</i> L.)
8	Dr. S. Thirugnanakumar	Yes	Yes	Sabarinathan, S	M.Sc. (Ag.) Seed Science and Technology	2018	Seed genetics in Rice

9	Dr. P. Thangavel	Yes	Yes	Sakthi Sridharan, B	M.Sc. (Ag.) Seed Science and Technology	2018	Seed genetics in greengram
10	Dr. K. Saravanan	Yes	Yes	Sarathi, K	M.Sc. (Ag.) Seed Science and Technology	2018	Studies on effect of seed hardening in blackgram on seed quality under salinity condition.
<b>2018 – 2019</b>							
1	Dr. G. Sathiyarayanan	Yes	Yes	Agaligai, K	M.Sc. (Ag.) Seed Science and Technology	2019	Effect of seed enhancement techniques in minout millets (Varagu)
2	Dr. A. Kamaraj	Yes	Yes	Elavarasan, E	M.Sc. (Ag.) Seed Science and Technology	2019	Role of seaweed application on seed quality and seed yield in rice
3	Dr. S. Padmavathi	Yes	Yes	Gowrisanker, G	M.Sc. (Ag.) Seed Science and Technology	2019	Role of seaweed application on seed quality and seed yield in greengram
4	Dr. S. Ezhil Kumar	Yes	Yes	Karthikeyan, A.R	M.Sc. (Ag.) Seed Science and Technology	2019	Varietal identification in green gram by using molecular markers
5	Dr. M. Prakash	Yes	Yes	Maamallan, S	M.Sc. (Ag.) Seed Science and Technology	2019	Organic seed pelleting in bhendi
6	Dr. N. Senthil Kumar	Yes	Yes	Seeman Sethupathi, S	M.Sc. (Ag.) Seed Science and Technology	2019	Studies on genetic diversity in rice ( <i>Oryza sativa</i> L.) for grain yield and grain quality traits
7	Dr. J. Gokulakrishnan	Yes	Yes	Srimathi, S	M.Sc. (Ag.) Seed Science and Technology	2019	Studies on the efficacy of seed treating materials & packing materials on storage in maize
8	Dr. S. Ezhil Kumar	Yes	Yes	Vedhavalli, C	M.Sc. (Ag.) Seed Science and Technology	2019	Varietal characterization of cowpea by using molecular marker

9	Dr. R. Ebnezer Babu Rajan	Yes	Yes	Vigneshwaran	M.Sc. (Ag.) Seed Science and Technology	2019	Effect of pre-sowing seed treatment on blackgram
10	Dr. G. Sathiyarayanan	Yes	Yes	Yazhini, S	M.Sc. (Ag.) Seed Science and Technology	2019	Effect of various seed enhancement techniques in minor millets (Ragi)
<b>2019 – 2020</b>							
1	Dr. S. Padmavathi	Yes	Yes	Dhanasekaran, V	M.Sc. (Ag.) Seed Science and Technology	2020	Studies on the effect of seed priming on seed quality characters of blackgram
2	Dr. S. Ezhil Kumar	Yes	Yes	Manikandan, V	M.Sc.(Ag.) Seed Science and Technology	2020	Effect of pulsed electromagnetic seed treatment in blackgram on seed quality and seed storability
3	Dr. G. Sathiyarayanan	Yes	Yes	Midhulrana, A	M.Sc.(Ag.) Seed Science and Technology	2020	Studies on various seed enhancement studies in cowpea
4	Dr. A. Kamaraj	Yes	Yes	Pavithra, R	M.Sc.(Ag.) Seed Science and Technology	2020	Studies on effect of presouce seed and trial application conditioning on seed quality cowpea ( <i>Vigna unguiculato</i> (L).walper)
5	Dr. S. Vennila	Yes	Yes	Prathap, M	M.Sc.(Ag.) Seed Science and Technology	2020	Studies on effect of seed priming and folice spray on seed quality characters of rice under saline condition
6	Dr. C. Praveen Sampath Kumar	Yes	Yes	Priyadharshini, M	M.Sc.(Ag.) Seed Science and Technology	2020	Studies on effect of pre-sowing seed conditioning on seed quality in blackgram
7	Dr. M. Venkatesan	Yes	Yes	Selvanathan, L	M.Sc.(Ag.) Seed Science and Technology	2020	Studies on various seed enhancement treatment in blackgram

8	Dr. P. Karthikeyan	Yes	Yes	Senthamilarasi, S	M.Sc.(Ag.) Seed Science and Technology	2020	Studies on the effect of seed enhancement yield and quality in rice
9	Dr. S. Padmavathi	Yes	Yes	Sundharan, M	M.Sc.(Ag.) Seed Science and Technology	2020	Studies on effect of seed enhancement and seed quality characters of bhendi
10	Dr. J.L. Joshi	Yes	Yes	Venkataramanan, S	M.Sc.(Ag.) Seed Science and Technology	2020	Influen of doller vine extract on pulse beeth management and seed longevity in major pulses.
<b>2020 - 2021</b>							
1	Dr. S. Padmavathi	Yes	Yes	Arulkumaran, S	M.Sc.(Ag.) Seed Science and Technology	2021	Studies on pre-sowing seed enhancement treatment in differentially aged seeds of paddy ( <i>Oryza sativa</i> )
2	Dr. G. Sathiyarayanan	Yes	Yes	Arunkumar, S	M.Sc.(Ag.) Seed Science and Technology	2021	morphological and Physical changes during Seed storage in various crop seeds
3	Dr. S. Ezhil Kumar	Yes	Yes	Krishnaveni, D	M.Sc.(Ag.) Seed Science and Technology	2021	Effect of seed treatment for enhancing seed quality of redgram
4	Dr. A. Kamaraj	Yes	Yes	Prasanth, S	M.Sc.(Ag.) Seed Science and Technology	2021	Role of pre-sowing seed treatment on seed technological studies in rice under saline soil of coastal area of tamilnadu
5	Dr. C. Praveen Sampath Kumar	Yes	Yes	Sakthimalar, M	M.Sc.(Ag.) Seed Science and Technology	2021	Studies on the affect of various pre sowing seed treatment on blackgram

2021 - 2022							
1	Dr. S. Padmavathi	Yes	Yes	ABISHEK, T M	M.Sc.(Ag.) Seed Science and Technology	2022	Studies on the Effect of seed pelletization on viability vigour and production potential of Okra ( <i>Abelmoscus esculantus</i> (L.) Moench) cv. Arka Anamika
2	Dr. G. Sathiyarayanan	Yes	Yes	ANUSHA R. M	M.Sc.(Ag.) Seed Science and Technology	2022	Effect of various seed priming treatments on seed yield and quality in Bhendi cv. Arka Anamika
3	Dr. S. Ezhil Kumar	Yes	Yes	BAYANAPALLI VENKATARAMIRE DDYGARI MANASA	M.Sc.(Ag.) Seed Science and Technology	2022	Studies on the effect of various seed hardening treatments on seed quality in blackgram var. TAU-1 Under Drought condition
4	Dr. A. Kamaraj	Yes	Yes	BHUVANA, L	M.Sc.(Ag.) Seed Science and Technology	2022	Studies on effect of seed management practices in blackgram ( <i>Vigna mungo</i> (L) Hepper)
5	Dr. T. Sabesan	Yes	Yes	INDHU, V	M.Sc.(Ag.) Seed Science and Technology	2022	Effect of various seed priming and coating treatments in Blackgram ( <i>Vigna mungo</i> L.) cv. VBN 6
6	Dr. P. Karthikeyan	Yes	Yes	JAYASURYA, S	M.Sc.(Ag.) Seed Science and Technology	2022	Influence of organic and inorganic pre-sowing seed treatments for enhancing growth, seed yield and quality in tomato ( <i>Solanum Lycopersicum</i> L.) cv. PKM-1
7	Dr. M. Venkatesan	Yes	Yes	MANOJKUMAR, D S	M.Sc.(Ag.) Seed Science and Technology	2022	Efficacy of seed treatment with edible and non-edible oils in stored blackgram cv. ADT 3 and VBN 6.

8	Dr. R. Ebneezer Baburajan	Yes	Yes	MOHAMED SHAFIQ, H	M.Sc.(Ag.) Seed Science and Technology	2022	Studies on effect of seed priming on seed quality and yield traits of Okra ( <i>Abelmoscus esculantus(L) Moench</i> ) cv. Arka Anamika
9	Dr. R. Eswaran	Yes	Yes	VANISRI, D	M.Sc.(Ag.) Seed Science and Technology	2022	Studies on efficacy of botanicals on seed pelleting for enhancing seed quality and seed yield in Brinjal ( <i>Solanum melongena L.</i> ) Var. Gundu Bhavani

**6.4.7. Feedback of stakeholders**

The feedback is obtained for every course at the end of each semester and the consolidated action taken report is presented in the following table.

Sl. No.	Stakeholders	Feedback	Action taken
1	Students	Requested special classes for slow learning students	Remedial classes are taken for slow learners.
2		Asked for free ICAR coaching classes.	Special coaching classes for ICAR and competitive examinations.
3		Expressed the need for air conditioned Seminar Hall with A/V facilities.	Established Hi-Tech seminar Hall with funding from Departmental alumni and contribution from department Faculties.
4		Requested for re-fencing of damaged segments.	Re-fencing Plant Breeding Farm for conduct of various field trials.
5		Asked facility to carry out rapid emasculation in short span of time in rice.	Vacuum emasculator for ease and rapid hybridization in rice.
6		Expressed the need for free access to online journals for research at Department itself.	Provided Wi-Fi INFLIB net / MYLOFT for easy access of journals for research.
7		Requested for more seating capacity and books.	Enhanced Department Library facilities in terms of space and inventory.
8		Asked separate area for preliminary screening.	Partitioning of Pot-Culture Yard for three disciplines of study.
9		Requested smart class room facility.	Smart TVs in classrooms for visual presentation of videos and power points.
10		Expected guidance for their Progression.	“WhatNext?!”-A student oriented guidance programme by Experts was conducted on 2022.

Sl. No.	Stakeholders	Feedback	Action taken
11	Students	Asked for exposure to become an entrepreneur.	<ul style="list-style-type: none"> <li>▪ Industrial Visits were made to several Government and private institutes.</li> <li>▪ Guest Lectures from entrepreneur.</li> </ul>
12		During COVID-19 Pandemic students requested for online classes and research updates.	Online-classes and International Webinars.
13		Placement services	Annual Recruitment of students by Private Sector Seed Companies.
14	Parents	Requested minimal Financial support for their wards.	Rs.2000/- financial aid per student for top ranking 3 students in each discipline of study have been disbursed to students in the last five years from the UGC-SAP.
15.		Expressed concern about the safety and progress of their wards.	<ul style="list-style-type: none"> <li>• Mentor-Mentee system was in place to cater the concern of the students.</li> <li>• Department Faculties also serve as Deputy Wardens in various Hostels.</li> </ul>
16	Farmers	Asked for latest developments and happenings.	PPVFRA Training programme to Farmers
17.		Asked for high yielding/remunerative varieties.	<ul style="list-style-type: none"> <li>▪ Annamalai Musk melon.</li> <li>▪ AU-1.</li> <li>▪ Anamalai-Brinjal.</li> <li>▪ AU -1 GSR Rice variety</li> </ul>
18.	Employers , those who come for campus placements banks, private sector seed companies etc.	Expected skilled and technically sound employable candidates with good communication ability.	<ul style="list-style-type: none"> <li>▪ Industrial Tie-up training arranged at various public/private sector.</li> <li>▪ Personality Development Classes</li> <li>▪ Mock-Interviews</li> <li>▪ Group Discussions and Brain Storming Sessions.</li> </ul>

**6.4.8 Student intake and attrition in the programme for last five years**

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
10	10	5	9	8	-	-	-	-	-

**Performance of PG Students in competitive/ Entrance Exam**

Academic Year	Name of the Students	
	PhD in ICAR institutes & State SAUs	NET/ARS Qualified
2017-18	Kalaiyarasi, G	Dinesh, R
2018-19	Naveen, S.M. Sabarinathan, S	Ezhilarasan, K, Gnanasekar, R Raghul, S
2019-20	Gowrisankar, G Karthikeyan, A.R. Seeman Sethupathi, S Srimathi, S Vedavalli, C	Seeman Sethupathi, S
2020-21	Midhulrana, A Sundaran, M	-
2021-22	-	-

**Employment details of PG Students**

Academic year	Number of Students Graduated (PG)	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	10	-	2	-	3	2	7	70
2018-19	10	-	-	-	1	2	3	30
2019-20	10	-	1	-	2	1	4	40
2020-21	5	-	-	-	1	1	2	40
2021-22	10	-	-	-	-	-	-	-

**6.4.9. ICT Application in Curricular Delivery**

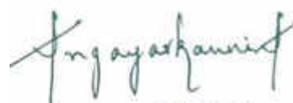
- Videos on seed extraction technique, purity separation, seed germination, seed upgrading based on length, shape, size, colour, texture, seed hydration – dehydration techniques, seed priming using various plant products, seed coating treatment and seed pelleting techniques.
- Software on Agres, WASP and Agri Stat, e-resources, PPTs and Online journals are used for effective dissemination of course content.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **A. Angayarkanni** ..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Soil Science

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



**M.Sc. (Ag.) in Plant Pathology**  
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6.4.8	Student intake and attrition in the programme for last five years	37
6.4.9	ICT Application in Curricula Delivery	41
6.4.10	The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.	41
6.4.11	Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.	41
6.4.12	Certificate (Applicable when SSR is submitted for Programme)	41

## 6.4. Self-Study Report for the Programme

Name of the Programme: M.Sc. (Ag) Soil Science

Offered by: Department of Soil Science and Agricultural Chemistry

### 6.4.1 Brief History of M.Sc. (Ag.) Soil Science

The Department of Soil Science and Agricultural Chemistry was functioning as a division under the Department of Agriculture. The Department of Agriculture was elevated to the faculty status in 1963. The Division of Soil Science was actively involved in teaching from 1963 to 1978. During 1979 the Division of Soil Science and Agricultural Chemistry was upgraded as a full-fledged department. Realizing the importance of Soil Science in the field of Agricultural education, the Post-Graduate programme in Soil Science and Agricultural Chemistry was started in 1980.

Historical Itinerary	Year of Commencement/ Period
Division of Soil Science and Agricultural Chemistry	1963
Ph.D. Programmes	1966
Department Status	1979
Post graduate Programmes in Soil Science and Agricultural Chemistry	1980

Soil Science Department offers M.Sc., (Ag.) in Soil Science degree programme with total of 70 credits, which includes 20 credits for major courses, 8 credits for minor courses, 06 credits for supporting courses, 05 credits for common courses, 01 credit for seminar and 30 credits for master's research and thesis submission. Based on the ICAR 5<sup>th</sup> Dean's Committee recommendations, the latest revision of the curriculam was carried out in the academic year 2022-23. The syllabus covers various aspects *viz.*, Soil Physics, Soil fertility and fertilizer use, Soil Chemistry, Soil Genesis, Analytical Techniques, Remote sensing and soil degradation etc.,

### Distribution Pattern of Courses and Credit (Research)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Research	Credit
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14
Credit Load	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

### Distribution Pattern of Courses and Credit (IDEA)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	IDEA	Credit
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10+10	22
Credit Load	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

### SEMESTER-WISE DISTRIBUTION OF COURSES (IDEA)

Sl. No.	Course Title	Credits
<b>I Semester</b>		
1.	Major Courses	8
2.	Supporting Courses	
	STA501 - Statistical Methods for Applied Sciences	3
	COM 501 - Information Technology in Agriculture	3
3.	Common Courses	
	PGS 501 - Library and information services	1
	PGS 502 - Technical writing and communications skills	1
	<b>Total</b>	<b>16</b>
<b>II Semester</b>		
1.	Major Courses	12
2.	Common Courses	
	PGS 503 - Intellectual property and its management in agriculture	1
	PGS 504 - Basic Concepts In Laboratory Techniques	1
	<b>Total</b>	<b>14</b>
<b>III Semester</b>		
1.	Minor courses	6
2.	Common course	
	PGS 505 - Agricultural research, research ethics and rural development programmes	1
3.	Disaster Management (Contact hour 1+ 0)	-
4.	Constitution of India (Contact hour 1+ 0)	-
5.	<b>Master's Seminar</b>	1
6.	<b>IDEA</b>	10
7.	Value Added Course (Contact hour 3+0) ( <a href="https://annamalaiuniversity.ac.in/studport/value_added_crs.php">https://annamalaiuniversity.ac.in/studport/value_added_crs.php</a> )	-
	<b>Total</b>	<b>18</b>
<b>IV Semester</b>		
1.	Minor course	2
2.	<b>IDEA</b>	20 (10+10)
	<b>Total</b>	<b>22</b>

**SEMESTER-WISE DISTRIBUTION OF COURSES (RESEARCH)**

Sl. No.	Course Title	Credit
<b>I Semester</b>		
1.	Major Courses	8
2.	Supporting Courses	
	STA501 - Statistical Methods for Applied Sciences	3
	COM 501 - Information Technology in Agriculture	3
3.	Common Courses	
	PGS 501 - Library and information services	1
	PGS 502 - Technical writing and communications skills	1
4.	<b>Research</b>	2
	<b>Total</b>	<b>18</b>
<b>II Semester</b>		
1.	Major Courses	12
2.	Common Courses	
	PGS 503 - Intellectual property and its management in agriculture	1
	PGS 504 - Basic Concepts In Laboratory Techniques	1
3.	<b>Research</b>	6
	<b>Total</b>	<b>20</b>
<b>III Semester</b>		
1.	Minor courses	6
2.	Common course	
	PGS 505 - Agricultural research, research ethics and rural development programmes	1
3.	NGC 511 - Disaster Management (Contact hour 1+ 0)	-
4.	NGC 512 - Constitution of India (Contact hour 1+ 0)	-
5.	<b>Master's Seminar</b>	1
6.	<b>Research</b>	10
7.	Value Added Course (Contact hour 3+0) ( <a href="https://annamalaiuniversity.ac.in/studport/value_added_crs.php">https://annamalaiuniversity.ac.in/studport/value_added_crs.php</a> )	-
	<b>Total</b>	<b>18</b>
<b>IV Semester</b>		
1.	Minor course	2
2.	<b>Research</b>	12 (8+4)
	<b>Total</b>	<b>14</b>

## Vision

- To produce Soil Scientists who have cutting-edge scientific skills and expertise in creating, acquiring and disseminating knowledge in Soil Science
- To support sustainable and productive use of natural resources for the welfare of humankind and to help farming community solve problems arising due to climate change

## Goals

- Imparting practical knowledge and providing training in the field of Soil Science with an array of new analytical procedures
- Scientists who are adept in the art of providing judicious recommendations to farmers
- Strengthening infrastructure facilities by mobilizing grants from funding agencies
- Finding out ways and means to sustain soil health and create awareness among farmers regarding importance of soil testing and package of practices to be followed for efficient use of nutrients for higher crop yields

## Objectives

- To understand current problems through intensive seminars and group discussions with stake holders and To expose the budding scientists to the recent advances in Soil Science
- To impart formal training to students in the field of Soil science and produce world class Scientists
- To mobilize grants through projects funded by Government as well as private agencies so as to strengthen the infrastructure of the department.
- To carry out research on soil especially physical, chemical and biological processes related to management of nutrients, water, agro-chemicals and energy

### Strategic Plans to achieve Vision and Goal

Goals	Objectives	Implementation plan	Performance Metrics/Timeline
Imparting practical oriented knowledge and providing training in the field of Soil Science with an array of new analytical procedures	<b>Advances in Soil Science</b> To understand current problems through intensive seminars and group discussions with stake holders and to expose the budding scientists to the recent advances in soil science	Periodical up gradation of syllabi	Once in three years.
Soil scientists who are adept in the art of providing judicious recommendations to farmers	<b>Training to students</b> To impart formal training to students in the field of Soil science and produce world class Scientists who can significantly fulfil the requirements of Soil Scientists	Definitive implementation of class seminars & credit seminar to impart interactive ability among students	Once in a semester

Goals	Objectives	Implementation plan	Performance Metrics/Timeline
Strengthening infrastructure facilities by mobilizing grants from funding agencies	<b>Research activities</b> To mobilize Grants through projects funded by Government as well as private agencies so as to strengthen the infrastructure of the department.	Organising periodical guest lectures for knowledge enlightenment and campus interviews for prospective placements.	Once in three months & yearly
Finding out ways and means to sustain soil health and create awareness among farmers regarding importance of soil testing and package of practices to be followed for efficient use of nutrients and higher crop yields	<b>Extension(Scientific knowledge to farmers)</b> To carry research on soils especially physical, chemical and biological processes related to management of nutrients, water, agrochemicals and energy	Motivating staff to apply for various projects.and encourage faculty members to publish their research findings in peer reviewed journals. Disseminate and promote technologies for sustainable management of soil and water resources and efficient use of nutrients, water agrochemicals and energy	Throughout the year  Throughout the year

### Accomplishments

The department was nurtured under the headship of the renowned Soil Scientist, Dr. S. Chandrasekaran. A reputed Soil Scientist and Best Teacher awardee (1987-1988) by the Government of Tamil Nadu, Dr. S. Chandrasekaran was the first Head of the Department **who was responsible for the release of the salt - tolerant high- yielding rice variety Annamalai Uvar Nel (AU-1)**. Salinity tolerance is a special characteristic of this variety. It tolerates soil salinity up to 6.0 dSm<sup>-1</sup> (soil water extract 1:1) at which level the popular Kuruvai varieties do not survive. The plants of AU-1 are semidwarf in nature (about 95 cm. in height) with erect, non lodging habit, moderately photo insensitive with a duration of 105 days in Kuruvai and 115 days in Navarai. The variety can yield 6.2 t ha<sup>-1</sup> in normal soil with good quality water. However, when irrigated entirely with water of salinity level 2 dSm<sup>-1</sup> during Kuruvai season, this variety can yield 3. 2 t ha<sup>-1</sup>. Dr. S. Chandrasekaran, during his tenure did pioneering work on the use of lignite humic acid and lignite flyash in maximizing crop yields. He also served as the Dean, Faculty of Agriculture during 1986-1989

Prof. S. Kaliyaperumal succeeded Dr. S. Chandrasekaran and made significant contribution to the development of the department. Dr. B.Raghupathy was the Head of the Department from 14.03.1991 to 30.06.2002. His contribution on the **use of lignite fly ash as source of silica and other nutrients in improving soil fertility and productivity** are worth mentioning.

Dr. R. Govindasamy, succeeded Dr. B. Raghupathy and served as the Head of the Department from 01.07.2002 to 31.07.2004. He made remarkable studies on the **use of lignite derived humic acid for sustainable crop yields**. Dr. M. Ravichandran, Professor of Soil Science and Agricultural Chemistry, served as the Head of the department from 01.08.2004 to 18.01.2015. His work on Diatomaceous earth as a source of silicon in different crops of Tamil Nadu is significant. Dr. A. Angayarkanni, Professor of Soil Science and Agricultural Chemistry served as the Head of the Department from 19.01.2015 to 28.02.2018. She made significant research on **recycling of agricultural and agro industry wastes for enhanced nutrient uptake and yield of rice**. Dr. K. Arivazhagan served as the Head of the Department from 1-3-2018 to 28-2-2021. He served as a **consultant Scientist for NTPC on use of Fly ash in Agriculture**. Dr. M .V. Sriramachandrasekharan is currently holding the post Professor and Head from 1-3-2021. His area of specialization is **integrated soil fertility management in rice and silicon research in normal and abiotic stress**. From the inception of the department, one hundred and eighty nine M.Sc.(Ag.) and 26 Ph.D. students have passed out from the portals of this department with a high degree of accomplishment. The passed out students are working in different fields with zeal and commitment and have reached pinnacle of glory with their will and self-determination

The following research works carried out by the faculty stand as testimony to the research competence of the staff of the department.

- Release of saline-tolerant rice variety Annamalai UvarNel (AU 1)
- Lignite fly ash dosage optimized for crops viz., rice, sorghum, maize, groundnut and sugarcane grown in lateritic soils
- Consultancy services offered on use of fly ash in agriculture for NTPCs
- Rate of lignite derived humic acid in combination with RDF rationalized for vegetable crops viz., radish, Bhendi and tomato
- Technology for restoring soil fertility and productivity of degraded soils of coastal eco-system using bio-resources established
- Methods of recycling of agricultural and agro industry wastes for enhanced nutrient uptake and yield of rice developed
- Critical limits for sulphur and micronutrients established and levels optimized for rice, groundnut and vegetables
- Silicon research on rice and banana
- Soil resource inventory and soil erosion assessment through remote sensing and GIS techniques

A collaborative research project between the Department of Soil Science and Agricultural Chemistry, Annamalai University and University of Agricultural Sciences, Bangalore, entitled "**Diatomaceous earth as a source of silicon in different crops of Tamil Nadu**" was carried out during 2012-2014 with an outlay of Rs. 7.84 lakhs. Another collaborative research project between the Department of Soil Science and Agricultural Chemistry, Annamalai University and International Potash Institute Switzerland, entitled "**Assessment of Potassium on Turmeric at Different Farmers' location in Inceptisols**" was conducted during 2010-12 with an outlay of 2.70 lakhs.

There are four Endowment prizes created to motivate the M.Sc.(Ag.) students *viz.*, Vallalar Endowment prize awarded to a student securing the highest OGPA in the I Semester of I M.Sc.(Ag.), Dr. S. Chandrasekaran Endowment prize awarded to a PG student securing highest OGPA in all the subjects put together at the end of first year, Prof. S. Kaliyaperumal prize awarded to a student securing the highest marks in the subject “ Soil Fertility” and Thirumathi Srilochani-Varadharajulu Endowment Prize given to a PG student securing the highest OGPA in all the subjects put together at the end of second year.

Category	Upto 2016	July 2017- June 2022
Number of Publications (Journal articles)	561	394
Number of Publications (Seminars/Conferences/Symposia)	466	380
Number of Books & Book chapters	12	15
Number of Projects obtained	40	8
Grant mobilization(Rs. Lakhs)	100	22
Number of Ph.D s produced	26	5
Number of PG s produced	147	43
Number of Seminars/Conferences/Workshops Organized	8	2
Number of Awards received by the Faculty	21	11
Number of countries visited by the Faculty (Professional visits)	6	4

### Salient Research achievements of the Department

Area of Research	Salient Findings
Use of Lignite Fly Ash for improving productivity of crops	<ul style="list-style-type: none"> <li>LFA was used as a source of silica for rice, maize and sugarcane in lateritic soil and addition of LFA as silica source released much P in these lateritic loamy soils.</li> <li>LFA was used as a source of nutrient for sorghum and groundnut in lateritic loamy sand soils.</li> <li>LFA was tried as source of sulphur and it was comparable to gypsum for groundnut and sunflower.</li> <li>Application of LFA and pressmud in combination was found to be efficient in improving productivity of blackgram.</li> <li>Application of LFA along with gypsum as a</li> </ul>

Area of Research	Salient Findings
	<p>source of sulphur improved the yield and quality of radish</p>
<p>Lignite derived humic acid for enhancing nutrient availability and yield of crops</p>	<ul style="list-style-type: none"> <li>• Lignite derived humic substances viz., humic acid, nitro humic acid and poly carboxylic acid were characterized using IR and NMR spectroscopy</li> <li>• The dose of Lignite humic acid for rice, sorghum, sugarcane, groundnut , bhendi, brinjal and tomato was optimized through field trials</li> <li>• The role of humic acid in improving the use efficiency of 1. nitrogen in rice soils was established through humic acid coated urea. 2. Zn and Fe in Sugarcane was established using zinc and iron humate. 3. Boron use efficiency was established in tomato using calcium boro humate 4. The role of humic acid in improving saline tolerance of rice crop was established through field trials</li> </ul>
<p>Restoring fertility in degraded soils of coastal eco-system</p>	<ul style="list-style-type: none"> <li>• Characterisation of degraded soils of coastal eco system of Tamil Nadu was undertaken.</li> <li>• In coastal degraded soils to sustain soil health and yield of crops the bio resource technology in soil using microbial consortium and organic manure was evolved.</li> <li>• To increase the efficiency of micro nutrient and coastal degraded environment technology was developed to prepare nutrient fortified organic manure and demonstrated and their coastal irrigated and upland conditions.</li> <li>• As an alternate land use practice to increase the income of coastal farmers, suitable medicinal plants were suggested.</li> <li>• Standardization of agro-techniques for medicinal plant cultivation using INM practices and micro nutrients were developed.</li> <li>• Leaching loss of nutrients such as nitrogen and zinc and coastal environment was assessed and its preventive measure was developed using clay and organic amendments.</li> </ul>

Area of Research	Salient Findings
Recycling of agricultural and agro industry wastes for enhancing yield of crops	<ul style="list-style-type: none"> <li>• Recycling of agricultural and agro industry wastes provides early nitrogen, enhances nutrient availability, provides nitrogen, phosphorus, potassium, calcium, sulphur and micronutrients.</li> <li>• It energizes soil microorganisms, prevents nutrient elements from leaching and increases nutrient use efficiency.</li> <li>• Pressmud + crop residue compost blended with LFA followed by dairy farm waste + crop residue compost blended with LFA proved to be superior and this was reflected in use efficiency of nutrients and yield of rice, groundnut and maize.</li> </ul>
Soil resource inventory and soil erosion assessment through remote sensing and GIS techniques	<ul style="list-style-type: none"> <li>• Annual soil erosion rate of Manimuthanadhi watershed was assessed using revised universal soil loss equation (RUSLE) and GIS.</li> <li>• The soil loss classes very high and severe covers about 2369 km<sup>2</sup> and 15.44 km<sup>2</sup> , respectively.</li> <li>• This study identifies the location which is needed to take soil conservation measure to reduce soil loss in the study area.</li> </ul>
Micronutrient research	<ul style="list-style-type: none"> <li>• Studies were conducted to delineate, characterize and find the response of Zinc to rice in soils of Chidambaram Taluk.</li> <li>• It was found that , to overcome zinc deficiency and achieve maximum yield in rice-pulse cropping system in soils of Chidambaram Taluk, soil application of Zn kg<sup>-1</sup> along with poultry manure or vermicompost can be resorted.</li> <li>• The critical limit of Zn was 0.85 and 0.84 mg kg<sup>-1</sup> for Vertisol and Entisol of Chidambaram taluk, respectively.</li> </ul>

#### 6.4.2. Faculty Strength

The Department's teaching, research and extension are taken care of by nineteen faculty members who have specialized in Soil Fertility, Soil Chemistry and Pedology.

Sl.No.	Sanctioned Faculty	Faculty in place As on August,2022	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	6	-	--
2	Associate Professor	4	-	1
3	Assistant Professor*	9	-	2+3

\* Engaged in UG, PG and Ph.D. programme

#### Services of Faculty from other Departments

Sl.No.	Sanctioned Faculty	Faculty in place As on August,2022	Other Departments As on August,2022	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	1	STATISTICS	-
2	Associate Professor	1	COMPUTER SCIENCE	-
3	Assistant Professor*	1	ENGLISH	-

### 1. Accomplishment by Teachers

S.No	Name	Designation	Total service (Years)	Field of Specialization	Total Number of students guided		Total number of publications	Total number of Publications (July 2017-June 2022)	
					PG	Ph.D		Journals	others
1	Dr. M.V. Sriramachandra sekharan	Professor and Head	27	Soil Fertility & Analytical Chemistry	11	3	171	48	5
2	Dr. A.Angayrakanni	Professor	33	Soil Fertility & Soil Ecology	8	3	78	10	1
3	Dr.K.Arivazhagan	Professor	30	Soil Fertility and Soil Physics	9	1	25	3	....
4	Dr. P.Poonkodi	Professor	29	Soil Fertility and Pedology	8	1	47	14	10
5	Dr. R.Singaravel	Professor	24	Soil Fertility&plant nutrition	4	4	86	3	1
6	Dr. K.Dhanasekaran	Professor	24	SoilFertility,Humus Chemistry	7	3	54	14	3
7	Dr. D.Venkatakrishnan	Associate Professor	21	Soil Fertility& Environment	5	Nil	20	10	----
8	Dr. S. Srinivasan	Associate Professor	21	Soil Fertility	7	Nil	55	22	8
9	Dr. N. Senthilkumar	Associate Professor	18	Soil Fertility & Environmental pollution & pesticide	6	Nil	38	18	6
10.	Dr. D. Elayaraja	Associate Professor	18	Soil Fertility and Soil Biology	7	Nil	89	40	7
11	Mr. M. Rasavel	Asst. Professor	19	Soil Fertility	-	Nil	3	----	-----
12.	Dr. P. K. Karthikeyan	Asst. Professor	18	Soil Fertility	6	Nil	32	22	1
13	Dr. R. Manivannan	Asst. Professor	16	Soil Fertility& Plant nutrition	2	Nil	46	32	4
14	Dr. S. Sathiyamurthi	Asst. Professor	16	Soil Fertility and GIS	3	Nil	34	19	1
15	Dr. P. Kamalakannan	Asst. Professor	16	Soil Fertility	3	Nil	35	24	2
16	Dr. R. Bhuvanewari	Asst. Professor	16	Soil Chemistry& Soil Fertility	4	Nil	43	21	3
17	Dr. T. Muthukumararaja	Asst. Professor	16	Soil Fertility & plant nutrition	4	Nil	28	20	4
18.	Dr. P. Senthilvalavan	Asst. Professor	15	Soil Fertility & Radioisotopes	1	Nil	72	55	15
19	Dr. K. Suhathiya	Asst. Professor	13	Soil Fertility	Nil	Nil	8	4	---

## 2. Publications and Seminars, Conferences, Workshop and Symposia attended/organized

S.No.	Name of the Teacher	Number of Publications (Upto July 2017 - June 2022)		360 degree	h- index	i-10 index	Citation	Number of seminars attended (July 2017- June 2022)	Number of seminars organised (July 2017- June 2022)
		Journal	Book & Chapters						
1.	Dr. M.V. Sriramachandrasekharan	48	5		11	15	478	13	1
2.	Dr. A.Angayarkanni	10	-	109	6	4	145	18	-
3.	Dr.K.Arivazhagan	3	-	-	-	-	-	1	-
4.	Dr. P.Poonkodi	14	-	-	-	-	-	11	-
5.	Dr. R.Singaravel	7	-	-	-	-	-	11	-
6.	Dr. K.Dhanasekaran	16	-	-	5	-	45	12	1
7.	Dr. D.Venkatakrishnan	12	4	-	3	-	-	16	1
8.	Dr. S. Srinivasan	23	9	146	4	1	28	41	1
9.	Dr. N. Senthil Kumar	24	6	131	4	-	40	37	-
10.	Dr. D. Elayaraja	41	6	195	8	3	163	24	1
11.	Mr. M. Rasavel	-	-	--	-	-	-	--	-
12.	Dr. P. K. Karthikeyan	22	1	--	4	-	50	15	1
13.	Dr. R. Manivannan	32	1	118	5	3	62	29	1
14.	Dr. S. Sathiyamurthi	19	1		3	1	38	1	-
15.	Dr. P. Kamalakannan	24	2	187	3	1	36	23	-
16.	Dr. R. Bhuvanewari	21	3	150	4	2	48	14	-
17.	Dr. T. Muthukumararaja	19	6	-	-	-	-	25	1
18.	Dr. P. Senthilvalavan	53	15	289	5	3	106	80	1
19.	Dr. K. Suhathiya	4	--	89	2	-	17	26	-

<b>S.No.</b>	<b>Type (seminar/conference/ Symposia/workshop/ Colloquium)</b>	<b>Date</b>	<b>Title</b>	<b>Number of Participants</b>	<b>Sponsoring Agency</b>
1.	National Seminar	26 & 27 <sup>th</sup> October, 2018	Technological interventions to enhance nutrient use efficiency to meet food security and environment sustainability	250	DST-Purse
2.	Webinar	13-8-2020	Significance of Space Technology on Crop and Soil Sustainability	434	Dept. of SS
3.	Webinar	4-9-2020	Relevance of Modelling in Nutrient and Water Management	397	Dept. of SS
4.	National Virtual Conference	11-10-2021	Challenges and opportunities for integrated soil fertility management in India(COISFMI-21)	200	IQUART
5.	National Seminar	28-29 Mar, 2022	Revitalising soil health through natural resource management in a climate change era(RSHNRM-21)	140	DST- PURSE-II

### 6.4.3. Technical and Supporting staff

The list of technical and supporting staff of the Department of Soil Science is given below

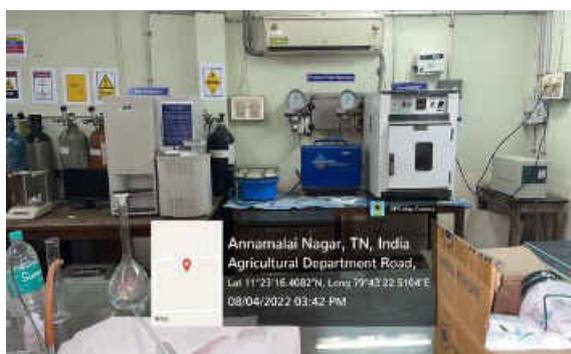
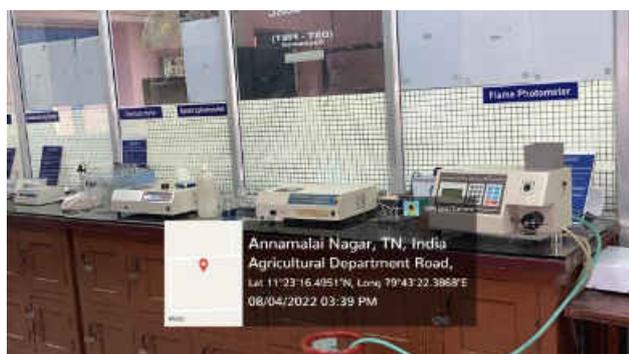
Sl.No.	Sanctioned posts	Staff in place	Responsibilities
1	Assistant Section Officer	1	Preparation of files for the purchase of chemicals
2	Assistant Programmer	1	Office computer work
3	Lab Technician	2	Maintenance of laboratories and preparation of solution for class.
4	Helper	5	Issue of glasswares
5	Deputy Garden Superintendent	2	Pot-culture maintenance - Maintenance of Garden
6	Maistry	2	Cleaning - sand filling for pots in pot-culture Yard

### 6.4.4. Classrooms and Laboratories

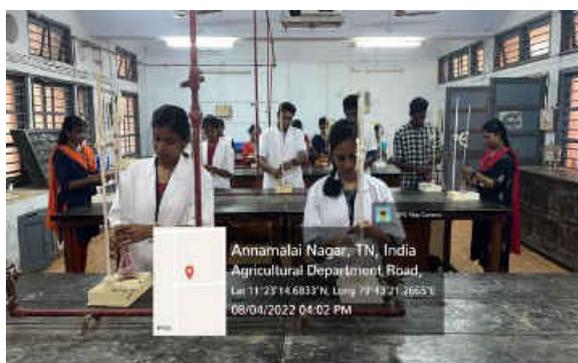
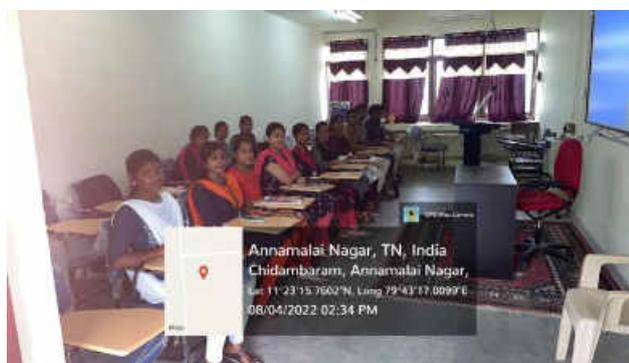
The classrooms and laboratories available in the Department of Soil Science for M.Sc. (Ag.) programme are given below. The department is fully equipped PG and instrumentation laboratories apart from a pot culture yard for teaching and research programs. In addition, an ICT laboratory with ten computers is available for staff and students' use.

Sl.No.	Facility	Number	Area (sq. ft)	Description & Equipment housed
1	Class room	1	180	A class room with audio visual facility is available
2	Post-graduate Laboratory	1	740	A full-fledged-laboratory with all basic facilities such as Soil grinder-1, Kjeltex N Analyser-1, Soxhlet's apparatus-1, Laminar Flow Chamber-1, Aggregate analyser-1, mantle-1, Doublebeam Spectrophotometer-1, Flame photometer-1, distillation unit-1, Electronic weighing balance-1, Bremner apparatus-1, micro Kjeldahl unit-1 and Hot air Oven-3.
3.	Instrumentation Laboratory	1	620	An air conditioned laboratory with all basic instruments such as Centrifuge-1, Spectrophotometer-3, pH meter-1, EC meter-1, Electronic weighing balance-2, Incubator -1, Pressure plate apparatus-1, C: N Analyser-1, Li-COR methane analyser-1, Atomic Absorption Spectrophotometer-1, Chlorophyll meter - Spade 502-1, Ground Truth Radio meter with 4 filters-1
4.	Library cum	1	646	An air conditioned laboratory with 10 computers

Sl.No.	Facility	Number	Area (sq. ft)	Description & Equipment housed
	ICT Laboratory			loaded with statistical softwares connected through LAN with Infflibnet facility. One computer with GIS and remote sensing software is also available. It also houses 909 books , 15 Journals and 45 CDs.
5.	Gas Plant	1	110	Fuel Gas generation
6.	Glass house	1	660	To conduct incubation and pot experiments
7.	Pot culture yard	1	2500	To conduct pot experiments



**Laboratory Equipments**



**PG theory Classroom**

**PG Practical Laboratory**

#### 6.4.5. Conduct of Practical and Hands on Training

- ❖ AV aids are used both for theory as well as practical classes, class seminars and group discussions
- ❖ Field visits are arranged to research stations for providing them with knowledge on different types of soils, crops and cropping pattern.
- ❖ Students are taken to soil testing labs so as to gain knowledge on the procedures followed for soil testing, interpreting results and giving fertilizer recommendation to different crops grown on farmers' fields.
- ❖ Students are exposed to fertilizer testing labs and pesticide testing labs so that they can be aware of the methods followed at the labs for testing fertilizers and pesticide
- ❖ Frequent visits are made to progressive and innovative farmers' fields to learn new technologies.

- ❖ Students are motivated to participate in National and International seminars and conferences and interact in scientific discussions.
- ❖ Invited lectures are also arranged under the aegis of the Indian Society of Soil Science chapter for the benefit of the staff and students.



Soil Sampling & testing demonstration to Farmers at Kautappatu village-Chidambaram

#### 6.4.6. Supervision of students in PG programme

During their research, each Post Graduate student shall have an advisory committee which is formed before the end of the first semester to facilitate the student in carrying out the assigned thesis program. The advisory committee comprises of a chairman and two members, of which one member is from the major discipline and another from any other discipline in the related field of thesis research. The chairman of the advisory committee will guide the student throughout the program for selecting appropriate major and minor courses, guide in the selection of topic for thesis research and seminar, monitor the research work and maintain a research monitoring register for each student.

Students' progress is reviewed by the chairman once in a week. The Professor and Head of the Department take up monthly review to assess the progress of research done by PG students. At the end of each semester, evaluation of research work carried out by the student is done by the advisory committee members by presenting their progress of research at the Department level where they offer their remarks/ suggestions for improvement of their research.

S.No	Year	Students Admitted	Teacher Student ratio
1.	2017-18	15	0.75
2	2018-19	11	0.57
3.	2019-20	6	0.31
5.	2020-21	10	0.52
6.	2021-22	18	0.94

### MSc.(Ag.) Theses in the Department of Soil Science (2017-2022)

S. No.	Name of the Student	Name of the Guide	Year of Submission	Title of thesis
1	C.Anbarasu	Dr. K.Dhanasekaran	2017	Effect of NPK and Foliar applications of micronutrients with growth regulators on the performance of ragi
2	V.Arul kumar	Dr. D.Venkatakrishnan	2017	Response of conventional and non conventional organic sources and industrial by-products for yield maximization of Radish in Alluvial soil.
3	S.Pingaleswaran	Dr. S.Srinivasan	2017	Influence of inorganic fertilizers, organic waste and PGR with boron on the yield and quality of soybean (Glycine max (L.) Merrill) cv.CO 3.
4	N.Prabhu	Dr. N.Senthil Kumar	2017	Study the effect of integrated nutrient management on yield of pearl millet and soil health.
5	S.Praveen kumar	Dr. P.K.Karthikeyan	2017	Studies on potassium fixation and effect of muriate of potash and sullphate of potash on growth, yield and quality parameters of radish (Raphanus sativus L.,) CV.Pusa chetki.
6	M.Sivaranjani	Dr. D.Elayaraja	2017	Effect of secondary and micronutrients fertilization with organic manure o the soil fertility and productivity of sunflower in coastal saline soil.
7	Thokchom Merina Devi	Dr. R.Bhuvaneswari	2017	Effect of humic acid on the performance of hybrid maize grown under saline water

				irrigation.
8	S.Vasudevan	Dr. T.Muthukumararaja	2017	Upshot of silicon and organic fertilizers application on rice in saline soil
9	R. Vinothkumar	Dr. M.V.Sriramachandrasekharan	2017	Studies on balanced fertilization on yield maximization in lowland rice
10	N.Anitha	Dr.K.Arivazhagan	2018	Response of lowland rice to graded levels of phosphorous and bio-organics ( farm yard manure, green manure, and phosphorous solubilising bacteria)
11	V.Anitha	Dr. A. Angayarkanni	2018	Effect of fertilizers and pressmud-crop residue compost mixed with lignite flyash, on soil properties, nutrient uptake and yield of cowpea( <i>Vigna unguiculata</i> ) CO (CP) 7
12	A.Balakumar	Dr. P. Poonkodi	2018	Effect of inorganics fertilizers, organic manures, and Rhizobium on soil health, and quality of black gram ( <i>Vigna mungo</i> )
13	T. Dhivya	Dr. R. Singaravel	2018	Studies on the zinc leaching and its control in coastal sandy soil
14	P. Elavarasi	Dr. K.Dhanasekaran	2018	Effect of irrigation intervals and anti transparent application on performance of black gram
15	Maragani Vamshi	Dr. S.Srinivasan	2018	Enhancement of sustained sunflower productivity through incorporation of integrated nutrients and phyto-hormones
16	Kasinam Doruk	Dr.D.Venkatakrishnan	2018	Response of compost and industrial byproducts for yield and quality of maize.
17	S.Naveen	Dr. P.K.Karthikeyan	2018	Effect of Muriate of potash and sulphate of potash on growth, yield and quality parameters of green gram ( <i>Vigna radiate</i> L.)- cv VBN 2
18	P. Ramamoorthy	Dr. D. Elayaraja	2018	Effect of saline water irrigation and organic amendments on the soil properties and yield of brinjal in coastal sandy soil
19	M. Ramya	Dr. S.Sathiyamurthi	2018	Soil erosion modelling of Manimutha nathi water shed using revised universal soil loss

				equation (RUSLE) on GIS
20	K.Subash Chandrabose	Dr. P. Kamalakannan	2018	Response of phosphorus fertilization and mycorrhiza inoculation on the performance of groundnut genotypes
21	K.Sweetha Reddy	Dr. R. Bhuvaneswari	2018	Effect of humic acid and micronutrients foliar spray on groundnut in sandy loam soil
22	R. Vinoth	Dr. T. Muthukumararaja	2018	Response of rice to zinc enriched FYM in Typic Ustifluent soil
23	V. Vinothkumar	Dr. P. Senthilvalavan	2018	Effect of organic and inorganic on immobilization and phyto accumulation of heavy metals [LEAD (pb) and CADMIUM (cd)]
24	P.Aravinth Kumar	Dr. M.V.Sriramachandrasekharan	2019	Response of rice to dual application of nitrogen and silicon in typic ustifluent soil
25	D.Arulrajasekaran	Dr. R. Singaravel	2019	Studies on the effect of fortified organic manure with micronutrients and bio active compounds on the growth, yield and micronutrients bio fortification of black gram in coastal saline soil
26	K. N. N. Aravindh Ramnathan	Dr. P. Poonkodi	2019	A study on the combined effect of inorganic fertilizers, organic manures and biofertilizers on soil properties, yield and quality of brinjal
27	M. Ashok kumar	Dr. K.Dhanasekaran	2019	Effect of organic manures and natural growth stimulants on the performance of bhendi
28	C. Dhayanithi	Dr. D. Venkatakrisnan	2019	Response of conventional, non-conventional organic sources and industrial by-products on yield maximization of maize.
29	N. J. Einthu Pochine	Dr. S. Srinivasan	2019	Effect of integrated plant nutrient supply system for yield maximization of Ambrette ( <i>Abelmoschus moschatus</i> Medic L.) in <i>Typic ustifluent</i> Soil.
30	G. Gokul	Dr. N. Senthilkumar	2019	Effect of foliar feeding technique on growth and yield of ragi
31	R. Kamaleshwaran	Dr. P. Karthikeyan	2019	Effect of potassium on growth,yield and quality parameters in blackgram ( <i>Vigna mungo</i> )

				L.) cv. VBN-3
32	S. Karthika	Dr. D. Elayaraja	2019	Effect of boron and silicon on the performance of tomato in coastal saline soil
33	G.Kiruthika	Dr. R. Manivannan	2019	Response of rice to nitrogen sources and zinc in two contrasting soils
34	T. Menaka	Dr. S.Sathiyamurthi	2019	Land Suitability Analysis of Sankari Block using AHP and GIS Technique
35	R.Mukesh	Dr.P.Kamalakkanan	2019	Optimization of NPK with zinc fertilizer on yield maximization
36	N.L.Nayana	Dr.R.Bhuvanewari	2019	Response of brinjal to different doses of humic acid and zinc fertilization
37	P. Ponnmani	Dr.T.Muthukumara raja	2019	Response of rice to zinc fertilization
38	D. Vignesh	Dr.P. Senthilvalavan	2019	Relative efficiency of various phosphorus sources combined with PSB under rice rhizosphere.
39	Charles Edison	Dr. A. Angayarkanni	2020	Performance of groundnut to different soil fertility amendments in coastal sandy soil
40	N. Gokula Priya	Dr. M.V Sriramachandrasekharan	2020	Studies on alleviation of alkaline stress in maize through silicon fertilization in sodic soil
41	D.Gokul	Dr. P. Poonkodi	2020	Studies on the effect of integrated nutrient management on soil fertility, yield and quality of chilli ( <i>Capsicum annum</i> L.)
42	Keerthana Krishna Kumar	Dr. R. Singaravel	2020	Effect of zinc nano fertilizer on the growth, yield and biofortification of rice in coastal saline soil
43	G. Manikandan	Dr. K. Dhanasekharan	2020	Assessment and mapping of ground water quality for irrigation in keeralalayam block of Cuddalore district of Tamil nadu
44	M. Manojkumar	Dr. D. Venkatakrishnan	2020	Study on the conventional, non conventional organic sources and industrial by-products on sesame
45	T.Mathana	Dr. S. Srinivasan	2020	Influence of integrated organic nutrient sources on yield and quality of barnyard millet

				( <i>Echinochloa frumentacea</i> (Roxb.) Link.)
46	P. Pavithra	Dr. N. Senthilkumar	2020	Effect of cow urine based derivatives on performance of rice and banana
47	T. Sowmiyan	Dr. P. Karthikeyan	2020	Effect of potassium on growth, yield and quality aspects of groundnut ( <i>Arachis hypogaea</i> L.) in cv. TMV 13
48	A. Vigneshvarraj	Dr. D. Elayaraja	2020	Integrated plant nutrient system for maximizing yield of greengram in coastal saline soil
49	M. Abinaya	Dr. R. Manivannan	2021	Response of rice to nitrogen and boron fertilization in typic ustifluvents soil
50	R. Arthi	Dr. S. Sathiyamurthi	2021	Land suitability analysis of attur taluk using fuzzy AHP and GIS techniques
51	D. Madhupriya	Dr. P. Kamalakannan	2021	Response of hybrid chilli ( <i>Capsicum annum</i> L.) to macro and micronutrients fertilization in sandy clay loam soils of cuddalore DT. Tamilnadu
52	S. Soumiya	Dr. R. Bhuvanewari	2021	Effect of humic acid, micronutrients and growth regulators on the performance of bhendi
53	R. Sumithra	Dr. T. Muthukumararaja	2021	Response of zinc and organic fertilizers application on rice in saline soil
54	V. Swathi	Dr. P. Senthilvalavan	2021	Response of rice to zinc sulphate and zinc solubilizing bacteria in calcareous soil.
55.	M. Sivasakthi	Dr. S Sathiyamurthi	2022	Topsis and Geospatial techniques for crop suitability analysis of Krishnagiri District, Tamilnadu
56.	K, Tharani	Dr. P.Kamalakannan	2022	Response of sesame genotypes to phosphorus fertilization and phosphobacteria inoculation
57.	J.G. Thejesvi	Dr. R. Bhuvanewari	2022	Studies on the effect of zinc and boron on the growth and yield of hybrid chilli
58.	L.K. Visalatchi	Dr. P. Senthilvalavan	2022	Performance of tomato to phosphorus and biostimulants in calcareous soil
59.	K. Dhineshkumar	Dr. K. Suhathiya	2022	Effect of foliar application of zinc, iron and NAA on growth, yield, soil fertility and chemical nutrition of green gram( <i>Vigna radiata</i>

				L.,).
60.	M. Naveen	Dr. S. Srinivasan	2022	Enhancement of cotton ( <i>Gossypium hirsutum</i> ) yield by organic and inorganic nutrients with phytohormone

#### 6.4.7. Feedback of stakeholders (Students, farmers, company, parents etc.)

- Evaluation of teachers by students is done at the end of each semester through a specific feedback form prescribed by UGC
- An effective Mentor - mentee system is functioning at Department level to get feedback from students about hostel facilities and other amenities available
- Feedback from farmers is obtained during RAWE programme
- At the time of campus placement meeting the views of the Company representatives regarding syllabus revision and areas to be emphasized are obtained
- Feedback from parents regarding the views of their wards about the institution are obtained periodically

#### Action taken

1.	Feedback obtained from students is used to rate the teaching methodology followed by the teacher and improvements are suggested to the concerned teacher by the Head of the Department.
2.	Feedback is obtained from the students regarding the facilities required and based on the feedback necessary improvements are being carried out Diagnostic field visits are performed as and when required.
3.	Enquiry on various problems like soil testing, irrigation water salinity, nutrient management and deficiency symptom are received from farmers of Southern zone. The Soil scientists diagnose the problems and suggest necessary solution to the farmers.
4.	Discussions are made with Company representatives and alumni so as to update the curriculum based on market requirements
5.	Feedback obtained from parents is also considered during the process of framing rules and regulations to be adhered to by students and facilities to be created for their welfare.

#### 6.4.8. Students intake and attrition

Actual students admitted (2017- 2022)					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
15	11	6	10	18	-	-	-	-	-

Academic Year	Name of the Student			
	Ph.D. in ICAR institutes & State SAUs	NET/ARS Qualified		
		Name	Enroll No.	NET Qualified Year
2015-16	S. Selva Anbarasu (1150050001)			
2016-17	Kasinam Doruk, (1650040002) K. Subash Chandra Bose, (1650040004) M. Ramya(1950050006) K. Swetha Reddy(2150050002) Ramamoorthy, P.V. Sindhu, P. Vinothkumar (8)	Kasinam Doruk ,	1650040002	2018
		K. Subash Chandra Bose	1650040004	2018
2017-18	P. Aravinthkumar(1950050001) D. Arulrajasekaran(1950050003) G. Kiruthika(1950050005) R. Kamaleswaran(1950050004) (4)	R. Mukesh,	1750040012	2018
		M. Ashokkumar	1750040005	2020
2018-19	D. Gokul(2050050002) Manikandan(2150050001)	P. Pavithra	1850040004	2021
		N. Gokulapriya	1850040005	2021
2019-20	R. Arthi (1) (2150050001)	D. Madhupriya	1950040003	2021

#### Employment Details of PG students

Academic Year	Number of students graduated (PG)	Number of students joined in Ph. D.,	Employed in					Total	% employed
			Central	State	Bank	Private	Entrepreneur		
2017-18	15	4	---	---		7		11	73
2018-19	11	4		-		4	1	9	81
2019-20	6	1	---	---	---	1		2	33
2020-21	10	---	---		--	--		--	
2021-22	18	---	---	--	--	--		--	--

S.No	Name of the student	Enroll No.	Type of Job Govt./Private	Progressed to
		<b>2017-18</b>		
1	G.Kiruthika	1750040001		Ph.D.,- AU
2	S.Karthika	1750040003	FPO-Farmers Production Organization –CEO- Thrichengode	
3	C.Dhayanithi	1750040007	Asst.Prof-in Private	
4	K.N.N.Aravinth ramanathan	1750040006	SRF- ICAR – New Delhi	
5	D.Vignesh	1750040004	Asst.Prof- Adhiyaman Coolege	
6	M.Ashok kumar	1750040005	Asst.Prof- Adhiyaman Coolege	
7	G.Gokul	1750040009	Asst. Prof. Adhiparasakthi- Kalavai	
8	R.Mukesh	1750040012	Asst. Prof.- MIT- Trichy	
9	D.Arul raja sekaran	1750040013		Ph.D.,- AU
10	P.Aravinthkumar	1750040014		Ph.D.,- AU
11	R.Kamaleswaran	1750040015		Ph.D.,- AU
		<b>2018-19</b>		
12	P. Pavithra	1850040004	Asst. Professor - Pushkaram	
13	N.Gokulapriya	1850040005	Asst. Professor - Imayam	
14	A.Vigneshvararaj	1850040002	Asst. Professor -Nalantha	
15	D.Gokul	1850040006		Ph.D.,- AU
16	T.Sowmiyan	1850040009		MBA- England
17	S.Arunkumar	1850040008		Ph.D- Punjab
18	G.Manikandan	1850040007		Ph.D.,- AU
19	M.Manojkumar	1850040011	Asst. Professor – Aravinthar college	
10	Keerthana Krishna kumar	1850040012	SRF- Amirtha	
		<b>2019-20</b>		
11	R.Arthi	1950040002		Ph.D.,- AU
12	R.Sumithra	1950040004	Asst. Professor –Rower	

#### 6.4.9. ICT Application in Curricula Delivery

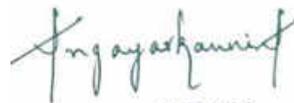
The classrooms are equipped with LCD facilities. A separate computer lab with internet connectivity (ICT - Lab) is also available for use. The teaching faculty has updated the usage of IT enabling gadgets. Postgraduate classes are equipped with audio visual aids and. Staff make presentations in recent topics of relevant subjects with the use of ICT tools. In practical classes lab instrument operations are explained through video clippings to gain operational skill. To enhance quality in research, students are encouraged to access relevant literature from various e – websites.

6.4.10 The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean ..... **A. Angayarkanni** ..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degreeawarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Agri.) Plant Pathology

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



**M.Sc. (Ag.) in Plant Pathology**  
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#### 6.4. Self Study Report for the Programme

**Name of the Programme: M.Sc. (Ag.) Plant Pathology**

**Offered by: Department of Plant Pathology**

##### 6.4.1. Brief History of M.Sc. (Ag.) Plant Pathology Programme

The discipline of Plant Pathology was an integral part of Department of Agriculture during its formative years and later on, became a part of the Department of Microbiology. The starting of a post-graduate course in Plant Protection in 1972, combining both Plant Pathology and Entomology heralded a new line of thinking. With the reorganization of the Faculty of Agriculture in 1984, M.Sc. (Ag.) in Plant Pathology was offered as a separate discipline.

<b>Historical Itinerary</b>	<b>Year/Period</b>
Division of Plant Pathology	1958
Post graduate Programmes in Plant Protection	1972 -1984
Department Status	1984
Post graduate Programmes in Plant Pathology	1984
Ph.D. Programme	1984

Currently the M.Sc. (Ag.) Plant Pathology degree programme has 70 credits in four semesters which includes 20 credits for major courses, 08 credits for minor courses, 06 credits for supporting courses, 05 credits for common courses, 01 credit for seminar and 30 credits for master's thesis research.

##### **Internship during Masters Programme**

##### **Internship for Development of Entrepreneurship in Agriculture (IDEA)**

Currently, a provision of 30 credits for dissertation work in M.Sc. programmes helps practically only those students who aspire to pursue their career in academic/ research. There is hardly any opportunity/ provision under this system to enhance the entrepreneurship skills of those students who could start their own enterprise or have adequate skills to join the industry. Therefore, in order to overcome this gap, an optional internship/ in-plant training (called as IDEA) in lieu of thesis/ research work is recommended which will give the students an opportunity to have a real-time hands-on experience in the industry. It is envisaged that the internship/ in-plant training would enhance the interactions between academic organizations and the relevant industry. It would not only enable the development of highly learned and skilled manpower to start their-own enterprises but also the industry would be benefitted through this process. This pragmatic approach would definitely result in enhanced partnerships between academia and industry.

Besides, provision of 30 credits for dissertation work in M.Sc. programmes Internship for Development of Entrepreneurship in Agriculture (IDEA) helps practically only those students who aspire to pursue their career in academic/ research. There is hardly any opportunity/ provision under this system to enhance the entrepreneurship skills of those students who could start their own enterprise or have adequate skills to join the industry. The latest revision of the curricula was carried out based on the recommendation of Fifth Dean's committee in the academic year 2022-2023.

**Distribution Pattern of Courses and Credit (Research)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Compulsory Courses	Seminar	Research	Credit
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14
Credit Load	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

**Distribution Pattern of Courses and Credit (IDEA)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Compulsory Courses	Seminar	IDEA	Credit
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10 +10	22
Credit Load	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

**Distribution Pattern of Courses and Credit**

S.no.	Course Code	Course Title	Credit Hours
<b>Major Courses</b>			
1	PAT 501*	Mycology	3 (2+1)
2	PAT 502*	Plant Virology	3 (2+1)
3	PAT 503*	Plant Pathogenic Prokaryotes	3 (2+1)
4	PAT 504*	Diseases of Field and Medicinal Crops	3 (2+1)
5	PAT 505	Plant Nematology	3(2+1)
6	PAT 506	Principles of Plant Pathology	3(2+1)
7	PAT 507	Techniques in Detection and Diagnosis of Plant Diseases	2(0+2)
8	PAT 508	Principles of Plant Disease Management	3(2+1)
9	PAT 509	Epidemiology and Forecasting of Plant Diseases	1(1+0)
10	PAT 510	Ecology of Soil-borne Plant Pathogens	2(1+1)
11	PAT 511	Integrated Disease Management	3(2+1)
12	PAT 512	Diseases of Fruits, Plantation and Ornamental Crops	3(2+1)
13	PAT 513	Diseases of Vegetable and Spices Crops	3(2+1)
14	PAT 514	Plant Quarantine and Regulatory Measures	1(1+0)
<b>Minor Courses</b>			
15	PAT 515	Disease Resistance in Plants	2(2+0)
16	PAT 516	Chemicals and Botanicals in Plant Disease Management	3(2+1)
17	PAT 517	Detection and Management of Seed Borne Pathogens	3(2+1)
18	PAT 518	Biological Control of Plant Diseases	2(1+1)
19	PAT 519	Post-Harvest Diseases	3(2+1)
<b>Supporting Courses</b>			
20	STA 501	Statistical Methods for Applied Sciences	3(2+1)
21	COM 501	Information Technology in Agriculture	3(2+1)
<b>Common Compulsory Courses</b>			
22	PGS 501	Library and information services	1(0+1)
23	PGS 502	Technical writing and communications skills	1(0+1)

24	PGS 503	Intellectual Property and its Management in Agriculture	1(1+0)
25	PGS 504	Basic Concepts in Laboratory Techniques	1(0+1)
26	PGS 505	Agricultural research, research ethics and rural development programmes	1(1+0)
<b>Non Gradial Courses</b>			
27	NGC 511	Disaster Management (Contact hour: 1)	-
28	NGC 512	Constitution of India (Contact hour: 1)	-
29	VAC	<b>Value added course</b>	-
30	PAT 591	<b>Master's Seminar</b>	1(0+1)
31	PAT 596/ 597/598/599	<b>Research / IDEA</b>	30

\*Compulsory major courses

### **Vision**

- To impart quality education in Plant Pathology and enable students to qualify for various competitive examinations
- To develop technologies for early detection, diagnosis and management of plant diseases to cater the needs of the farming community

### **Goals**

- To provide quality education with updated and latest developments in the subject
- To develop students with entrepreneurial skills
- To promote research on sustainable and eco-friendly approaches in crop disease management
- To popularize edible mushroom production

### **Objectives**

- To impart quality education in Plant Pathology involving biotechnological aspects on detection, diagnosis and management of plant diseases
- To undertake research on location specific problems and developing technologies of crop disease management for sustainable crop production.
- To ensure practical exposure in molecular studies for the PG scholars
- Impart training for transfer of technology

## Strategic plan to achieve Vision and Goal

Goals	Objectives	Implementation plan	Performance Metrics/ Timeline	Out come
To provide quality education with updated and latest developments in the subject	<p><b>Quality Education</b></p> <p>To impart quality education in Plant Pathology involving biotechnological aspects on detection, diagnosis and management of plant diseases</p> <p>To undertake research on location specific problems and developing technologies of crop disease management for sustainable crop production.</p> <p>To guide graduates and post graduates in identifying professional and research career opportunities</p>	<p>Periodical up-gradation of course contents</p> <p>Implementation of class seminars to impart interactive ability among students</p> <p>Organising periodical on campus interviews for prospective placements</p> <p>E – Access Bay for acquiring up-to-date subject knowledge.</p>	Every year	PG students are motivated to get job opportunities in UPSC, ICAR, SAU, SSC, Ministry of Agriculture and Farmer's Welfare, State Agriculture department.
To develop students with entrepreneurial skills	<p><b>Progress of entrepreneurial skills</b></p> <p>To ensure practical exposure in molecular studies for the PG scholars</p> <p>To extend technical expertise and assistance in testing newer compounds developed by pesticide establishments</p>	<p>Proposing extramural funded projects through Government agencies like DST, DST-FIST, DST-SERB, DBT, UGC, ICAR etc.,</p> <p>Giving assignments to PG students and encouraging them to present research findings in national and international seminars /symposia.</p> <p>Faculty is encouraged to present their research findings and innovative ideas in “In-house science forum” – <b>AUPPA - Annamalai University Plant Pathologists Association</b></p> <p>Motivating PG students to conduct laboratory and field trials.</p>	Every year	<p>The students will develop self confidence in handling advanced instruments for their research programme.</p> <p>The students are trained to refer books and e-journals to enhance their knowledge. Their instructional capacity is also increased through assignments and seminars.</p>

Goals	Objectives	Implementation plan	Performance Metrics/ Timeline	Out come
To promote research on sustainable and eco-friendly approaches of crop disease management	<b>Research promotion</b> To offer hands on training in IDM, techniques to the farmers and extension workers.	Imparting hands-on trainings on bio control agents mass production tech., Use of plant products and natural products for disease management etc.,	Every year	To motivate the rural youth on the use of mushroom cultivation; bio-compost and bio-control agents in agriculture
To popularize edible mushroom production	<b>Transfer of technology</b> Conduct training for transfer of technology	Impart hands on trainings on edible mushroom production and training on value addition	Every year	To achieve overall rural development and national food security in the state particularly in the south east coastal districts of Tamil nadu

## Accomplishments

The Department of Plant Pathology emerged during 1984. **Dr. G. Rangaswami, student of Nobel laureate S.A. Waksman was instrumental in initiation of the Department.** So far **308 M.Sc. (Ag.)** Plant Pathology degrees and **35 Ph.D.** degrees have been awarded. The PG students reflect a scenario of national unity as they represent every part of India. The Department was first Headed by Prof. R. Ramabadran, a student of Dr. G. Rangaswami. Prof. K. Ramanujam graduated Ph.D., from IARI and did his post doctoral fellow at Belgium was our second Head of the Department. He was followed by Prof. V. Kurucheve as Head of the Department, who initiated a great deal of research on use of natural products for crop disease management. After him Prof. A. Eswaran and Dr. S. Usharani Headed the Department. Presently the Department is headed by Dr. D. John Christopher, Professor of Plant Pathology. The alumni of the Department have occupied prestigious positions in various government and private organizations. Our distinguished alumni's occupied in higher positions in various government organisations viz., FAO - Rome Italy, National Rice Research Institute- ICAR, Odisha; UAS, Raichur, Karnataka; Tamil Nadu Agricultural University, Tamilnadu; University of West Indies; PANJANCOA&RI; Sugarcane Breeding Institute-ICAR, Coimbatore; CTCRI-ICAR, Trivandrum; Gandhigram Rural Institute, Dindigul; Mahwah Forest Division, HQ- Kishtwar, Jammu & Kashmir; Directorate of Vigilance and Anti corruption, Andhra Pradesh; Division of Insect Ecology, National Bureau of Agricultural Insect Resources-ICAR, Bengaluru; IIHR-ICAR, Odisha; TRRI, Aduthurai; Department of Agriculture, Tamil nadu and Pondicherry.

Apart from teaching, the staffs in the Department are actively involved in research. **During the academic year 2018-2019 Department of Plant Pathology was supported by DST-FIST and received Rs. 89.00 lakh** for establishment of a well equipped laboratory. Several projects have been taken up by the staffs with funding from agencies like **Ministry of Coal and Environment, Neyveli Lignite Corp., IIRR-ICAR, Hyderabad, DBT, DST, DST-SERB, UGC, UGC Non-SAP, FIST, ICAR-NAIP, TNSCST and private funding agencies like, BASF, Coromandel, Indofil, PI-Industries, UPL Ltd., NACL, Sulphur mills Ltd., Atul Ltd., Syngenta India Ltd., T.Stanes and Company Limited etc., and NGO's like CIKS and MSSRF.**

The Department offered a training programme for the rural youth regarding **edible mushroom production** and processing with funding support from **DBT**. Also, a training programmes were conducted on **production of eco-friendly pesticides, enriched compost and growth promoting substances** funded by **TNSCST**. Besides, the Department offers consultancy service in the management of crop diseases to the farmers of Cauvery delta region who visit the Department with their crop disease problems. Also, **Consultancy services in the technology development for mushroom production are being offered.**

### Salient Research achievement of the Department

Developed new package of cultivation practices for *Calocybe indica* and *Pleurotus* spp. under coastal climatic conditions and **Coiled rope method of mushroom bed preparation was first introduced.** The use of F class Fly ash (fortified lignite fly ash) for disease management has been brought out, the pathogenic nature of *Fusarium fusarioides* causing **wilt of tomato** was identified for the first time. *Alternaria* blight of Mondo grass, Die-back on hippeastrum and Damping-off disease in mint crop were reported for the first time. **Several antimicrobial (antimycotic and antibacterial) compounds were identified from seaweeds, plant, animal products and bioformulations** against the management of crop diseases and crude extracts of plants were formulated and standardized the dosage against seed and soil borne pathogens. Use of different

animal excreta and their combinations (Annamalai Mixture) for the management of viral diseases of pulses have been reported. Also, **85 new strains of microbes have been identified and deposited in NCBI**. For the past five years **96 new fungicide molecules** were tested for their bio-efficacy against various pathogens for different Agro-chemical industries.

Category	In Total		Last five year period	
	Nos.	Outlay	Nos.	Outlay
Projects Handled				
Govt. funded Project	09	1.65 Cr.	04	1.23 Cr.
Private funding Agencies	150	5.92 Cr.	109	5.26 Cr.
Ph.D. Thesis Awarded	35		06	
PG Thesis Awarded	308		90	
Publications	466		234	
Books	12		07	
Book chapters	133		129	
Practical manuals	16		07	
Endowments offered by the Dept.	05		05	
International and National Workshops, Seminar, Conferences organized	11		05	
Awards by the Faculty	55		21	
Visits of Foreign countries	09		06	

#### 6.4.2. Faculty Strength

Presently 22 faculty members are available in the Department with different areas of specialization *viz.*, biological control, natural products, new generation fungicides in crop disease management and edible mushroom production technologies.

Sl.No.	Cadre	Sanctioned	Filled (as on July 2022)	Vacant position	Faculty Recommended by ICAR/UGC/ VCI/ other regulatory bodies
1.	Professors*	03	03	0	-
2.	Associate Professor*	06	06	0	01
3.	Assistant Professors*	13	13	0	02
<b>Total</b>		<b>22</b>	<b>22</b>		<b>03</b>

\* Engaged in UG, PG and Ph.D. Programmes

**Faculty deputed from other Departments to handle common, supporting and Non-Gradial courses**

<b>Sl.No.</b>	<b>Cadre</b>	<b>Sanctioned</b>	<b>Filled (as on August 2022)</b>	<b>Vacant position</b>	<b>Faculty Recommended by ICAR/UGC/ VCI/ other regulatory bodies</b>
1.	Professors	1	1(Political Science)	0	-
2.	Associate Professor	2	2 (Agronomy and English)	0	-
3.	Assistant Professors	5	5 (Statistics, Library, Agrl. Economics and Computer Sciences)	0	-
	<b>Total</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>-</b>



**Credentials of the faculty**

Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students Guided		*Total number of Publications	Total number of Publications (July 2015 to June 2017)		Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others	Journals	**Others
Dr. D. John Christopher Professor & Head	24	Eco-friendly Management of Plant Diseases	17	05	37	32	03	05	03
Dr. A. Eswaran Professor	29	Edible Mushroom and disease identification	33	11	50	02	01	05	00
Dr. S. Usha Rani Professor	29	Biological control of Plant Diseases	25	05	40	02	00	03	00
Dr. P. Balabaskar Associate Professor	22	Biological management of crop diseases	16	04	56	21	02	08	00
Dr. P. Renganathan, Associate Professor	20	Post-Harvest disease management, Mushroom Technology.	09	01	75	10	00	36	16
Dr. K. Sanjeevkumar Associate Professor	19	Biological Management of Crop diseases and Mushroom	11	01	96	12	02	35	22
Dr. A. Muthukumar; Associate Professor	18	Biological control of soil and foliar borne plant pathogens	08	01	158	07	02	38	55
Dr. T. Sivakumar Associate professor	18	Biological control, IDM, Antimicrobial activity of medicinal plants against plant pathogen	10	01	42	05	00	23	00
Dr. L. Darwin Christdhas Henry Associate Professor	22	Mushrooms	10	01	46	08	10	21	07
Dr. J. Raja Assistant Professor	22	Diagnosis of plant pathogens	03	00	05	00	0	01	00

Dr. C. Kannan Assistant professor	17	Biological control of Plant diseases	07	00	90	00	00	51	39
Dr. T. Suthin Raj Assistant Professor	17	Plant disease management using seaweeds	08	02	84	18	00	24	08
Dr. K. Rajamohan Assistant Professor	17	Biological control for soil borne diseases	06	01	21	04	Nil	14	04
Mr. R. Kannan Assistant professor	17	Biotechnology and disease management	04	00	83	8	00	52	23
Dr. M. Thamarai Selvi. Assistant Professor	17	Biological disease management	05	00	18	01	00	08	04
Dr. R. Sutha Raja Kumar Assistant Professor	17	Edible mushroom cultivation	05	00	45	10	00	30	05
Mrs. S. Sudhasha, Assistant Professor	16	Biological control, Botanicals in plant disease management	04	00	29	00	00	12	14
Dr. V. Jaiganesh Assistant Professor	16	Rice Pathology	02	00	125	01	00	69	49
Dr. S. Sanjaygandhi Assistant Professor	16	Biological control of plant disease management	05	01	54	02	00	31	21
Dr. R. Udhayakumar Assistant Professor	16	Post harvest Pathology & Bio control	5	00	103	06	2	48	27
Dr. L. Vengadeshkumar Assistant Professor	15	Nano science in Plant Pathology, Biopesticides in plant disease management	05	01	45	Nil	Nil	41	23
Dr. S. Sundaramoorthy Assistant Professor	13	Plant Quarantine; Pl. Protection; Mycology	Nil	Nil	15	02	01	02	Nil

\*Includes journal, books, book chapters, conference proceedings

\*\* Includes books, book chapters, conference proceedings

**Awards/Recognitions**

Sl.No	Name of the faculty	Year	Awards	Venue	National / International
1.	Dr. A. Muthukumar	2017	Best Researcher Award	IRDP Group of Journals, Uttar Pradesh	National
2.	Dr. A. Muthukumar	2017	Excellence in Research Scientist Award	International Conference on ABCD, Advances in Agricultural and Bio-diversity conservation for sustainable development, Uttar Pradesh	International
3.	Dr. A. Muthukumar	2017	Best poster presentation Award	Annamalai University	National
4.	Dr. S. Sundaramoorthy	2017	Member in Expert Committee on Invasive Alien Species	National Biodiversity Authority, Chennai	National
5.	Dr. P. Renganathan	2018	Excellence In Research Award	Endling conferences society & ICFA, Jhanbad, Jharkhand	International
6.	Dr. L. Darwin Christdhas Henry	2018	Outstanding Pathologist Award	International conference on interdisciplinary research Technology, Thailand	International
7.	Dr. S. Sundaramoorthy	2018	Member in Expert Committee on Invasive Alien Species	National Biodiversity Authority (NBA), Chennai	National
8.	Dr. S. Sundaramoorthy	2018	In charge of Ramanad District, Krishi Kalyan Abhiyan (KKA) accomplishment	Krishi Kalyan Abhiyan (KKA) accomplishment, Ramnad, Tamil Nadu	National
9.	Dr. C. Kannan	2019	Outstanding Pathologist Award	National College, Trichy	National
10.	Dr. P. Balabaskar	2019	Best researcher award for Grant Generation	Annamalai University	National
11.	Dr. P. Renganathan	2019	Distinguished Scientist Award	ASTHA foundation & ICAR- (GRISAAS)	International
12.	Dr. T. Suthinraj	2019	Excellence in Teaching Award	3 <sup>rd</sup> International conference on GIASE-2019, Tribhuvan University, NEPAL	International

13.	Dr. T. Suthinraj	2019	Best Presentation Award	International conference on current immunological tools for biodiversity and status, CAS in Marine Biology, Annamalai University	International
14.	Dr. V. Jaiganesh	2019	Excellence in Research Award	Award– National college, Trichy	National
15.	Dr. V. Jaiganesh	2019	Best Young Teacher Award	AMITY University, Raipur	National
16.	Dr. L. Vengadeshkumar	2019	Best oral presentation award	Amity University, Raipur	International
17.	Dr. S. Sundaramoorthy	2019 – 2020	Successfully accomplished the Locust Control Operation in Scheduled Desert Area (SDA) in Rajasthan and Gujarat	Desert Area (SDA) in Rajasthan and Gujarat, Jodhpur	National
18.	Dr. K. Sanjeevkumar	2020	Best Scientist Award	National conference on SUMMIT-2020 (Science, Medicine, Agriculture, Research and Technology) Bangalore, India	National
19.	Dr. L. Vengadeshkumar	2020	Best oral presentation award	Periyar University	National
20.	Dr. T. Suthinraj	2021	Innovative Article Award	Agriculture and Food e-Newsletter, New Delhi	National
21.	Dr. V. Jaiganesh	2021	Young Agricultural scientist Award	Dr. B. Vasantharaj David Foundation, Chennai.	National

**Abroad visit**

Sl.No	Name of the Faculty	Country visited	Purpose of visit
1	Dr. P. Renganathan	Bangkok, Thailand, 2019	International conference on food, Agriculture and innovation
2	Dr. K. Sanjeev Kumar	Bangkok, Thailand, 2019	International conference on food, Agriculture and innovation
3	Dr. A. Muthukumar	Tribhuvan University, Nepal, 2019	International Conference on Global Initiatives in Agricultural and Applied sciences for Eco-friendly Environment
4	Dr. T. Sivakumar	Bangkok, Thailand, 2019	International conference on food, Agriculture and innovation
5	Dr. T. Suthin Raj	Tribhuvan University, Nepal, 2019	International Conference on Global Initiatives in Agricultural and Applied sciences for Eco-friendly Environment
6.	Dr. S.Sunadamoorthy	Canada, 2018	Import of Pulses from Canada in respect of MBr fumigation relaxation

**List of funded Projects**

Sl. No.	Year	Sponsored Agency	Total (lakh)	2017-2022 (lakh)
1.	2018-2023	DST-FIST Phase-I	89.00	89.00
2.	2009-2022	Government funding agency	76.00	33.99
3.	2002- 2022	Private Agro-chemical industries	592.00	526.39
<b>GRAND TOTAL</b>			<b>757.00</b>	<b>649.38</b>

**Government funding agency (2017-2022)**

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Funding Agency
1.	2018-2023	Co-ordinators Dr. S. Usharani & Dr. D. John Christopher	DST-FIST Phase-I	89.00	DST
2.	2018-2019	Dr. D. John Christopher	Transfer of technology for income generation to Kaja cyclone affected of carvery delta region through production of indigenous eco-friendly practices	0.50	TNSCST
3.	2015-2018	Dr. T. Suthinraj	Comparative Efficacy of Seaweed spp. for Elicitor value and management of rice foliar disease	20.54	DST, New Delhi
4.	2015-2018	Dr. D. John Christopher	Development and evaluation of bio-inoculants fortified lignite ash (LFA) against major disease of rice in Cauvery delta region of Tamil nadu	12.95	UGC, New Delhi
<b>Total</b>				<b>122.99</b>	

**Private Agro-chemical industries (2017-2022)**

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Funding Agency
1.	2018-2019	Dr. S. Usha Rani	Bio-efficacy of Pyroclostrobin 20% sulphur against early blight of tomato	1.50	M/s. Crystal Crop Protection Ltd., Delhi
2.	2018-2019	Dr. S. Usha Rani	Bio-efficacy of Pyroclostrobin 20% sulphur against tikka leaf spot of tomato	1.50	M/s. Crystal Crop Protection Ltd., Delhi

3.	2018-2019	Dr. D. John Christopher	Bio-efficacy evaluation of microbial formulation against late blight of Potato & downy mildew of Grapes	3.12	M/s. Coromandel Int. Ltd., Chennai
4.	2019-2020	Dr. D. John Christopher	Bio-efficacy study of SAAF GR (Carbendazim 1.92 + Mancozeb 10.08 GR) in Sugarcane against pokkah boeng disease & cuperofix Dispers (Copper Sulphate 47.15 + mancozeb 30% WG) in Pomegranate against disease complex of <i>Cercospora</i> spot and <i>Alternaria</i> spot and bacterial blight	9.05	M/s. UPL India Ltd., Mumbai
5.	2019-2020	Dr. D. John Christopher	Evaluation of Bio efficacy of Thiophanate Methyl 70% WDG for the control of downy mildew, Powdery mildew, and of Anthracnose of Grapes.	4.75	M/s.Sulphur Mills Ltd,Mumbai
6.	2019-2020	Dr. D. John Christopher	Bio efficacy trial of Pluton Azoxystrobin 11.5 %+Mancozeb 30%WP) against downy mildew of Grapes.	1.50	M/s.Crystal Crop Science Ltd.
7.	2019-2020	Dr. D. John Christopher	Bio efficacy trial of Pluton Azoxystrobin 11.5 %+Mancozeb 30%WP) against downy mildew of Grapes.	3.30	M/s.Crystal Crop Science Ltd.
8.	2020-2021	Dr. D. John Christopher	Bio-efficacy and phytotoxicity studies of Zineb75% WP against Greasy spot ( <i>Mycosphaerella citri</i> ) disease of citrus	5.15	M/s. Indofil industries, Ltd., Mumbai
9.	2020-2021	Dr. D. John Christopher	Evaluation of Bio-efficacy and phytotoxicity of Azoxystrobin12.5 + Tebuconazole 12.5 EC against blast and sheath blight of rice	4.95	M/s. Sumitoma chemical India Pvt. Ltd., Mumbai
10.	2020-2021	Dr. D. John Christopher	Bio-efficacy evaluation of Laminarin against powdery mildew of grapes and cucumber	11.05	M/s. UPL India, Ltd., Mumbai
11.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of Mancozeb 75% against leaf blight of onion	5.95	M/s. UPL India, Ltd., Mumbai
12.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of UPST 220 against the diseases of Soybean	5.95	M/s. UPL India, Ltd., Mumbai
13.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of Thiphanate Methyi 70 WP Mango diseases	4.5.0	NACL Ltd
14.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of UPST 120 against the diseases of Soybean	6.15	M/s. UPL India, Ltd., Mumbai
15.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of Thiphanate WDG against Chilli Diseases	4.75	Sulphur Mills
16.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of UPST 121 against the diseases of Soybean	6.15	M/s. UPL India, Ltd., Mumbai
17.	2016-2017	Dr. P. Balabaskar	Studies on Bio-efficacy of Dimethomorph 50 WP an Azoxystrobin 23 SC against diseases of Grapes	3.77	M/s. Coromandel Int. Ltd., Secunderabad

18.	2016-2017	Dr. P. Balabaskar	Evaluation of Bio-efficacy, phytotoxicity and residue assessment of Picoxystrobin 22.52% SC on diseases of Grapes and Carbendazim 50% WP on diseases of Grapes and Brinjal	4.23	M/s. Coromandel Int. Ltd., Secunderabad
19.	2016-2018	Dr. P. Balabaskar	Studies on the Bio-efficacy of SAAF against diseases of Mandarin	3.38	M/s. UPL Ltd., Mumbai
20.	2017-2018	Dr. P. Balabaskar	Evaluation of bioefficacy and phytotoxicity of Picoxystrobin 22.52% SC against paddy blast of rice.	1.0	Bharat Rasayan Ltd., NewDelhi
21.	2017-2018	Dr. P. Balabaskar	Studies on the bioefficacy of Pyraclostrobin 20% WG against Tikka disease of Groundnut	1.69	Coromandel International Ltd., Secunderabad
22.	2017-2018	Dr. P. Balabaskar	Studies on the bioefficacy of Boscalid fungicide against Powdery mildew and Downy mildew disease in grapes	1.69	Coromandel International Ltd., Secunderabad
23.	2016-2018	Dr. P. Balabaskar	Bio-efficacy of Juniper against diseases of Groundnut and Paddy	6.24	M/s. UPL Ltd., Mumbai
24.	2017-2018	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity evaluation of spirint (Carbendazim 25% + mancozeb 50 % WS) as soil application against paddy disease complex	3.90	Indofil industries, Mumbai
25.	2018-2019	Dr. P. Balabaskar	Evaluation of Bio-efficacy and phytotoxicity and residue trails of Mancozeb 40 % + Azexystrobin 7% against diseases of Paddy, Chilli and Potato	12.27	M/s. Coromandel Int. Ltd., Secunderabad
26.	2018-2020	Dr. P. Balabaskar	Evaluation of Bio-efficacy and phytotoxicity of Kasugamycin 3% SL against Xanthomonas leaf spot ( <i>Xanthomonas campestris</i> ) of Cabbage	4.94	Biostd India Ltd., Mumbai
27.	2018-2019	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity evaluation of Kasugamycin 1.5% + validamycin 2.5% SL in transplanted rice.	4.94	M/S sumitomo chemicals Pvt. Ltd., New Delhi.
28.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC 019 against soft rot disease ( <i>Pythium</i> spp.) of Ginger	4.94	Indofil industries, Mumbai
29.	2018-2020	Dr. P. Balabaskar	Evaluation of Bio-efficacy and phytotoxicity of UPF 1317 and UPF 116 against downy mildew, powdery mildew and anthracnose of grapes	8.89	M/s. UPL India Ltd., Mumbai
30.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC014 against purple blotch ( <i>Alternaria porri</i> ) disease of onion.	4.68	Indofil industries, Mumbai

31.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC009 against late blight ( <i>Phytophthora infestans</i> ) and Early blight ( <i>Alternaria solani</i> ) disease of potato.	4.94	Indofil industries, Mumbai
32.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity of IFC017 against downy mildew ( <i>Pseudoperonospora cubensis</i> ) disease of cucumber.	4.68	Indofil industries, Mumbai
33.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC021 against downy mildew ( <i>Pseudoperonospora destructor</i> ) disease of onion	4.68	Indofil industries, Mumbai
34.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFC017 against <i>Alternaria</i> blight disease of carrot.	4.68	Indofil industries, Mumbai
35.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC020 against purple blotch ( <i>Alternaria porri</i> ), leaf blight ( <i>Stemphylium vesicarium</i> ) and anthracnose ( <i>Colletotrichum</i> spp) disease of onion.	4.68	Indofil industries, Mumbai
36.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC008, IFFC009 and IFFC010 against major disease of grapes	14.82	Indofil industries, Mumbai
37.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC010 against purple blotch ( <i>Alternaria porri</i> ) and leaf blight ( <i>Stemphylium vesicarium</i> ) disease of onion.	4.68	Indofil industries, Mumbai
38.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC017 against leaf spots caused by <i>Alternaria macrospora</i> and <i>Cercospora gossypina</i> and boll rot disease of cotton.	4.94	Indofil industries, Mumbai
39.	2019-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity evaluation of Validamycin 5% + Tebuconazole 15% SC against sheath blight ( <i>Rhizoctonia solani</i> ) and Blast ( <i>Pyricularia oryzae</i> ) diseases of rice	4.94	M/s. Sumitoma chemical India Pvt. Ltd., Mumbai
40.	2019-2020	Dr. P. Balabaskar	Evaluation of bio-efficacy and phytotoxicity of UPF 1317 and UPF 116 against downy mildew, powdery mildew and anthracnose of Grapes	8.89	M/s. UPLIndia, Ltd., Mumbai
41.	2020-2020	Dr. P. Balabaskar	Evaluation of Bio –efficacy, Phytotoxicity of Mancozeb 75% WP as seed treatment & foliar application against Disease complex of Groundnut	2.52	M/s. Indofil industries, Ltd., Mumbai
42.	2020-2020	Dr. P. Balabaskar	Evaluation of Bio –efficacy, Phytotoxicity and residues sample collections of Mancozeb 75% WP as against Disease complex of Grapes	2.70	M/s. Indofil industries, Ltd., Mumbai
43.	2020-2021	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Zineb75% WP against downy mildew ( <i>Plasmopara viticola</i> ) of disease of grapes	5.40	M/s. Indofil industries, Ltd., Mumbai

44.	2020-2021	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Zineb75% WP against fruit rot and leaf spot disease of chilli	5.40	M/s. Indofil industries, Ltd., Mumbai
45.	2020-2021	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Zineb75% WP against blast ( <i>Pyricularia oryzae</i> ) disease of rice	5.30	M/s. Indofil industries, Ltd., Mumbai
46.	2020-2021	Dr. P. Balabaskar	Evaluation of Bio-efficacy, Phytotoxicity of Mancozeb 75 % WP as seed treatment & foliar application against disease complex of Ground nut	2.52	M/s. Indofil industries, Ltd., Mumbai
47.	2020-2021	Dr. P. Balabaskar	Evaluation of Bio-efficacy, Phytotoxicity and residue samples collections of Mancozeb 75 % WP against disease complex of Grapes	2.70	M/s. Indofil industries, Ltd., Mumbai
48.	2021-2023	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Cuprous oxide86.2% WG(IFC067) against diseases of Rice	5.80	M/s. Indofil industries, Ltd., Mumbai
49.	2021-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of impression (Tricyclazole 45% + Hexaconazole 10% WG) against blight ( <i>Alternaria porri</i> ) disease of onion	5.60	M/s. Indofil industries, Ltd., Mumbai
50.	2021-2023	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IIF-1516 against disease of Rice	5.80	M/s. Indofil industries, Ltd., Mumbai
51.	2021-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of Mancozeb 75% WP against major diseases of Banana	5.80	M/s. Coromandel Int. Ltd., Secunderabad
52.	2021-2023	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Merger (Tricyclazole18% + Mancozeb 62% WP) against Leaf spot ( <i>Phylosticta zinziberis</i> ) disease of Ginger	6.00	M/s. Indofil industries, Ltd., Mumbai
53.	2021-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of Mancozeb 75% WP against major diseases of Chilli	5.80	M/s. Coromandel Int. Ltd., Secunderabad
54.	2021-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of Mancozeb 75% WP against major diseases of Cauliflower and Maize	11.21	M/s. Coromandel Int. Ltd., Secunderabad
55.	2022	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity of bio stimulants - seaweed extract (Indolizer/Maxilizer) granules on growth and yield of Paddy	5.90	M/s. Indofil industries, Ltd., Mumbai

56.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of CIX- 3013 against major disease of Tomato	5.80	M/s. Coromandel Int. Ltd., Secunderabad
57.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of CIX- 3016 against major disease of Paddy	5.80	M/s. Coromandel Int. Ltd., Secunderabad
58.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of CIX- 3013 against major disease of Potato	5.80	M/s. Coromandel Int. Ltd., Secunderabad
59.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of CIX- 3013 against major disease of Grapes	5.80	M/s. Coromandel Int. Ltd., Secunderabad
60.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of mPGP and AbdA granules on paddy	5.49	M/s. Coromandel Int. Ltd.,
61.	2022-2024	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity of Famoxadone 16.6% Cymoxanil +22.1% Sc against downy mildew disease of grape	3.00	Rainbow Ltd.,
62.	2022-2024	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity of Pyraclostrobin 133g 1% + Epoxiconazole 503 SE against Sigatoka leaf spot of banana	2.25	Rainbow Ltd.,
63.	2016-2018	Dr. T. Sivakumar	Bio-efficacy and Phytotoxicity of Azoxystrobin + Tebuconazole SC on Chilli and Rice diseases	5.70	M/s. Nagarjuna Agrichem Ltd.,
64.	2017-2019	Dr. T. Sivakumar	Bio-efficacy and phytotoxicity studies of Bio nematon, Bio dewcon and Sting on Chilli, Cucumber, Grapes and Tomato diseases	7.04	M/s. T. Stanes & Co., Coimbatore
65.	2017-2019	Dr. T. Sivakumar	Bio-efficacy and Phytotoxicity of Bio-cure F WP on Chilli <i>Fusarium</i> Wilt; Bio-cure B WP and Bio Nematon WP on Tomato against <i>Alternaria solani</i> and root knot nematode	4.20	M/s. T. Stanes & Co., Coimbatore
66.	2018-2019	Dr. T. Sivakumar	Bio-efficacy of TS-2018 (Hydrophobic volatile oil) on chilli bacterial leaf spot ( <i>Xanthomonas campestris</i> ) diseases	1.50	T. Stanes @ Co., Coimbatore
67.	2018-2020	Dr. T. Sivakumar	Evaluation of a fungicide PIF 320 5 % SC against Powdery mildew of Chilli	3.90	M/s. PI Industries, Gurgaon
68.	2018-2020	Dr. T. Sivakumar	Evaluation the bio-efficacy of liquid formulation of bio-dewcon ( <i>Ampelomyces quisqualis</i> 5% $1 \times 10^8$ / ml) against Powdery mildew in Grapes	1.40	M/s. T-stanes & company Ltd, Coimbatore
69.	2022	Dr. T. Sivakumar	Evaluation of Bio-efficacy and Phytotoxicity studies of Platina and fantac plus on Cotton	5.488	Coromandel international Ltd., Secunderabad.

70.	2022	Dr. T. Sivakumar	Evaluation of Bio-efficacy and Phytotoxicity studies of Abda foliar, fantac plus and platina on Chilli	5.488	Coromandel international Ltd., Secunderabad.
71.	2020-2021	Dr. T. Sivakumar	Evaluation of Bio-efficacy, Phytotoxicity of Zineb 75 % WP against Blight and Rust disease of wheat	5.40	M/s. Indofil industries, Ltd., Mumbai
72.	2018-2020	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of IFFC020 against late blight ( <i>Phytophthora infestans</i> ) and Early blight ( <i>Alternaria solani</i> ) disease of tomato.	4.68	Indofil industries Ltd, Mumbai
73.	2018-2020	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of IFFC008 against late blight ( <i>Phytophthora infestans</i> ) and Early blight ( <i>Alternaria solani</i> ) disease of tomato.	4.68	Indofil industries Ltd, Mumbai
74.	2018-2020	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of IFFC014 against late blight ( <i>Phytophthora infestans</i> ) and Early blight ( <i>Alternaria solani</i> ) disease of tomato.	4.68	Indofil industries Ltd, Mumbai
75.	2018-2020	Dr. K. Sanjeev Kumar	Studies on the bio-efficacy of Azoxystrobin +Cyproconazole fungicide on fungal diseases of maize	1.85	Coromandel international Ltd., Secunderabad.
76.	2020-2021	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of Mancozeb75% WP against early blight ( <i>Alternaria solani</i> ) and late blight ( <i>Phytophthora infestans</i> ) disease of potato	5.40	M/s. Indofil industries, Ltd., Mumbai
77.	2020-2021	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of Zineb75% WP against early blight ( <i>Alternaria solani</i> ) and late blight ( <i>Phytophthora infestans</i> ) disease of potato	5.40	M/s. Indofil industries, Ltd., Mumbai
78.	2021-2023	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of AVATAR (Hexaconazole 4% + Zineb 68% WP) against Powdery Mildew ( <i>Oidium manifeferae</i> ) and Anthracnose ( <i>Colletotrichum</i> sp.) diseases of Mango	5.60	M/s. Indofil industries, Ltd., Mumbai
79.	2021-2023	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of AVATAR (Hexaconazole 4% + Zineb 68% WP) against Rust of Soya Bean <i>Phakopsora pachyrhizi</i> , PSS (Purple seed stain) and leaf spot diseases of soyabean	5.60	M/s. Indofil industries, Ltd., Mumbai
80.	2022	Dr. K. Sanjeev Kumar	Evaluation of Bio-efficacy and Phytotoxicity studies of Abda drip and Fantac plus on Tomato	5.488	Coromandel international Ltd., Secunderabad.

81.	2022	Dr. K. Sanjeev Kumar	Evaluation of Bio-efficacy and Phytotoxicity studies of AbdA foliar and Guard –5 on Tomato	5.488	Coromandel international Ltd.,
82.	2022	Dr. K. Sanjeev Kumar	Evaluation of Bio-efficacy and Phytotoxicity studies of Guard –5 and Fantac plus on Grapes	5.488	Coromandel international Ltd.,
83.	2022	Dr. K. Sanjeev Kumar	Evaluation of Bio-efficacy, Phytotoxicity of Bio stimulants – seaweed extract (Indolizer and Maxilizer) granules on growth and yield of onion	5.80	M/s. Indofil industries, Ltd., Mumbai
84.	2015-2017	Dr. A. Muthukumar	Testing of new seed treatment fungicides Sedaxane 3% + Fludoxanil 4.63% 90 FS against disease complex in Potato	2.00	M/s. Syngenta India Ltd., Coimbatore
85.	2016-2018	Dr. A. Muthukumar	Testing of new fungicide Sedaxane + Fludoxanil + Mefonoxam 300 FC against Corn diseases and Pydiflumetofen + Difenconazole 200 SC against Tomato, Chilli and Grapes diseases	8.00	M/s. Syngenta India Ltd., Coimbatore
86.	2017-2018	Dr. A. Muthukumar	Testing of Carbendazim 50% WP against Powdery mildew in Pea	2.60	M/s. Crystal Crop Protection Ltd., Delhi
87.	2017-2018	Dr. A. Muthukumar	Evaluation and bio-efficacy of Azoxystrobin 23 SC against mango and chilli diseases	2.50	M/s Bhagiradha Chemicals Ltd., Hyderabad
88.	2017-2019	Dr. A. Muthukumar	Bio-efficacy and phytotoxicity evaluation of Metiram 70% WG against early blight of Tomato	2.50	M/s. Crystal Crop Protection Ltd., Delhi
89.	2017-2019	Dr. A. Muthukumar	Bio-efficacy and phytotoxicity evaluation of Metiram 70% WG against tikka leaf spot in Groundnut	2.50	M/s. Crystal Crop Protection Ltd., Delhi
90.	2017-2019	Dr. A. Muthukumar	Testing of new fungicide Amistar Top 325 SC against Groundnut, Black gram and Banana diseases	6.00	M/s Syngenta India Ltd, Coimbatore
91.	2017-2019	Dr. A. Muthukumar	Testing of new fungicide viz., Vibrance Maxx against Groundnut diseases, TASP 30EC against Mango and Black gram diseases	6.00	M/s Syngenta India Ltd, Coimbatore
92.	2017-2019	Dr. A. Muthukumar	Testing of new fungicide viz., APN+DFZ 200SC against Potato early blight, IZM+DFZ 250SC against Rice diseases and Amistar Top 325 SC against Okra diseases	6.00	M/s Syngenta India Ltd, Coimbatore

93.	2017-2019	Dr. A. Muthukumar	Bio-efficacy and phytotoxicity evaluation of Metiram 70% WG against early blight of Tomato & Groundnut	5.00	M/s. Crystal Crop Protection Ltd., Delhi
94.	2017-2019	Dr. A. Muthukumar	Bio-efficacy studies of a novel combination fungicide CCP-1409 SC against sheath blight of Paddy	3.32	M/s. Crystal Crop Protection Ltd., Delhi
95.	2018-2019	Dr. A. Muthukumar	Bio-efficacy and Phytotoxicity evaluation of Picoxystrobin 22.52% SC against powdery mildew and downy mildew in grapes	1.50	M/s. Crystal Crop Protection Ltd., Delhi
96.	2018-2019	Dr. A. Muthukumar	Bio-efficacy and Phytotoxicity evaluation of Picoxystrobin 22.52% SC on Rice	1.50	M/s. Crystal Crop Protection Ltd., Delhi
97.	2019-2020	Dr. A. Muthukumar	Testing of coded molecule CCP-2806 against rice sheath blight and brown spot disease.	1.50	M/s Crystal Crop Protection Ltd., New Delhi
98.	2020-2021	Dr. A. Muthukumar	Testing of coded molecule CCP-2806 against rice sheath blight and brown spot disease.	1.50	M/s Crystal Crop Protection Ltd., New Delhi
99.	2020-2021	Dr. A. Muthukumar	Evaluation of Tubuconazole 12.5%+Carbendazim 12.5% SC on Rice	3.50	Bioscience Research Foundation Project, Chennai
100.	2022-2023	Dr. A. Muthukumar	Bio efficacy studies of CF-1020 SC for downy mildew and anthracnose disease on grapes	2.00	M/s Crystal Crop Protection Ltd., New Delhi
101.	2020-2021	Dr. T. Suthinraj	Evaluation of KK-21 against powdery mildew ( <i>Uncinula necator</i> ) and Anthracnose ( <i>Elsinoe ampelina</i> ) diseases on Grape	4.50	M/s Sulphur Mills Ltd., Mumbai
102.	2022-2023	Dr. T. Suthinraj	Bio-efficacy of ALFI 216 against Whit grubs, Termites, Collar rot, Sclerotium rot and root rot in groundnut field.	5.50	Atul Ltd.
103.	2022-2023	Dr. T. Suthinraj	Bio-efficacy of ALF 400 as a fungicide product against sheath blight and blast in rice field.	5.50	Atul Ltd.
104.	2015-2017	Dr. R. Udhayakumar	Testing of new fungicides viz., Bravo top 550 SC on Tomato and Chilli and Moddus EC on Rice	6.00	M/s. Syngenta India Ltd., Coimbatore

105.	2016-2018	Dr. R. Udhayakumar	Testing of new fungicide viz., Bravo Top 550 EC, Pydiflumetofen+ Difenconazole 200 SC, Paclobutrazole 25 SC against groundnut diseases and Penconazole 10 EC against mango diseases	6.00	M/s. Syngenta India Ltd., Coimbatore
106.	2017-2019	Dr. R. Udhayakumar	Testing of new fungicide Mandipropamid 23 SC against Cucumber, Watermelon and Bitter gourd diseases	6.00	M/s. Syngenta India Ltd., Coimbatore
107.	2017-2019	Dr. R. Udhayakumar	Testing of new fungicide Orondis Ulta 280SC, 170 SC against Grapes and Tomato diseases and APN+DFZ 200 SC against Mango disease	6.00	M/s. Syngenta India Ltd., Coimbatore
108.	2017-2019	Dr. R. Udhayakumar	Testing of new fungicide Folio Gold 36.4 SC against citrus and ginger diseases	4.00	M/s. Syngenta India Ltd., Coimbatore
109.	2019-2021	Dr. R. Udhayakumar	Testing of new fungicide Orondis Flexi 170SC against watermelon diseases and Miravis ace 275 SE against cotton diseases	4.00	M/s. Syngenta India, Ltd., Coimbatore
<b>Total</b>				<b>526.39</b>	

### 6.4.3. Technical and Supporting staff

The technical and supporting staff of the Department of Plant Pathology is given below

Sl. No.	Sanctioned Posts	Staff in place	Designation (number within parentheses)	Responsibility	Administrative staff requirement as per the ICAR
1	Secretarial staff	1	Special officer	Establishment Admirative work for Department of Plant Pathology	-
2	Technical staff	2	Deputy Farm Superintendent	Maintenance of laboratory and stock, glass house and experimental plots	Lab Assistant -1
3	Ministerial staff	5	Helper (3) Gardener (2)	Dispatch of letters, circular maintenance, assisting practical classes	Field Assistant -1 Assistant - 1

### 6.4.4. Class room and laboratories

The Department has well equipped class rooms and laboratories with large collections of disease specimen and photographs, including a bio-technological laboratory for genetic identification of pathogenic races.

Sl. No.	Name of the Instructional Unit	Size (ft) /Area (sq.ft)	Seating capacity	Description & Equipment's housed
1	PG & Ph.D.- Lab 1	29' × 20' = 580 sq.ft	20	<ul style="list-style-type: none"> <li>➤ PCR-Thermocycler</li> <li>➤ Gel Documentation System</li> <li>➤ Electrophoresis Unit</li> <li>➤ UV Transilluminator</li> <li>➤ Fermentor</li> <li>➤ Microscope with bright field Phase contrast and digital SLR Camera</li> <li>➤ ELISA Reader</li> <li>➤ Spectrophotometer</li> <li>➤ Cooling Centrifuge</li> <li>➤ Deep freezer</li> <li>➤ Micro centrifuge</li> <li>➤ Camera lucida</li> </ul>
2	PG & Ph.D. -Lab 2	31' × 20' = 620 sq.ft	20	<ul style="list-style-type: none"> <li>➤ Bio safety cabinet</li> <li>➤ Laminar Air Flow</li> <li>➤ Hot Air Oven</li> <li>➤ BOD</li> <li>➤ Shaking incubator</li> <li>➤ Autoclave</li> <li>➤ Cooling orbital shaking incubator</li> </ul>

3	PG & Ph.D. -Lab 3 (Biotechnology Lab)	08' × 20' = 160 sq.ft	10	<ul style="list-style-type: none"> <li>➤ RT-PCR</li> <li>➤ Western blot unit</li> <li>➤ Growth Chamber</li> <li>➤ Lyophilizer</li> <li>➤ -80°C deep freezer</li> <li>➤ Fluorescent Phase contrast Microscope</li> <li>➤ Digital microscope</li> <li>➤ Fluorometer</li> </ul>
4	PG Class room	29' × 19' = 551 sq.ft	20	<ul style="list-style-type: none"> <li>➤ LED TV and LCD projector</li> </ul>
6	UG -Lab 1	42' × 25' = 1050 sq.ft	30	<ul style="list-style-type: none"> <li>➤ LED TV and LCD projector</li> <li>➤ Student microscope- 30 nos.</li> <li>➤ Ocular Micrometer</li> <li>➤ Stage Micrometer</li> <li>➤ Plant disease images</li> </ul>
7	UG -Lab 2	36' × 25' = 900 sq.ft	30	<ul style="list-style-type: none"> <li>➤ LED TV and LCD projector</li> <li>➤ Student microscope- 30 nos.</li> <li>➤ Plant disease images</li> </ul>
8	UG -Lab 3	42' × 30' = 1260 sq.ft	30	<ul style="list-style-type: none"> <li>➤ LED TV and LCD projector</li> <li>➤ Student microscope- 30 nos.</li> <li>➤ Plant disease images</li> </ul>
9	Mushroom Lab	31' × 15' = 465 sq.ft		<ul style="list-style-type: none"> <li>➤ Edible mushroom production</li> </ul>
10	Mushroom shed	30' × 15' = 450 sq.ft		<ul style="list-style-type: none"> <li>➤ Exclusive for milky mushroom cultivation</li> </ul>
11	Glass house	38' × 15' = 570 sq.ft		<ul style="list-style-type: none"> <li>➤ To carry out the pot culture experiments</li> </ul>
12	Pot Culture Yard	40 cents		<ul style="list-style-type: none"> <li>➤ To carry out the pot culture experiments</li> </ul>
13	Experimental trial Plot	60 cents		<ul style="list-style-type: none"> <li>➤ To conduct the Experimental trials for research scholars</li> </ul>
14	Library	250 sq.ft	20	<ul style="list-style-type: none"> <li>➤ Books - 342</li> <li>➤ E-Books - 155</li> <li>➤ M.Sc. (Ag.) Thesis - 308</li> <li>➤ Ph.D. Thesis - 035</li> <li>➤ E-Journals - 032</li> <li>➤ Journals - 012</li> </ul>

Lab -1



Lab- 2



Lab -3



PG Class room



UG -Lab



Mushroom shed



#### 6.4.5. Conduct of Practical and Hands-on-Training

<p>Hands on training during classes</p>	<p><b>Plant Pathogenic fungi</b></p> <ul style="list-style-type: none"> <li>➤ Microscopic examination of generic level of taxonomic key for important plant pathogenic fungi</li> <li>➤ Culturing and maintenance of plant pathogenic fungi</li> <li>➤ Morphological characterization of plant pathogenic fungi</li> <li>➤ Molecular characterization and dendrogram analysis</li> <li>➤ Importance of culture collection and herbarium of fungi</li> <li>➤ Estimation of defence enzymes and Phenolic compound in the induction systemic resistance of crop plants.</li> </ul> <p><b>Plant Virology</b></p> <ul style="list-style-type: none"> <li>➤ Isolation and purification of plant viruses</li> <li>➤ Detection and diagnosis of plant viruses with serological (ELISA)</li> <li>➤ Bioassay of virus cultures on indicator plants and host differentials</li> <li>➤ Studies on mechanical and vector transmission of plant viruses</li> <li>➤ Electron microscopy for studying viral particle morphology</li> <li>➤ Identification and quantification of virus from infected plants through RT-PCR</li> </ul>
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	<p><b>Plant Pathogenic Prokaryotic organisms</b></p> <ul style="list-style-type: none"> <li>➤ Isolation of Phytopathogenic bacteria- Enumeration and Purification methods</li> <li>➤ Preparation of Stains and bacterial smears</li> <li>➤ Isolation of genomic DNA and molecular characterization</li> <li>➤ Identification of prokaryotic organisms using 16S rDNA, and other gene sequences</li> <li>➤ Diagnosis and management of important diseases caused by Bacteria and Mollicutes</li> </ul> <p><b>Integrated Disease Management</b></p> <ul style="list-style-type: none"> <li>➤ Screening of natural antagonistic bio agents, plant products against crop disease management</li> <li>➤ Evaluation of chemicals and antibiotics against plant pathogens</li> <li>➤ Evaluation of fungal and bacterial bio solutions against plant pathogens</li> <li>➤ Different methods of application of fungicides and bio solutions</li> <li>➤ Artificial epiphytotic and screening of resistance against crop diseases</li> </ul> <p><b>Host parasite relationship of crop diseases</b></p> <ul style="list-style-type: none"> <li>➤ Identification of crop disease symptoms through live specimens, field visits, colour photographs and microscopic observations.</li> </ul> <p><b>Edible Mushroom</b></p> <ul style="list-style-type: none"> <li>➤ Studies on various cultivation practices for edible mushroom</li> <li>➤ Studies on influence of mushroom diet on the haematological and lipid profile of Albino rats with due approval from animal ethical committee.</li> </ul>
<p>Field visits/ visit to renowned institutes, industries, progressive farms etc.,</p>	<ul style="list-style-type: none"> <li>➤ Field visits are arranged for the students to research institutes like NIFTEM – Thanjavur, Pondicherry University, CUTN- Tamil Nadu.</li> <li>➤ Institutional visits are arranged to ICAR-NRCB Trichy, ICAR-SBI Coimbatore for acquainting knowledge in the identification of different types of diseases in crops</li> <li>➤ Educational tour is arranged for the students to visit ICAR and Central Govt. institutes located at Western ghats areas such as Rubber board, UPASI, CTCRI, ICRI to acquire the knowledge of disease epidemiology of spices and plantation crops</li> <li>➤ Visit to bio-control lab PASIC, Puducherry to gain knowledge on the establishment of bio-control unit.</li> <li>➤ Visit to mushroom production unit to gain knowledge to set up an economically viable mushroom production unit.</li> </ul> <p>Visit to Progressive farmers field to know the adoption of disease management technologies</p>

#### 6.4.6. Supervision of students in PG programme

The staffs who have completed five years of teaching service are allotted PG students for their research guidance. Presently, all the twenty-two faculties in the department are allotted PG students and so far 308 students have got their M.Sc. degree. To facilitate the student in carrying out the thesis research program an advisory committee is formed before the end of first semester. The advisory committee shall comprise a chairman and two members, of which one member shall be from the major Discipline and another from any other Discipline in the related field of research. The chairman of the advisory committee will guide the student throughout the program for

selecting appropriate thesis research and seminar. At the end of each semester the evaluation of research is done by the advisory committee members to offer remarks/ suggestions for improvement of research.

<b>Sl.No</b>	<b>No. of recognised Teachers for PG guidance</b>	<b>Academic year</b>	<b>Intake of students</b>	<b>Student teacher ratio</b>
1	22	2021-2022	16	1:1.37
2	21	2020-2021	17	1:1.23
3	21	2019-2020	18	1:1.16
4	21	2018-2019	19	1:1.10
5	21	2017-2018	20	1:1.05



**List of M.Sc. (Ag.) Degree Awarded (2017 to 2022)**

S. No.	Year	Research supervisor Name	Student's Name	Title of thesis
1.	2017-2018	Dr. L. Vengadeshkumar	Akshaya, C. K	Studies on the management of maydis leaf blight of maize incited by <i>Bipolaris maydis</i> (Nisikado and Miyake) shoemaker
2.	2017-2018	Dr. J. Raja	Anupriya, D	Use of <i>Trichoderma</i> -fortified cow manure compost for the management of charcoal rot disease of sunflower
3.	2017-2018	Mr. R. Kannan	Brindha, P	Studies on the management of rice sheath blight caused by <i>Rhizoctonia solani</i> (Kuhn) using <i>Pseudomonas fluorescens</i> and organic amendments
4.	2017-2018	Dr. M. Thamarai selvi	Chandrika, R	Efficacy of seaweed extract and bacterial bio control agents for the control of sheath blight of rice caused by <i>Rhizoctonia solani</i> (Kuhn.)
5.	2017-2018	Mrs. S. Sudhasha	Charumathi, M	Biological management of <i>Fusarium</i> wilt of tomato ( <i>Solanum lycopersicum</i> Mill) caused by <i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i> (Sacc.) (Synder and Hansen)
6.	2017-2018	Dr. V. Jaiganesh	Devishanthini, V	Studies on use of silicon-based nutrient and resistance inducing chemical for the management of sheath blight of Rice ( <i>Oryza Sativa</i> L.) caused by <i>Rhizoctonia solani</i>
7.	2017-2018	Dr. A. Eswaran	Dhivyapriya, N	Evaluation of different fungicides for the management of Chilli fruit rot caused by <i>Colletotrichum capsici</i> (syd.) Butler and Bisby.
8.	2017-2018	Dr. S. Usha rani	Jenisha, K	Studies on the efficacy of plant oils against <i>Lasiodiplodia theobromae</i> (Pat.) Griffon & Maubi and <i>Colletotrichum musae</i> (Berk. And Curtis.) Arx, the incitants of crown rot disease of banana
9.	2017-2018	Dr. John Christopher	Manikandan, K	Studies on eco-friendly disease management of late leaf spot ( <i>Phaeoisariopsis personata</i> Berk. And Curt.) rust ( <i>Puccinia arachidis</i> spegazzini) and stem rot ( <i>Sclerotium rolfsii</i> sacc.) diseases of groundnut
10.	2017-2018	Dr. L.D. C Henry	Pavithran iyanraj, S	Studies on Eco-friendly management of rice blast caused by <i>Pyricularia grisea</i>
11.	2017-2018	Dr. P. Balabaskar	Renuga, S	Studies on the management of Collar rot disease of Groundnut caused by <i>Aspergillus niger</i> (Van Tiegham.)
12.	2017-2018	Dr. P. Renganathan	Rubini, K	Studies on the management of paddy bacterial leaf blight caused by <i>Xanthomonas oryzae</i> pv. <i>oryzae</i> (Ishiyama) dye. using PGPR and botanicals
13.	2017-2018	Dr. A. Muthukumar	Sridevi, S	Studies on biological management of papaya anthracnose caused by <i>Colletotrichum papayae</i> (Penz.) Penz & Sacc. and <i>Lasiodiplodia theobromae</i> (Pat.) Griffon & Maubl,
14.	2017-2018	Dr. K. Sanjeev kumar	Subharathinam, M	Studies on the management of brinjal damping-off caused by <i>Pythium aphanidermatum</i> (EDSON) Fitz.

15.	2017-2018	Dr. C. Kannan	Swarnalakshmi, K. R	Efficacy of seaweed extract and biocontrol agents against Fusarium wilt <i>Fusarium solani</i> (Mart.) Sacc of Chilli ( <i>Capsicum annum</i> L.)
16.	2017-2018	Dr. T. Suthin raj	Vignesh, S	Studies on immunostimulatory activity of seaweed algae against <i>Plasmopara viticola</i> (Berk. And Curt.) DC Toni and <i>Uncinula necator</i> (SCHW.) Burr. Causing downy mildew and powdery mildew of grapes
17.	2017-2018	Dr. K. Raja mohan	Yuvarani, R	Studies on the management of basal rot of onion ( <i>Allium cepa</i> var. <i>aggregatum</i> G. Don) caused by <i>Fusarium oxysporum</i> f.sp. <i>cepae</i> (Hans.) snyder and Hansen using antagonists and AM fungi
18.	2018-2019	Dr. P. Balabaskar	Akshayasri, G	Studies on the management of anthracnose / Fruit rot of Chilli caused by <i>Colletotrichum capsici</i> (Syd.) (Butler and Bisby)
19.	2018-2019	Dr. R. Sudha raja kumar	Arul selvi, N	Studies on the eco-friendly management of <i>Sclerotium rolfsii</i> Sacc. the incident of stem rot of groundnut ( <i>Arachis hypogaea</i> L.)
20.	2018-2019	Dr. A. Eswaran	Ganesh saravanan, K	Standardization of certain cultural, physiological and post-harvest aspects of oyster and ELM oyster mushrooms
21.	2018-2019	Dr. A. Muthukumar	Hemananthini, K	Studies on the eco-friendly management of leaf blight of Jasmine ( <i>Jasminum sambac</i> L. Aliton) caused by <i>Alternaria jasmini</i> (Fr. Keissier)
22.	2018-2019	Dr. S. Usha rani	Jayapriya, M	Studies on the management of sheath blight of rice ( <i>Oryza Sativa</i> L.) incited by <i>Rhizoctonia solani</i> (Kuhn)
23.	2018-2019	Dr. K. Raja mohan	Kuppuraj, J	Studies on cultivation aspects of milky mushroom <i>Tricholoma giganteum</i> (Masse.) and its molecular characterization
24.	2018-2019	Dr. John Christopher	Lavanya, J	Studies on the integrated disease management of early blight of tomato incited by <i>Alternaria solani</i> (ELL. And MART.) Jones and Grout
25.	2018-2019	Dr. R. Udhaya kumar	Logeshwari, R	Studies on eco-friendly approaches for the management of stem end rot of mango incited by <i>Lasiodiplodia theobromae</i> (Pat.) Griffon. and Maubl.
26.	2018-2019	Dr. L. Vengadeshkumar	Mahalakshmi, G	Use of mangrove leaf extract on the management of tomato early blight disease
27.	2018-2019	Mr. R. Kannan	Murugavel, K	Studies on the management of <i>Fusarium</i> wilt of tomato caused by <i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i> (Sacc.) Synder and Hansen
28.	2018-2019	Dr. M. Thamarai selvi	Nandhini, S	Studies on the management of <i>Pythium aphanidermatum</i> (Edson) Fitzp the incitant of turmeric rhizome rot by using bio inoculants
29.	2018-2019	Dr. T. Sivakumar	Shankara Reddy, N. H.	Biological management of stem rot of tuberose ( <i>Polianthes tuberosa</i> L.) caused by <i>Sclerotium rolfsii</i> Sacc.
30.	2018-2019	Dr. T. Suthin raj	Nishanthi, P	Investigation on Eco-friendly antifungal compounds from seaweed and management of <i>Colletotrichum capsici</i> (Syd.) Butler and Bisby causing fruit rot of chilli using marine products

31.	2018-2019	Dr. K. Sanjeev kumar	Papitha, K	Studies on the biological management of anthracnose of Dolichos bean caused by <i>Colletotrichum lindemuthianum</i> (Sacc. and Magnus) Briosi & Cavara
32.	2018-2019	Dr. C. Kannan	Praveen, A	Efficacy of seaweed extract and biocontrol agents against <i>Sclerotium rolfsii</i> Sacc. causing stem rot of Groundnut ( <i>Arachis hypogea</i> L.)
33.	2018-2019	Dr. S. Sanjay gandhi	Soundarya, K	Studies on the management of damping-off of tobacco ( <i>Nicotiana tabacum</i> L.) incited by <i>Pythium aphanidermatum</i> (Edson) Fitzp
34.	2018-2019	Dr. L.D.C. Henry	Sowmiya, A	Studies on the cultural and epidemiological factors on enhancing the yield of <i>Calocybe indica</i> (P&C)
35.	2018-2019	Mrs. S. Sudhasha	Sumathra	Fungicidal activity of plant extracts against fusarium wilt in Tomato ( <i>Lycopersicum esculentum</i> ) caused by <i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i> (Sacc.)
36.	2018-2019	Dr. J. Raja	Vinitha, P	Induction of systemic resistance in rice by mixtures of <i>Pseudomonas fluorescens</i> with Ipomoea leaf extract and sheep urine against sheath rot ( <i>Sarocladium oryzae</i> ) disease
37.	2018-2019	Dr. P. Renganathan	Vinothini, K	Studies on the management of root rot of sesame ( <i>Sesamum indicum</i> L.) incited by <i>Macrophomina phaseolina</i> (Tassi) Goid.
38.	2019-2020	Dr. P. Renganathan	Dhaarani.S.	Studies on the biological management of crown rot of banana ( <i>Musa paradidica</i> ) caused by <i>Lasiodiplodia theobromae</i>
39.	2019-2020	Dr. P. Balabaskar	Dharshini R.	Studies on the management of rice bacterial leaf blight caused by <i>Xanthomonas oryzae</i> pv. <i>oryzae</i> using botanicals, PGPR and fresh cow dung
40.	2019-2020	Dr. A. Muthukumar	Dhivya.A.	Studies on the biological management of foot rot of brinjal ( <i>Solanum melongena</i> L.) caused by <i>Sclerotium rolfsii</i> Sacc.
41.	2019-2020	Dr. A. Eswaran	Gnanasri .M.	Studies on the fungicidal management of purple blotch of onion caused by <i>Alternaria porri</i> (Ellis) Cif.
42.	2019-2020	Dr. T. Suthin raj	Gobika R.	Studies on the management of dry root rot of black gram ( <i>Vigna mungo</i> . L) incited by <i>Macrophomina phaseolina</i> Goid using bioagents
43.	2019-2020	Dr. R. Sudha raja kumar	Indhu Bharathi Mani M.	Studies on the biological management of <i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i> (Sacc.) Synder and Hansen the incitant of Fusarium wilt of tomato
44.	2019-2020	Mrs. S. Sudhasha	Jaya sankara moorthy R.	Management of chilli ( <i>Capsicum annum</i> L.) damping-off incited by <i>Pythium aphanidermatum</i> (Edson) Fitzp, by using certain plant extract
45.	2019-2020	Dr. T. Sivakumar	Kuralarasi K.	Integrated management of collar rot of tomato ( <i>Solanum lycopersicum</i> L.) caused by <i>Sclerotium rolfsii</i> (Sacc.)
46.	2019-2020	Dr. S. Usha rani	Lavanya K.	Studies on the biological management of <i>Pythium aphanidermatum</i> (Edson) Fitzp the incitant of chilli ( <i>Capsicum annum</i> L.) damping-off
47.	2019-2020	Dr. John Christopher	Livitha R	Studies on bio control potential of antagonists along with fortified lignite fly ash against stem rot of groundnut caused by <i>Sclerotium rolfsii</i> Sacc.

48.	2019-2020	Dr. L. Vengadeshkumar	Mary Sharmila A.	Leaf extracts of mangroves on the management of rice sheath blight caused by <i>Rhizoctonia solani</i> (J.G.Kuhn)
49.	2019-2020	Dr. S. Sanjay gandhi	Monisha P.	Biological management of rice sheath blight caused by <i>Rhizoctonia solani</i> (Kuhn)
50.	2019-2020	Dr. L.D.C. Henry	Nithya Devi G.	Eco-friendly management of <i>Pythium aphanidermatum</i> (Edson) Fitzrp, the incitant rhizome rot of turmeric
51.	2019-2020	Dr. M. Thamarai selvi	Ramalakshmi G.	Consortia of bio-inoculants and compost against Fusarium wilt of tomato caused by <i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i> (Sacc.) Synder and Hansen
52.	2019-2020	Dr. R. Udhaya kumar	Saranya P.S.	Studies on the biological management of stem rot of groundnut ( <i>Arachis hypogea</i> L.) incited by <i>Sclerotium rolfsii</i> (Sacc.)
53.	2019-2020	Dr. C. Kannan	Soundarya A.	Studies on the management of <i>Pythium aphanidermatum</i> (Edson) Fitzp causing damping-off of tomato ( <i>Solanum lycopersicum</i> L.)
54.	2019-2020	Dr. K. Sanjeev kumar	Vidhya C.	Isolation and identification of phylloplane microflora against early blight of tomato caused by <i>Alternaria solani</i> (Ellis and Martn) Jones and Grout.
55.	2019-2020	Dr. K. Raja mohan	Vignesh K.	Combinational effect of AM fungi and PGPR for the management of wilt disease in tomato ( <i>Solanum lycopersicum</i> L.) caused by <i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i> (Sacc.) Synder and Hansen
56.	2020-2021	Dr. S. Sanjay gandhi	Abdinasir Mohamed Ibrahim	Studies on the biological management of wilt of tomato. ( <i>Lycopersicum escluentum</i> Mill) caused by <i>Fusarium oxysporum</i> f.sp <i>lycopersici</i> (Sacc.) Snyder and Hansen
57.	2020-2021	Mr. R. Kannan	Archanadevi K.	Biological Management of Basal Rot Of Onion ( <i>Allium cepa</i> var. <i>aggregatum</i> G.Don) Caused by <i>Fusarium oxysporum</i> f.sp. <i>cepae</i> (Hans.) Snyder and Hansen
58.	2020-2021	Dr. S. Usha rani	Bharathi, T.	Studies on the management of dry root rot of Groundnut ( <i>Arachish hypogaea.L</i> ) incited by <i>Macrophomina phaseolina</i> (Tassi) Goid using bio agents and Organic Amendments
59.	2020-2021	Dr. John Christopher	Jothika,C.	Integrated Disease Management for Rice brown leaf spot disease caused by <i>Bipolaris oryzae</i>
60.	2020-2021	Dr. P. Balabaskar	Kalaimathi, D.	Studies on the biological management of stem rot of Groundnut ( <i>Arachis hypogaea. L</i> ) incited by <i>Sclerotium rolfsii</i> Sacc.
61.	2020-2021	Dr. P. Renganathan	Karan. R.	Studies on the management of <i>Bipolaris oryzae</i> (Breda de Hann) Shoemaker causing brown leaf spot of rice
62.	2020-2021	Dr. K. Sanjeev kumar	Kokila, A.	Studies on the biological management of <i>Alternaria alternate</i> (Fr.) Keissler causing jasmine leaf blight
63.	2020-2021	Dr. A. Muthukumar	Mohanapriya, R.	Studies on the biological management of collar rot of peppermint ( <i>Mentha piperita</i> ) caused by <i>Sclerotium rolfsii</i> Sacc

64.	2020-2021	Dr. T. Sivakumar	Nivedha, R.	Studies on the biological control of <i>Rhizoctonia solani</i> (J.G.Kuhn) causing sheath blight of rice
65.	2020-2021	Dr. L.D.C Henry	Rameshkumar, R.	Certain studies on the cultivation of oyster mushroom ( <i>Pleurotus florida</i> ) and Its Antimicrobial Properties
66.	2020-2021	Dr. C. Kannan	Rekha, G.	Evolving Ecofriendly Management Strategies to Control Onion Basal Rot Incited By <i>Fusarium oxysporum</i> f.sp. <i>cepae</i> (Hansen) Snyder & Hansen
67.	2020-2021	Dr. T. Suthin raj	Rohini, R.	Exploration of Antimicrobial properties of Sea Weed & Plant oils in the biological control of <i>Colletotrichum gloeosporioides</i> (Penz) Penz. & Sacc., and <i>Lasiodiplodia theobromae</i> (pat.) Griffon & Maubl, an incitant of fruit rot Disease of Papaya
68.	2020-2021	Dr. A. Eswaran	Evanjalin, J.	Evaluation of Antimycotic Value of Certain Basidiomycetes Fungi Against <i>Macrophomina phaseolina</i> (Tassi) Goid Causing Root Rot in Groundnut
69.	2020-2021	Dr. K. Raja mohan	Sheneka, R.	Studies on the combined effect of antagonists and am fungi against collar rot of brinjal ( <i>Solanum melongena</i> L.) caused by <i>Sclerotium rolfsii</i> sacc
70.	2020-2021	Dr. M. Thamarai selvi	Subashini, S.	Consortia of Trichoderma Spp and different composts against <i>Macrophomina phaseolina</i> (Tassi) Goid. causing root rot in cow pea
71.	2020-2021	Dr. R. Sudha raja kumar	Suresh, G.	Studies on Cultivation of Milky Mushroom <i>Tricholoma giganteum</i> (TGS-1) And Its Antimicrobial Activities Against Certain Fungal Pathogens of Paddy
72.	2020-2021	Mrs. S. Sudhasha	Tamilselvan, B.	Studies on the biological management of water melon ( <i>Citrullus lanatus</i> ) wilt caused by <i>Fusarium oxysporum</i> f.sp. <i>niveum</i> (E.F.Smith)
73.	2020-2021	Dr. V. Jaiganesh	Vaishali, B.	Integrated Disease Management of Brown Spot In Rice Caused By <i>Bipolaris oryzae</i> (Breda de Haan)
74.	2021-2022	Dr. T. Sivakumar	Anupriya. T	Studies on the Biological Management of Dry root rot of Groundnut ( <i>Arachis hypogea</i> L.) caused by <i>Macrophomina phaseolina</i> (Tassi.) Goid.
75.	2021-2022	Dr. L.D.C Henry	Arsha. G	Certain studies on cultural & physiological aspects of <i>Volvariella volvaceae</i> and its antimicrobial properties
76.	2021-2022	Dr. John Christopher	Balamurugan. K	Studies on indigenous practices for control of major diseases of rice in the Cauvery delta region
77.	2021-2022	Dr. M. Thamarai selvi	Dharma suryaraj. K	Studies on the management of bioinoculants and organic amendments against stem rot of groundnut ( <i>Arachis hypogaea</i> l.) caused by <i>Sclerotium rolfsii</i> sacc.
78.	2021-2022	Dr. P. Renganathan	Gunaseeli. C	Studies on management of tomato ( <i>Solanum lycopersicum</i> l.) damping-off caused by <i>Pythium aphanidermatum</i> (Edson) Fitzp. using bacterial bioinoculants
79.	2021-2022	Dr. R. Sudha raja kumar	Harishini. S	Studies on the Antimicrobial activity of different species of wild Mushroom fungi against the Chilli fruit rot pathogen - <i>Colletotrichum capsici</i> along with the cultivation aspects of Wild oyster mushroom, <i>Pleurotus platypus</i>

80.	2021-2022	Mr. R. Kannan	Mohanapriya. S	Fungicidal management of Twister disease of small onion ( <i>Allium cepa</i> var. <i>aggregatum</i> ) caused by <i>Colletotrichum gloeosporioides</i> (Penz.) Penz. and Sacc.
81.	2021-2022	Dr. R. Udhaya kumar	Muthukumar. G	Management of basal rot of onion caused by <i>Fusarium oxysporum</i> f.sp. <i>cepae</i> (Hans.) Snyder & Hansen Using biocontrol agents and organic amendments
82.	2021-2022	Dr. S. Usha rani	Nandhini. B	Integrated disease management of leaf blight of sunflower ( <i>Helianthus annuus</i> L.) caused by <i>Alternaria alternata</i> (Fries) Kiessler
83.	2021-2022	Dr. A. Muthukumar	Nivetha. S	Certain studies on the management of rice sheath rot caused by <i>Sarocladium oryzae</i>
84.	2021-2022	Dr. P. Balabaskar	Pradeepraj. S	Studies on the management of rice sheath blight caused by <i>Rhizoctonia solani</i> (J.G.Kuhn)
85.	2021-2022	Dr. K. Sanjeev kumar	Shalini marry. D	Studies on efficacy of certain plant products management of <i>Alternaria alternata</i> (FR.) Keissler causing chilli leaf spot.
86.	2021-2022	Dr. T. Suthin raj	Sudharsan. R	Management of <i>Sarocladium oryzae</i> (Sawada) Gams and Hawks. causing sheath rot of rice using macro algae and bio control agent
87.	2021-2022	Dr. J. Raja	Surya. M	Morphological characteristics and molecular identification of fungal pathogens from wild plants.
88.	2021-2022	Dr. C. Kannan	Vanitha. A	Studies on the management of <i>Fusarium solani</i> causing fusarium wilt on tomato
89.	2021-2022	Dr. L. Vengadeshkumar	Varsha. R	Use of Mangrove leaf extract and <i>Ampelomyces quisqualis</i> on the management of black gram powdery mildew caused by <i>Erysiphe polygoni</i> (de candolle)
90.	2021-2022	Dr. K. Raja mohan	Vigneshwaran. K	Bio agent and Am fungi in the management of Rhizome rot of turmeric ( <i>curcuma longa</i> L.) Caused by <i>Pythium aphanidermatum</i>

**Students awarded with fellowships**

Year	No. of students	Name of the student	Fellowship	Sponsored by
2021-2022	02	Balamurugan. K Pradeepraj. S	Project Fellow	Coromandel India Ltd. and Crystal Crop Protection Ltd.
2020-2021	02	Jothika,C. Mohanapriya, R.		Coromandel India Ltd. and Crystal Crop Protection Ltd.
2019-2020	03	Livitha R Dhivya.A. Dharshini R.		UPL India Ltd., Mumbai, Coromandel India Ltd. and Crystal Crop Protection Ltd.
2018-2019	02	Akshayastri, G Hemanathini K.		Crystal Crop Protection Ltd.
2017-2018	01	Sridevi S.		Syngenta India Ltd.

**6.4.7. Feedback of stakeholders (Students, farmers, company, parents)****Feedback from the students.**

To facilitate a good relationship with students a mentor-Mentee system is being followed, in which each staff is allotted with a student. The staff will guide and address the student's grievances including personal problems. Feedback will be received from the students and action will be taken accordingly.

1. M.Sc. scholars requested to be provided with fellowship during their study tenure
2. Scholars earnestly requested for the conduct of an educational tour to visit various ICAR institutes and to directly experience the hot spot disease incidence of crop plants
3. Scholars requested the provision of chemicals and specific primers for fungal pathogens to carry out their molecular work to gain practical knowledge in biotechnological aspects.
4. The scholars placed a request for the provision of bio-safety equipment's to be used during isolation and inoculation of plant pathogenic cultures and to avoid the inhaling of pathogens while working in the Laminar flow chamber.
5. The scholars earnestly requested for coaching classes to be conducted for ICAR NET, SRF and SAU's entrance examinations

**Action taken**

The request made by the scholars are considered and recommended to the faculty who are handling private funded projects to provide fellowship to the scholars.

1. As per the request received from the scholars an educational tour was conducted during the academic year 2020-2021 which enabled the scholars to visit various ICAR and Central Government institutes such as CTCRI, CPCRI, ICRI, Rubber board and to organize field trips along the western ghats to observe the disease incidence of spices and plantation crops.
2. Immediately the required chemicals were purchased from the University A1 account and from private funding agencies for the benefit of the scholars for their uninterrupted work on molecular aspects.

3. The request was brought to the notice of the University authorities and immediately a bio-safety cabinet was purchased and commissioned in the Department, from the fund provided by DST-FIST.
4. According to the request of the scholars, three faculty (Dr. V. Jaiganesh, Dr. R. Udhayakumar & Dr. L. Vengadeshkumar) are deputed for conducting coaching classes for ICAR NET, SRF and SAU's entrance examinations, as a result more than 70% of the students have cleared ICAR NET examinations and good number of students have got admissions for PhD programme in reputed institutes like ICAR, Central universities and State Agricultural Universities
5. Once in a month research review meeting is conducted for the PG students with the advisory committee members to review the progress in the student's research work and suggestions are given for further improvement.

#### **Farmers**

Feedback from farmers is obtained during their visit to the Department with their crop disease problems.

1. The Technology developed by the Department regarding the package of practices for disease management is effectively transferred to the farmers through the RAWE programmes and during regular field visits by the staff.
2. Consultancy services in the technology development for mushroom production are being offered.
3. Training programmes are conducted to transfer of technology on 'Fortified lignite flyash, enriched compost and indigenous eco-friendly pesticides' for improvement in the livelihood status of the farmers.

#### **Company**

The staffs maintain a good relation with the Agro industries/pesticide industries. Through their interactions, information on the development of new molecules and details on emerging diseases/pests are obtained.

#### **Parents**

Feedback is obtained from the parents in every semester and the academic and personal problems of the students are solved.

#### **6.4.8. Student intake and attrition in the programme for last five years (M.Sc.(Agri.) Programme)**

Actual student admitted in last five years					Attrition (%)				
2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
20	19	18	17	16	0	5% (1no.)	0	0	0

**Student intake and progression in the programme for last five years (M.Sc.(Agri.) Programme)**

Academic Year	Number of students graduated	Progression				Total	Percent Progression
		Ph.D.	Employment				
			State Govt.	Private	Entrepreneur		
2021-2022	17	07	-	2	3	12	71%
2020-2021	17	04	2	6	3	15	88%
2019-2020	18	04	4	4	2	14	78%
2018-2019	19	10	-	5	3	18	95%
2017-2018	20	2	1	4	5	12	60%

**Higher education (Ph.D. Programme)**

Year	Name	Ph.D. Plant Pathology Programme		
		ICAR institutes	SAU's / Central Univ.	Parent institute
2021-2022	Kokila A	-	TNAU	-
	Sheneka R	-	TNAU	-
	Rohini R	-	TNAU	-
	Ramesh Kumar R.	ICAR SRF	TNAU	-
	Ganesh Saravanan K	-	TNAU	-
	Bharathi T	-	TNAU	-
	Evanjalin J	-	-	AU
2020-2021	Murugavel P	-	-	-
	Mary Sharmila A	ICAR SRF	-	-
	Vignesh K	-	-	AU
	Livitha R	-	-	AU
2019-2020	Manikandan K	IARI	-	-
	Vinothini K	-	TNAU	-
	Logeshwari R	-	TNAU	-
	Kuppuraj J	-	PAU	-
2018-2019	Swarnalakshmi KR	-	TNAU	-
	Jeyaprakash K	-	TNAU	-
	Veera Thilagam D	-	TNAU	-
	Vignesh S	-	TNAU	-
	Chandrika R	-	TNAU	-
	Yuvarani R	-	TNAU	-
	Praveen A	-	-	AU
	Sumathra S	-	-	AU
	Soundarya K	-	-	AU
Sankara Reddy N.H	-	-	AU	
2017-2018	Thirunarayanan P	-	BHU, Varanasi	-
	Naveenkumar R	-	BHU, Varanasi	-

**ICAR – NET Qualified**

<b>Year – Exam</b>	<b>Name</b>	<b>Roll Number</b>
NET 2021	Bharathi T.	4110864048
	Manikandan K.	4110865017
	Rameshkumar R.	4090865803
	Jothika C.	4110865161
	Sheneka R.	4110863847
	Jaiganesh V.	4090863857
NET 2019	Akshyasri G.	5090812434
	Ganesh Saravanan k	5090811661
	Jaiganesh V. <b>(National Level 1<sup>st</sup> Rank Holder)</b>	5090811902
	Kuppuraj J.	5090812180
	Livitha R.	5090811899
	Logeshwari R.	5110815750
	Mary Sharmila R.	5090812841
	Thirunarayanan P.	5310844051
	Vinitha P.	5090812760
Vinothini K.	5110815718	
Ten students from the Department of Plant Pathology were among the 105 candidates who cleared NET examination during 2019.		
NET 2018 (I) & (II)	Swarna Lakshmi K.R.	1020804228
	Sathiya Siavanantha moorthy M.	1080800675
	Rathinakumar G.	3050801102
	Devishanthini V.	1080800172
	Subharathinam M.	1080803227
	Naveenkumar R.	1070802194
	Vinothini K.	1080800205
	Hemanathini K.	1080802076
	Neha K.V.	1080802318
	Jayapriya M.	3090800226
	Jaiganesh V.	3090800769
	Thirunarayanan P.	1160800033
	Sridevi S.	1020800970
	Logeshwari R.	3090800560
	Charumathi M.	1080801289
	Vignesh S.	3110801535
	Logeshwari R.	1080801093
	Anupriya D.	1020804343
	Hemanathini K.	3110801541
	Sankara Reddy N. H.	3020801985
Ganesh Saravanan K.	3090801289	
Jaiganesh V. <b>(National Level 1<sup>st</sup> Rank Holder)</b>	1080800868	
Thaveedu S.	1080801192	
NET 2017	Thirunarayanan P.	2080800965
	Mohanapriya R.	2080801003

**UG Students secured admission in ICAR/ SAU's / Central Universities for PG Programme in Plant Pathology**

Year	Name	ICAR institutes	SAU's/ Central Universities
2020-2021	Abinaya B	ICAR JRF	KAU
	Velmurugan S	ICAR JRF – 5 <sup>th</sup> Rank	IARI
	S.R.M. Jeeyajeevitha	ICAR JRF	Aligarh Muslim University
	B. Bharathi	-	Nagaland University
	Miss. P. Shakthi Priya	-	Central Agricultural University, Imphal
2019-2020	Ayyanthurai	-	TNAU
2018-2019	Krishnamoorthi M.	-	Visva – Bharati University
	Sathyseelan K.	-	Visva – Bharati University
	Boopathi	-	Visva – Bharati University
	Shanmugaraj	-	Visva – Bharati University
	Sivagananpazham	-	Visva – Bharati University
	Deivam	-	Visva – Bharati University
	Gayathri M.	-	TNAU
	Krishnamoorthi M.	-	TNAU
	Archana T.	-	TNAU
	Sarankumar M.	-	TNAU
	Sathyseelan K.	-	TNAU
	Shanmugaraj C.	-	TNAU
	Kamali P.	-	TNAU
	Sivagnananpazham K.	-	TNAU
	Kanmani S.	-	TNAU
	Boopathi P.	-	TNAU
	Shamyuktha J.	-	TNAU
	Pavithra R.	-	TNAU
	Karthika S.	-	TNAU
	Dheivam M.	-	TNAU
	Basker S.	-	TNAU
	Nandhini S.	-	TNAU
2017-2018	Ramamoorthy R.	-	TNAU
	Goushik Raja S.	-	TNAU
	Oviya R.	-	TNAU
	Asmitha Sri	-	TNAU
	Emayavarman P.	-	TNAU
	Ruppavalli M.V.	-	TNAU
	Kavibharathi	-	TNAU
	Elangovan M.	-	Visva – Bharati University <b>(1<sup>st</sup> Rank)</b>
	Rathinakumar G.	-	Visva – Bharati University <b>(3<sup>rd</sup> Rank)</b>
	Gopinath V.	-	Visva – Bharati University <b>(5<sup>th</sup> Rank)</b>

#### 6.4.9. ICT Application in Curricula Delivery

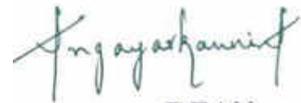
The class rooms are equipped with LED TVs and LCD facilities. Computers with internet connectivity (10 nos.) are also available for the faculty and students use. The teaching faculty has updated the usage of IT enabled gadgets. All the classes are handled with audio visual aids and video clippings. Students are made to make presentations in the recent topics of relevant subjects with the use of ICT tools. To enhance quality in research, students are encouraged to access relevant literatures from various e – sources.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. A. Angayarkanni** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

Self Study Report (2017 to 2022) for  
M.Sc. (Hort.) Fruit Science

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)



**FACULTY OF AGRICULTURE**

**Department of Horticulture**

**SELF STUDY REPORT OF**

**M.Sc. (HORT.) FRUIT SCIENCE**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## Self-Study Report

### 6.4 Name of the programme: M.Sc. (Hort.) Fruit Science

Offered by: Department of Horticulture

#### 6.4.1. Brief History

The Division of Horticulture came into existence in 1958 with an objective of offering horticultural subjects to B.Sc. (Ag.) graduates. In the early stages, the Division was attached with the Department of Agricultural Botany. Under the leadership of renowned Horticulturist of International repute, Dr. S. Krishnamoorthy, a pioneering post graduate course in Horticulture was introduced for the first time in South India in 1958-59. With further expansion, the erstwhile Division of Horticulture functioning from 1958-59 onwards was upgraded as a Department in 1991 with the revival of a full fledged post graduate programme - M.Sc. (Ag.) in Horticulture and later on it was renamed as M.Sc. (Hort.) in 2011. However, in tune with the guidelines of ICAR new regulations to offer specialized degrees *viz.*, Fruit Science, Vegetable Science, Floriculture and Landscape Gardening and Plantation, Spices, Medicinal and Aromatic Crops were introduced from the year 2012 onwards.

Historical Itinerary	Year/Period
Division of Horticulture	1958
First PG Programme in Horticulture	1958-59
Upgraded as a Department	1991
Post graduate Programme M.Sc. (Ag.) in Horticulture	1991
M.Sc. (Hort.) in Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2012 -2013
M.Sc. (Hort.) Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2022-2023 onwards

The M.Sc. (Hort.) Fruit Science has 70 credits in four semesters which includes 20 credits for major courses, 08 credits for minor courses, 06 credits for supporting courses, 05 credits for common courses, 01 credit for seminar and 30 credits for master's thesis research. In addition to the 70 credits, 05 contact hours for non-credit compulsory courses has been included to improve the research acumen and employability of the students. Revision of the curricula was carried out in the academic year 2022 -2023 in concurrence with latest recommendations from BSMA and 5<sup>th</sup> Deans Committee of ICAR.

**Distribution Pattern of Courses and Credit (For Research Program)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Research	Credit Load
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14
<b>Credit Load</b>	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

**Distribution Pattern of Courses and Credit (For IDEA Program)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	IDEA	Credit Load
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10 +10	22
<b>Credit Load</b>	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

**Distribution pattern of Courses and Credit M.Sc. (Hort.) Fruit Science**

S.No.	Course Code	Course Title	Credit Hours
<b>Major Courses</b>			
1	FSC501*	Tropical Fruit Production	3(2+1)
2	FSC502*	Sub-Tropical and Temperate Fruit Production	3(2+1)
3	FSC503*	Propagation and Nursery Management of Fruit Crops	3(2+10)
4	FSC504*	Breeding of Fruit Crops	3(2+1)
5	FSC505	Systematics of Fruit Crops	3(2+1)
6	FSC507	Growth and Development of Fruit Crops	3(2+1)
7	FSC508	Nutrition of Fruit Crops	3(2+1)
8	FSC509	Biotechnology of Fruit Crops	3(2+1)
9	FSC511	Export Oriented Fruit Production	3(2+1)
10	FSC512	Climate Change and Fruit Crops	1(1+0)
<b>Minor Courses</b>			
11	FSC506	Canopy Management in Fruit Crops	2(1+1)

12	FSC510	Organic Fruit Culture	3(2+1)
13	FSC513	Minor Fruit Production	3(2+1)
		<b>Common Courses</b>	
14	STA 501	Statistical methods for applied sciences	3(2+1)
15	COM 501	Information technology in agriculture	3(2+1)
		<b>Supporting Courses</b>	
16	PGS 501	Agricultural Research, Research Ethics and Rural Development Programmes	1(1+0)
17	PGS 502	Technical Writing and Communications Skills	1(1+0)
18	PGS 503	Basic Concepts in Laboratory Techniques	1(0+1)
19	PGS 504	Library and Information Services	1(1+0)
20	PGS 505	Intellectual Property and its Management in Agriculture	1(1+0)
		<b>Non Gradial Courses</b>	
21	NGC 511	Disaster Management (Contact hour: 1)	-
22	NGC 512	Constitution of India (Contact hour: 1)	-
23	FSC 591	<b>Master's Seminar</b>	1(0+1)
24	FSC 599	<b>Research/IDEA</b>	30

\*Compulsory among major courses.

#### SEMESTER WISE DISTRIBUTION OF COURSES (RESEARCH/IDEA)

Sl. No.	Course Title	Credit hours
	<b>I Semester</b>	
1.	Major Courses	8
2.	Supporting Courses	
	STA 501 - Statistical Methods for Applied Sciences	3
	COM 501 - Information Technology in Agriculture	3
3.	Common Courses	
	PGS 501 - Agricultural research, research ethics and rural development programmes	1
	PGS 502 - Technical writing and communications skills	1
4.	<b>FSC 599 Research/IDEA</b>	2/-
	<b>Total</b>	<b>18/16</b>
	<b>II Semester</b>	
1.	Major Courses	12
2.	Common Courses	

	PGS 503 - Basic Concepts in Laboratory Techniques	1
	PGS 504 - Library and information services	1
3.	<b>FSC 599 Research/IDEA</b>	6/-
	<b>Total</b>	<b>20/14</b>
<b>III Semester</b>		
1.	Minor courses	6
2.	Common course	
	PGS 505 - Intellectual property and its management in agriculture	1
3.	Disaster Management (1+ 0)	-
4.	Constitution of India (Contact hour 1+ 0)	-
5.	<b>FSC 591 Seminar</b>	1
6.	<b>FSC 599 Research/IDEA</b>	10/10
7.	Value Added Course (3+0) ( <a href="https://annamalaiuniversity.ac.in/studport/value_added_crs.php">https://annamalaiuniversity.ac.in/studport/value_added_crs.php</a> )	-
		<b>18/18</b>
<b>IV Semester</b>		
1.	Minor course	2
2.	<b>FSC 599 Research/IDEA</b>	12 (8+4)/20
		<b>14/22</b>

### Vision

- Increasing the Gross Enrolment Ratio (GER) of Fruit Science programmes.
- Disseminating Horticultural technology to farming community.

### Strategic plan to achieve Vision and Goal

Goal	Programme Objectives	Implementation Plan	Performance Metrics /Timeline
Quality education	To prepare students to generate knowledge on management, production and strategies leading to the development of research philosophies, concepts and methodologies.	Classes are handled by experienced Faculty through class room teaching and practical demonstration.	Periodical class tests, practical assignments, quiz and end term exams are conducted to evaluate the performance of students.

Employability and National standards	To inculcate ability in students to critically analyze and comprehend the knowledge gained from a range of scientific data to approach cultivation problems and reach appropriate solutions in the area of their specialization.	The students are guided to collect literature, identify gaps and propose research problem and conduct research on it.  Timely revision of curriculum according to BSMA and ICAR Deans committee.	The advisory committee supervises and evaluates the students during end of every semester.
Professional ethics	To enhance capability of students to adhere to professional ethics and responsibilities related to horticultural practices.	The curriculum includes field / lab research activities making the students aware of professional norms and resource usage in cautious manner.	The student is continuously monitored by periodical review of work done in field, use of agricultural inputs, recording timely observations and verification of data by advisory committee.
Technology transfer	To facilitate exposure of students to function effectively as an individual and as a member or leader in diverse teams or interdisciplinary environment.	The interdisciplinary research approach is encouraged in making the students work in a diverse environment.	The activity of students in related research labs is evaluated by the major supervisor from time to time.
Lifelong learning	To engage the students in life-long learning and professional development through self- directed studies.	The programme includes compulsory courses along with research, seminars and publication of research work.	The continuous evaluation of courses is done through theory and practical exams while research is evaluated based on research progress in each semester and thesis submission at the end of the degree.

## Accomplishments

The Department of Horticulture is a pioneer institute which offered post graduate Horticultural programme in South India during 1958-59. The Horticulturists of international repute like Dr. S. Krishnamoorthy, Prof. P. Kalyanasundaram and Dr. L. R. Rajasekaran have fuelled the growth of this Department in its early stage and formed the basis of its present state of existence. The Department has been imparting quality education by using updated technologies in the field of education with audio visual aids, method demonstrations and participatory approach and interactive practical experiments. **The Department was awarded with DST - FIST funds for infrastructure development. The syllabus content are updated as per suggestions by stake holders, lead organisations in agriculture and scientific experts. The students are given practical exposure in horticulture industries by hands- on - training and by study tours and industrial trainings.** The students are given counselling by the teachers for their academic improvement and future planning. Special coaching for ICAR JRF, SRF and NET examinations are provided.

The Department of Horticulture has contributed to the horticulture sector by researching upon the need based objectives in the coastal area. The location specific research outcomes are disseminated to the farmers in the coastal Tamil Nadu to propel horticultural crops in the coastal farming system. The department distributes certified seeds of "Annamalai brinjal" to the farmers. **The standardized package of practices developed for rice-fallow vegetable production, common tropical vegetables and introduction of nutritionally rich/economically feasible less known crops has been carried out. For the industrial sector stake holders, the Department is providing its research expertise by conducting product evaluation research.**

The Department is training the farmers in new technologies that are upcoming in the field of horticulture and creating awareness among the farmers about the new crops, varieties and techniques. Diagnostic services to the farmers are provided for various production problems. Demonstration of technologies through Rural Horticultural Work Experience is done every year. Periodically workshops and seminars are conducted for the benefit of industrial stake holders, scholars and scientists.

Category	Upto 2016	Last five year period (2017-2022)
Number of Publications (Journal articles)	724	338
Number of Books	13	20
Number of Book chapters	45	232
Number of Projects Handled	21	26
Grant mobilization ( <b>Rupees in lakhs</b> )	69.27	49.43
Number of Ph.D.'s produced	43	8
Number of PG's produced	328	180
Number of Seminars/Conferences/Workshops/Webinars Organized	6	25

Number of Awards/recognition received by the Faculty	113	51
Countries visited by the Faculty (Professional Visit)	9	9

#### 6.4.2. Faculty Strength

Presently 35 staff members are available in the Department specialized in different aspects of Horticulture

S. No.	Sanctioned posts	Sanctioned	Filled	Vacant	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1	Professor*	6	6	-	1
2	Associate Professor*	5	5	-	1
3	Assistant Professor*	24	24	-	3
	<b>Total</b>	<b>35</b>	<b>35</b>	<b>-</b>	<b>5</b>

\* Engaged in UG, PG and Ph.D. programmes

#### Number of Faculty designated for Fruit Science

Professor\* - 02

Associate Professor\* - 01

Assistant Professor\* - 05

\*Commonly engaged for other courses also

#### Faculty engaged for common courses from the other Departments

S. No	Cadre	Faculty in place (as on August, 2022)	Vacancy position	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1.	Professor	1	-	-
2.	Associate Professor	3	-	-
3.	Assistant Professor	5	-	-

**Credentials of the Faculty**

Name & Designation	Total Service (Years)	Field of Interest / Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others
Dr. K. Haripriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
Dr. Arumugam Shakila Professor	30	Fruit Science	46	3	115	4	6
Dr. A. Anburani Professor	28	Vegetable Science	28	3	61	14	10
Dr. P. Karuppaiah, Professor	28	Floriculture and Landscaping	26	7	110	15	8
Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11
Dr.S.Rameshkumar Professor	23	Fruit Science	14	6	52	20	16
Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
Dr. S.	19	Vegetable	9	-	86	32	25

Kamalakaran Assoc. Professor		Science					
Dr. R. Sudhagar Associate professor	20	Floriculture and Landscaping	12	1	71	40	22
Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	37	22	9
Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	33	10	23
Dr. C. Muruganandam Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	10	1	41	17	16
Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	6	-	54	18	-
Dr. R. Sendhilnathan, Assistant Professor	20	Floriculture and Landscaping	10	-	39	13	18
Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28

Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	37	11	23
Dr. K. Sha Assistant Professor	20	Vegetable Science	9	-	32	-	24
Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	9	-	16	13	11
Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10
Dr. T. Uma Maheswari Assistant Professor	19	Fruit Science	8	1	89	42	25
Dr. D. Dhanasekaran Assistant Professor	19	Floriculture and Landscaping	8	1	47	39	20
Dr. A. R. Lenin Assistant Professor	18	Floriculture and Landscaping	5	-	14	4	6
Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22
Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
Mr.S.Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7
Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic	5	-	26	13	12

		crops					
Dr. G.Samlind Sujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	4	-	31	6	5
Dr. S. Sivasankar Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	20	4

#### Publication details (2017-2022)

S.No.	Title	Authors	Journal	Year
1.	Studies on the effect of media on sucker production of banana cv. Poovan	Esakkimuthu,D. and Arumugam Shakila	The Asian Journal of Horticulture.12 (1):85-88.	2017
2.	Effect of media on growth parameters of banana cv. Poovan	Esakkimuthu,D. and Arumugam Shakila	The Asian Journal of Horticulture. 12 (1):133-135.	2017
3.	Effect of pruning intensities on yield of guava ( <i>Psidium guajava</i> ) cv. Lucknow 49.	Aswathy Suresh and Arumugam Shakila	The Asian Journal of Horticulture. 12(2): 202-205.	2017
4.	Influence of time and intensity of pruning on quality of guava ( <i>Psidium guajava</i> ) cv. Lucknow 49	Aswathy Suresh and Arumugam Shakila	The Asian Journal of Horticulture. 12(2):189-192.	2017
5.	Studies on effect of different seasons on softwood grafting in aonla ( <i>Phyllanthus emblica</i> L.).	Barathkumar,T.R	European J.Biotech. and Biosci. 5(4):83-84.	2017

6.	Study on performance of Different genotypes in Jack fruit ( <i>Artocarpus heterophyllus</i> Lam.)	Muruganandam,C. S.R. Rajamohan and S.Sivasankar	Intl.J. Curr. Res. Life Sci. 6: 607	2017
7.	Evaluation of sapota cultivars for yield characters	Ramadoss, N. and E. Arivazhagan	International J. Agric. Sci. 13(1): 9- 13.	2017
8.	Influence of bioregulators on quality of guava ( <i>Psidium guajava</i> ) cv. Arka Mridula and Arka Amulya	Jayalakshmi, C. and Arumugam Shakila	International Journal of Chemical Studies. 6(1):45-47.	2018
9.	. Influence of bioregulators on yield of guava ( <i>Psidium guajava</i> ) cv. Arka Mridula and Arka Amulya	Jayalakshmi, C. and Arumugam Shakila	International Journal of Chemical Studies. 6(5): 718- 722.	2018
10.	Effect of edible coating to extend the shelf life of guava var. L-49 stored at room temperature.	Narmadhadevi. A and S. Venkatesan,	Pl. Archives. 18: 303 -307.	2018
11.	Influence of SOP on growth, yield and quality of characters of grapes cv. muscat	P.Suresh and M.Rajkumar	IJRAR. 5(4):141-149.	2018
12.	Effect of Potassium on Quality characters of grapes cv. Muscat.	P.Suresh and M. Rajkumar.	JETIR. 5(9):474-481.	2018
13.	Influence of potassium on growth parameters and yield of grapes cv. Muscat.	M. Rajkumar.	JETI. 5(9):294-302.	2018
14.	Effect of growth regulators and organic substances on rooting of Grapes ( <i>Vitis vinifera</i> L.) Cv. Muscat.	Sarmista Chakraborty and M. Rajkumar, M.	Asian Journal of Science and Technology. 9(8):8418-8421.	2018
15.	Effect of integrated nutrient management on growth characters in sapota.	Sheik RoohiTasleema, Kamalakaran, S., Rajeswari, R. and Sudhagar, R.	Plant Archives. 19 (1):1086-1088.	2019
16.	Influence of plant growth regulators on growth parameters jack fruit ( <i>Artocarpus heterophyllus</i> Lam.)	Muruganandam,C. S.R. Rajamohan and S.Sivasankar	J. of Pharmacognosy and phytochemistry. 2: 20-21	2019
17.	Leaf nutrient content in sapota as influenced by integrated nutrient management.	Kamalakaran, S., Sheik RoohiTasleema, Rajeswari, R., Sudhagar, S. and Kumar, S.	Journal of Pharmacognosy and Phytochemistry. 8(3):2340-2341.	2019

18.	Effect of plant growth regulators on rooting of hardwood cuttings in guava ( <i>Psidium guajava</i> L.) cv. Lucknow-49.	M.Gayathiri and S.Vijayaraj.	International Journal of Advance and Innovative Research, Volume 6(2): 35-36.	2019
19.	Studies on the influence of potassium on growth, yield and quality of hill banana var. Sirumalai	Sathappan. CT., K. Sivanesh and D. Dhanasekaran	Plant Archives. 19(supplement 2): 1603-1605.	2019
20.	Studies on influence of different seed treatments on dormancy breaking in aonla ( <i>Phyllanthus emblica</i> L.)	Barathkumar,T.R	J.Pharmacognosy and Phytochemistry. 131-133.	2019
21.	Influence of nutrient management through bio-organic manures on fruit yield and its attributes of acid lime ( <i>Citrus aurantifolia</i> Swingle)	Barathkumar,T.R., G.Pradeepkumar, R.Sendhlnathan, R.Sureshkumar, M.Rajkumar, C.Muruganandan and S.Mullaimaran	J. Emerging Tech. and Innov. Res. 6(3):246-252.	2019
22.	Influence of nutrient management through bio-organic manures on bio-chemical attributes of acid lime ( <i>Citrus aurantifolia</i> swingle)	Barathkumar,T.R .G.Pradeepkumar, R.Sendhlnathan, R.Sureshkumar, M.Rajkumar, C.Muruganandam and S.Mullaimaran.	Plant Archives. 19(2): 3763-3766.	2019
23.	. Variability and correlation analysis in sapota ( <i>Manilchara sapota</i> ) under coastal ecosystem	Arivazhagan, E and R. Kandasamy	Plant archives. 19(1): 652-654.	2019
24.	Effect of seed treatments on germination of growth and vigour of papaya (carica papaya) cv.red lady.	Thirupathi.M and S.Mullaimaran	International Journal of chemical studies. 8(4):3528-3531.	2020
25.	Effect of nutrient management through bio-organic manures on fruit setting, fruit drop and fruit retention of acid lime ( <i>Citrus aurantifolia</i> Swingle).	BarathkumarT.R, G.Pradeepkumar, R.Sureshkumar and C.Muruganandam.	Plant Archives. 20(1): 1570-1572.	2020
26.	Anti-cancer activity of red banana wine against colon cancer cells (HCT-15).	T. Uma Maheswari, M.Karuppaiya, S.Subhagar, R.Rahul and P. Sivasakthivelan.	Research Journal of Agricultural Sciences.11(2):420-423.	2020

27.	Organoleptic and nutritional quality evaluation of jackfruit bulbs preserved in sugar syrup.	T.Uma Maheswari, , Vidhu Valsan and J.Padmanaban.	Journal of Postharvest Technology.8(2):18-21	2020
28.	Value addition of jackfruit through production of chips.	Uma Maheswari, T. and Vidhu Valsan.	Science Archives.1(2):50-52	2020
29.	Preparation, Processing and Optimization of Guava Ready to Serve (RTS) Health Drink using Fenugreek Seed Flour - A novel formulation.	T. Uma Maheswari M. Karuppaiya, J. Jaya Kowsalya and P. Sivasakthivelan.	Research Journal of Agricultural Sciences.11(3):530-535	2020
30.	Response of plant growth regulators on rooting of hardwood cuttings in guava, ( <i>Psidium guajava</i> L.) cv.Lucknow-49	M.Gayathiri and S. Vijayaraj	Plant archives. 20 (1): 3011-3013	2020
31.	Effect of plant growth regulators on seed germination and seedling vigour in Jack ( <i>Artocarpus heterophyllus</i> ).	S.Madhavan, K.Sha, S.Kumar, M.Gayathiri and S.Elakkuvan.	Alochana chakra journal. 9 (12): 146-152	2020
32.	Integrated use of organic and inorganic fertilizers with bio - inoculants on physiological characteristics of acid lime ( <i>citrus aurantifolia</i> Swingle).	Barathkumar T.R., G.Pradeepkumar, R.Sureshkumar and C.Muruganandam	Plant Archives. 20(1):1769-1772.	2020
33.	Influence of plant growth regulators and organic substances on rooting of guava cutting cv.	P. Nandhinidevi, M. Rajkumar, R. Sureshkumar, R. Sendhilnathan and T. Uma Maheswari.	Plant Archives. 20(2): 6.	2020
34.	Enhancement of agronomic traits and yield of rice var. ADT 43 grown in typical ustifluent soil through silicon fertilization.	Arthi, V., M. V. Sriramachandrasekaran, R. Manivannan and Arumugam Shakila.	International Journal of Chemical Studies. 6(5): 718-722.	2021
35.	Effect of IBA on rooting of grapes cuttings ( <i>Vitis vinifera</i> ).	S.Madhavan, S.Sivasankar, S.Elakkuvan and M.Gayathiri.	International journal of botany studies. 6(5): 288-289.	2021

36.	Processing and quality evaluation of banana fig.	T.Uma Maheswari, N.Suganth and J.Padmanaban.	Research Journal of Agricultural Sciences.12(1):294-297	2021
37.	Effect of auxins in rooting of cuttings in pear ( <i>Pyrus communis</i> L.).	S.Sinduja and T.Uma Maheswari.	Research Journal of Agricultural Sciences12(4): 1237-1239	2021
38.	Study on development and various physiological properties of banana flour.	T.Uma Maheswari and N.Suganth.	Research Journal of Agricultural Sciences.12(3): 749-752	2021
39.	Effect of auxins on survival percentage of cuttings in pear ( <i>Pyrus communis</i> L.).	S.Sinduja and T.Uma Maheswari and S.Kamalakaran.	Research Journal of Agricultural Sciences.12(5):1756-1759	2021
40.	Bio-regulators and its applications in enhancing flowering and fruit characters of Pomegranate ( <i>Punica granatum</i> L. var Baghwa)	Sam Ruban, J.Ilakiya, T.Dhivya Shree,	Plant archives. 21(2):1742-1746.	2021
41.	Influence of Pre-sowing treatments on Germination, Growth and Vigour of Mango.	V.Gopi and Sam Ruban J,	International Journal of Current Microbiology and Applied Sciences. 10(02):2086-2090.	2021
42.	Effect of Foliar Application of Potassium Nitrate and Ethephon on Yield Characters of Papaya ( <i>Carica papaya</i> L.) cv. Red Lady	S. Elakkuvan, G. Samlind Sujin, S. Madhavan and R. S. Sugavanam	Research Journal of Agricultural Sciences. 12(4): 1462-1466.	2021
43.	Influence of plant growth regulators on rooting of hardwood cuttings in guava ( <i>Psidium guajava</i> . L) cv. Lucknow-49	M.Gayathiri, S.Madhavan and S.Vijayaraj	International Journal of emerging technologies and innovative research. 9(1): 162-165.	2022
44.	Studies on development, quality evaluation and storage stability of banana jam ( <i>Musa spp.</i> ).	T.Uma Maheswari and N.Suganth and R.Sendhilnathan	Research Journal of Agricultural Sciences.13(3):902-905.	2022

#### Workshop/Symposium/Webinars organized from 2017-2022

S.No	Title of the Programme	Name of the Faculty	Date
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1.	Workshop on Roof Garden	Dr. R. Sudhagar Dr. S. Venkatesan Dr. T. Uma Maheswari	2 <sup>nd</sup> & 3 <sup>rd</sup> February 2018
2.	National workshop on BHUVAN Geo portal for Precision farming	Dr. S. Venkatesan Dr. R. Sudhagar	8 <sup>th</sup> January 2019
3.	National symposium on Horticulture in the Vanguard of climate change and urban environment	Dr. R. Ramesh Kumar Dr. D. Dhanasekaran Dr. CT. Sathappan	7 <sup>th</sup> & 8 <sup>th</sup> February 2019
4.	Webinar on Recent advances in the improvement of cucurbitaceous vegetables and Bhendi	Dr. S. Kamalakannan	11 <sup>th</sup> & 16 <sup>th</sup> July 2020
5	Webinar on Emerging trends in temperate fruit production	Dr. CT. Sathappan	12 <sup>th</sup> & 13 <sup>th</sup> July 2020
6	Webinar on Strategies to combat recent challenges in Floriculture Industry	Dr. S. Rameshkumar Dr. D. Dhanasekaran	18 <sup>th</sup> July 2020
7	Webinar on Landscape tools for smart societies	Dr. S. Rameshkumar Dr. D. Dhanasekaran	19 <sup>th</sup> July 2020
8	Webinar on New normal in floriculture	Dr. S. Rameshkumar Dr. D. Dhanasekaran	23 <sup>rd</sup> July 2020
9	Webinar on Recent advances in strawberry production	Dr. CT. Sathappan Dr. D. Dhanasekaran	24 <sup>th</sup> July 2020
10	Webinar on Research Advances in kiwi production	Dr. CT. Sathappan Dr. D. Dhanasekaran	31 <sup>st</sup> July 2020
11	Webinar on Health foods from fruits and vegetables – An Imminent need	Dr. CT. Sathappan Dr. D. Dhanasekaran	1 <sup>st</sup> August 2020
12	Webinar on Banana - Fruit for Nutritional and livelihood security	Dr. R. Sendhilnathan Dr. S. Sivasankar	2 <sup>nd</sup> August 2020
13	Webinar on Annona – The super fruit of 21 <sup>st</sup> century	Dr. R. Kandasamy	3 <sup>rd</sup> August 2020

		Dr. E. Arivazhagan	
14	Webinar on Nutraceuticals from flower crops	Dr. S. Rameshkumar Dr. N. Dhamodharan	4 <sup>th</sup> August 2020
15	Webinar on Flower seed production - challenges and opportunities	Dr. S. Rameshkumar Dr. D. Dhanasekaran Dr. CT. Sathappan	5 <sup>th</sup> August 2020
16	International workshop on Naunces in Floriculture industry ( <a href="#">Webinar 1.pdf</a> )	Dr. S. Sivasankar	6 <sup>th</sup> September 2021
17	International workshop on Naunces in landscape industry ( <a href="#">Webinar2.pdf</a> )	Dr. S. Rameshkumar Dr. CT. Sathappan Dr. D. Dhanasekaran	13 <sup>th</sup> September 2021
18	International workshop on Naunces in Post harvest horticulture ( <a href="#">Webinar 3.pdf</a> )	Dr. CT. Sathappan Dr. J. Padmanaban Dr. D. Dhanasekaran	20 <sup>th</sup> September 2021
19	National work shop - Emerging trends in production and processing of guava ( <a href="#">Webinar 4.pdf</a> )	Dr. S. Kamalakannan Dr. S. Kumar	25 <sup>th</sup> September 2021
20	International workshop - Opportunities and challenges in horticultural technologies ( <a href="#">Webinar 5.pdf</a> )	Dr. A. Anburani Dr. C. Muruganandam Mr. S. Elakkuvan Dr. R. Rajeswari	30 <sup>th</sup> September 2021
21	International Virtual conference - Startups in Horticulture Industry (SUHI - 21) ( <a href="#">Webinar 6.pdf</a> )	Dr.R.Sendhinathan Dr. M. Rajkumar Dr. P. Madhana Kumari	20 <sup>th</sup> October 2021
22	International Virtual Workshop - Scope and opportunities in plantation crops (SOPC - 21) ( <a href="#">Webinar 7.pdf</a> )	Dr.R.Kandasamy Dr. E. Arivazhagan Dr. A. R. Lenin	27 <sup>th</sup> October 2021
23	International Virtual conference - Innovative	Dr.R.Suresh Kumar	29 <sup>th</sup> October

	trends in horticulture production (ITHP - 21) ( <a href="#">Webinar 8.pdf</a> )	Dr. T.R. Barathkumar Dr. T. Uma Maheswari	2021
24	National Virtual workshop - Procurement, processing and product promotion in horticulture crops ( <a href="#">Webinar 9.pdf</a> )	Dr.R.Sudhagar Dr. S. Venkatesan Dr. M. Gayathiri	16 <sup>th</sup> November 2021
25	International Virtual conference - Healthy horticulture for wealthy environment (file:///H:/webinar/Webinar%2010.pdf)	Dr.S.Kamalakkanan Dr. S. Kumar Dr. R. Rajeswari	18 <sup>th</sup> November 2021

#### Awards/Recognition's from 2017 to 2022

S. No	Name of the faculty	Awards
1.	Dr. K. Haripriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	1. Subject matter Specialist in selection committee, ICAR-National Research Centre for Banana Trichirapalli. 09.04.2021 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 22.06.2021 3. External expert member, expert committee for re-structuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021 4. Board of studies in Agriculture - (GRI), Gandhigram Rural Institute, Gandhigram, Dindigul. 2021-2024 5. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019
3	Dr. A. Anburani	1.APSI Honours award by Academy in Plant Sciences, India. 2. Best oral presentation award at international symposia, Hyderabad.
4	Dr. S. Anuja	1. Received best paper award, Annamalai University. 2. Received certificate of achievement award.
5	Dr. S. Rameshkumar	1. Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu

6	Dr. J. Samruban	1. 1 <sup>st</sup> poster presentation award in 9 <sup>th</sup> Indian Horticulture congress 2021, Kanpur
7	Dr.R.Kandasamy	1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry
8	Dr. CT. Sathappan	1. Fellow of National Gladiolus Trust.
9	Dr. S. Venkatesan	<p>1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019</p> <p>2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019.</p> <p>3. Best Horticulturalist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India.</p> <p>At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>4. Best oral presentation Award- 3<sup>rd</sup> National Conference on Promoting &amp; Reinvigorating Agri - Horti, Technological Innovations (24<sup>th</sup>&amp; 25<sup>th</sup> December, 2019) held at Danbad Jharkhand, India.</p> <p>5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment (VOICE) &amp; Pondicherry Institute of Agricultural Sciences ( PIAS ) in Association with Murray State University, USA. Supported by Centre for Environment &amp; Agricultural Development (CEAD)- 2020</p> <p>6. Excellence in Research award-3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>8. Best Horticulturist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun,</p>

		<p>Uttarakhand, India.</p> <p>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</p> <p>10. Best Poster Award- Two days DST PURSE - II Sponsored National conference on “Transforming Agricultural Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 &amp; 22, 2022.</p>
10	Dr. T. R. Barath Kumar	<p>1. PRAGATI, Organizing Committee, Dhanbad, Jharkhand, India. 2017</p> <p>2. TECHSEAR, Organizing Committee, ICAR-IIRR-Rajendranagar, Hyderabad, India. 2017</p> <p>3. Endling conferences society, ICFA-2018, Pune, Maharashtra, India. 2018</p> <p>4. NSPOFED, Organizing Committee, School of agriculture and animal sciences, Gandhigram rural institute-Deemed to be University, Gandhigram, Dindigul, Tamil Nadu, India. 2019.</p> <p>5. Astha foundation (Meerut,U.P) &amp; Organizing Committee GRISAAS, ICAR, NAARM, Rajendranagar, Hyderabad, Telangana, India. 2019.</p> <p>6. ICEACBS, Organizing Committee, VOICE, PIAS, Murray State University (USA) and CEAD Puducherry, India. 2020.</p> <p>7. “3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)” Ranchi, Jharkhand. 2022</p> <p>8. “3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)” Ranchi, Jharkhand. 2022</p>
11	Dr. R. Sendhilnathan	<p>1.Awarded Best poster presentation. in 21<sup>st</sup>century (NSPOFED -in 21<sup>st</sup>century. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of agriculture and animal sciences, Gandhigram Rural Institute, Dindigul.</p> <p>2.Excellence in Research award for outstanding</p>

		<p>contribution in the field of “Floriculture and landscape gardening” at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019 at ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India.</b></p> <p>3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.</p>
12	Dr. S. Madhavan	1. Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources
13	Dr. P.Madhana Kumari	<p>1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry</p> <p>2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.</p>
14	Dr. T. Uma Maheswari	<p>1. Best oral presentation award- AIASA, 2020</p> <p>2. Best women scientist award- ICEACBS, Puducherry, 2020</p>
15	Dr. D. Dhanasekarn	<p>1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018)</p> <p>2. Best Oral Presentation IIInd Prize, NABS Conference, Pondicherry (2019)</p> <p>3. Young Scientist Award, National Gladiolus Trust (2020)</p> <p>4. Best Oral Presentation, IIIrd Prize, First NABS (2021)</p> <p>5. Best Oral Presentation IIInd Prize, 7th National Youth Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA, TNAU &amp; ICAR, Coimbatore, 24-25 March, 2022</p>
16	Dr. S. Kumar	<p>1. Best oral presentation award- 3<sup>rd</sup> ICFAI, Jharkhand.</p> <p>2. Excellence in teaching award- ICEACBS, Puducherry, 2020</p>
17	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
18	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry

19	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy – 2019. Thangavur. 2. Best faculty award in horticulture – CNRTSPA 2019-William research award, Kanyakumari
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#### Abroad Visits

S. No	Name of the Faculty	Country visited & Year	Purpose of visit
1.	Dr. R. Suresh Kumar	Thailand (2018)	International Conference of Food Agriculture and Innovation (ICFAI)
2.	Dr. J. Padmanaban	Switzerland (2019) Italy (2019) France (2019)	Academic collaboration with Tamil education Development council (TEDC)

#### Details of Project (2017-2022)

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Type	Funding Agency
1.	2019-2021	Dr. P. Karuppaiah (PI)	Doubling the farmers income through protected cultivation technology - An economic evaluation study in Tamil Nadu.	8.0	Govt.	Indian Council of Social Science Research
2.	2017-2018	Dr. S. Rameshkumar (PI)	As PI : Evaluation of Picoxystrobin 22.52% w/w SC against Powdery mildew and Downy mildew of Grapes	1.50	Non-Govt.	M/S. Bharat Rasayan
3.	2017-2019	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	4.42	Non-Govt.	M/S. T Stanes & Co
4.	2018-2020	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Effect of Active ORG on the nutrient availability, growth, metabolism and yield of <i>Lycopersicon</i>	1.36	Non-Govt.	M/S. T Stanes & Co

			<i>esculentum</i> Mill.			
5.	2021-2022	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Evaluation of bio efficacy of Dr.ROOT on the yield of Onion –PI	1.56	Non-Govt	M/S. T Stanes & Co
6.	2021-2022	Dr. S. Rameshkumar (PI)	As PI : Technology Dissemination Project for “Tree transplantation in Thenkasi to Thirunelvel Highway Extension Site”	1.18	Non-Govt	P & C Projects (P) Ltd.
7.	2018-2019	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Bio – efficacy of Nano nutrients on growth and yield of capsicum	3.88	Co-op. Govt.	IFFCO, Chennai
8.	2020-2021	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Effect of Nano DAP on vegetable cowpea	4.88	Co-op. Govt.	IFFCO, Chennai
9.	2019-20	Dr. M. Rajkumar (PI) Dr. J. Sam Ruban (Co-PI)	Evaluation of bio-efficacy of crop tiger on Banana	2.50	Private	PEPTECH, Bioscience limited, New Delhi
10.	2022 onwards	<b>Dr. R. Kandasamy (PI), Dr. E. Arivazhagan (Co-PI) and Dr. C. Kathirvelu (Co-PI)</b>	Efficacy of Bio-stimulants, Zymgold Liquid, Armurox, Equilibrium, Terrasorb Complex and Zym gold Plus Granules with respect to yield, yield attributing factors and crop safety on tomato crop	8.82	Non-Govt	Godrej Agrovet Ltd., Mumbai
11	2017-2019	Dr. RM. Kathiresan and Dr. CT. Sathappan	As Associating scientist in “Annamalai rice+fish+poultry farming system for improving nutrition	120.00	Research and Extension	IKP-KP & USAID

			and livelihoods of small farmers in Nepal			
12.	2018-2021	Dr.RM.Kathiresan and CT. Sathappan (Associating Scientist)	As an Associating Scientist In “Agronomic Integration of Technologies for Productivity Management and Optimal Water Use In Wetlands of Cauvery River Delta”	209.00	Govt.	DST- Mission mode
13.	2022-24	Dr. C. Kathirvelu (Principal investigator) Dr. S. Venkatesan and Dr. K. Suseendran (Co Principal investigator)	Bio- efficacy and Phytotoxicity and Compatibility of PIPL 100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crop on various growth parameters	5.52	<b>Non Govt</b>	M/S Parijat Industries Limited, New Delhi.
14.	2018-2020	<b>Dr.P.Sudhagar(PI)</b> <b>Dr.R.Sureshkumar(Co-PI)</b>	Efficacy of LAATU premium(Gibberellic acid0.001%)as plant growth regulator and yield of Tomato(Co-PI)	3.00	Pvt.	Sumitomo ChemicalsPvt.Ltd,New Delhi
15.	01.07.2018 to 30.06.2020	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy and Phytotoxicity of homobrassinolide 0.04% EC in Paddy, Groundnut and Tomato	9.00	Non Govt.	m/s Godrej Agrovet Ltd, Mumbai.
16.	July 2018 to December 2019	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio-efficacy of new herbicide clethodim 12% EC for controlling grassy weeds in cotton,	7.50	Non Govt.	Deccan fine (Chemicals) India Pvt. Ltd. Hyderabad, Telengana

			onion and soyabean and its phytotoxicity effect on succeeding crops			
17.	December 2018 to December 2021	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy toxicity evaluation of GlutosinateAmmonium 13.5% against weed flora in grapes and its effect on succeeding crops .	13.33	Non Govt.	M/S UPL.Pvt.ltd, Mumbai.
18.	January 2020 to June 2022	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio - efficacy and phytotoxicity of Flumioxazin 50 % SC against major weeds in tea and non- cropped area and its effect on succeeding crops for two seasons	5.46	Non Govt.	M/S. Sumitomo chemical India Ltd. Mumbai NON GOVT
19.	December 2019 to May 2020	Dr.M.Rajkumar - PI Dr. J. Samruban (Co-PI)	Evaluation of Bio - efficacy of growth enhance formulations and their effect on Onion, Rice and Chilli	2.27	Non Govt.	Agri solutions Pvt.Ltd. Nashik
20.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of studies on Bio-Efficacy of evaluation of the bio-stimulant- Gaxy on cotton and grape and opteine on soybean and ground nut and pilatus on tomato.	10.50	Non Govt.	M/S UPL.Pvt.Ltd. Mumbai.
21.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy of evaluation of Bio-Stimulant macarena on soybean, tomato,	10.50	Non Govt.	M/S.UPL.Pvt, Mumbai.

			cotton and Brique on chilli and tomato.			
22.	February 2022 to February 2024	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy and phytotoxicity evaluation of SIAPTION 101 on growth, yield and quality of grapes for 2 season.	2.275	Non Govt.	M/s Jivagro Ltd.
23.	2018 - 2020	Prof.Rm.Kathiresan (PI) Dr.J.Padmanaban (Assoc. staff)	Agronomic Integration of Technologies for productivity management & Optimal Water Use in Wetland of Cauvery 35River Delta	67.00	Govt.	DST, New Delhi
24.	2021-2022	Dr.J.Padmanaban (PI) Dr.S.Manimaran (Co-PI)	Evaluation of Bio-stimulants: Top-up Gold (Granules) / Enhancer (Liquid) in Paddy	3.75	Non Govt.	Plantgene Biological Pvt. Ltd., Trichy
25.	2021-2024	Dr.S.Kanagarajan (PI) Dr.J.Padmanaban(Co-PI)	Testing of new insecticide: Evicent 45 WG against Thrips and capsule borer in Cardamom	10.00	Non Govt.	Syngenta India Ltd., CBE
26.	October 2021 to September 2024	Dr. T. Uma Maheswari (Co-PI) Dr.R.Kanagarajan (PI)	Evaluation project: Testing of new insecticide SPID + ACET 54 WG against Tea pests	5.00	Non Govt.	M/S SYNGENTA India Ltd., Coimbatore
27.	February 2022 to July 2024	Dr. T. Uma Maheswari-PI Dr.R.Kanagarajan (Co-PI)	Effective utilization of agricultural green waste in biosolarization as an innovative approach for ecofriendly cultivation of tomato ( <i>Solanumlycopersicu</i>	10.13	Govt.	RUSA 2.0-R&I

			m l)			
28.	2022-24	Dr. S.Babu (PI) Dr. D.Dhanasekaran (Co-PI)	Bioefficacy trail of Glyphosate 41 % SL IPA Salt as a post emergence herbicide against grassy weeds, broad leaf weeds and sedges existing in the trail lot of tomato and mango orchard	9.60	Trail	Crystal Crop Protection Ltd., New Delhi
29.	2022-24	Dr. C.Kathirvelu (PI) Dr. D.Dhanasekaran (Co-PI)	Climate Resilience on Butterfly fauna of coastal areas of Tamilnadu and establishing Butterfly garden at Annamalai university Gardens	5.06	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
30.	2022-24	Dr. D.Dhanasekaran (PI) Dr. CT.Sathappan, Dr. M.Govindarajan and Dr. G.Senthilkumar	Phyto-remediation of Indoor pollution through ornamental plants with various horticultural modules for improving health and urban environment.	5.06	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
<b>Total Amount</b>				<b>49.43 (Rupees in lakhs)</b>		

#### 6.4.3. Technical and Supporting staff

The following technical and supporting staff members in the Department are helping in academic, Research and administrative activities.

Sl.No.	Sanctioned posts	Staff in place	Responsibility
1	Secretarial staff (ASO-1, SO-2, Helper-2)	5	Assisting administrative work Maintenance of office files and official records
2	Technical staff (Orchard manager-1, DGS-1, and DFS-2)	4	Assisting in orchard operations, field trials, farm record maintenance, sale proceeds, supervision of labourers, execution of purchase and settlement of bills and recording of trial

			observations. DTP works, data processing and documentation
3	Farm workers /Gardeners	22	Layout of field trials and farm operations.

#### 6.4.4. Classrooms and Laboratories

#### I. PARTICULARS OF INSTRUCTIONAL UNITS IN THE DEPARTMENT

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)	SEATING CAPACITY
1.	HOD Room	320 sq.ft	1
2.	Office Room	240 sq.ft	4
3.	PG Class Room 1	320 sq.ft	15
4.	PG Class Room 2	640 sq.ft	40
5.	PG Class Room 3	720 sq.ft	40
6.	PG Class Room 4	420 sq.ft	15
7.	Ph.D Class Room 1	640 sq.ft	15
8.	Ph.D Class Room 2	320 sq.ft	15
9.	Laboratory (PG/Ph.D)	640 sq.ft	15
10.	Staff Room 1	320 sq.ft	4
11.	Staff Room 2	400 sq.ft	5
12.	Staff Room 3	640 sq.ft	12
13.	Staff Room 4	100 sq.ft	5
14.	Staff Room 5	120 sq.ft	5

15.	Staff Room 6	100 sq.ft	1
16.	Staff Room 7	320 sq.ft	1
17.	Staff Room 8	320 sq.ft	1
18.	Postharvest lab (UG) (Distillation unit, Dehydrator, Pulper, Sealer and Mixer machine)	1333 sq.ft	40

**List of equipments available**

<b>S.No</b>	<b>Name of the Equipment</b>	<b>Equipment available in the department</b>
1.	Weighing balance (0.001)	1
2.	Weighing balance (0.01)	3
3.	Weighing balance (200 g)	2
4.	Weighing balance 60 kg (30 kg)	1
5.	Distillation unit	2
6.	pH meter	4
7.	EC meter	2
8.	Hand refractometer	5
9.	Digital vernier calliper	2
10.	Deep freezer vertical (-20°C, 275 l)	1
11.	Thermocycler unit	1
12.	Gel documentation unit	1
13.	Stereo zoom microscope	1
14.	Compound microscope	4

15.	Hot air oven	1
16.	Dehydrator	2
17.	Magnetic stirrer (5 l)	3
18.	Micro wave oven (25 l)	2
19.	Refrigerator (320 l)	3
20.	Water bath with shaker (20 l)	1
21.	UV spectrophotometer	1
22.	Refrigerated centrifuge	1
23.	Vertical gel unit (dual unit max)	1
24.	Horizontal gel unit (medium)	1
25.	Power pack (small)	1
26.	Micropipette (10 $\mu^{-1}$ , 100 $\mu^{-1}$ , 200 $\mu^{-1}$ , 1000 $\mu^{-1}$ )	1
27.	Laminar air flow chamber	1
28.	Digital thermometer and hygrometer	5
29.	Autoclave (vertical) 250 l	1
30.	Nitrogen distillation unit	1
31.	Air conditioner (2 tonnes)	4
32.	Online UPS (10 volts)	1
33.	Digital camera (14 mph)	1
34.	Vortex	1
35.	Hot plate	2
36.	Soxhlet Apparatus	2

## II. PARTICULARS OF INSTRUCTIONAL UNITS IN ORCHARD

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Orchard	5.66 hectare
2	Shade house	1650 sq.ft
3	Nursery	3634 sq.ft
4	UG practical class Room-III	1196 sq.ft
5	UG practical class Room-IV	1196 sq.ft
6	Class Room 1 (UG)	560 sq.ft
7	Field lab (PG/Ph.D)	380 sq.ft
8	Display / UG class room-2	380 sq.ft
9	Farm manager office	200 sq.ft
10	Tractor Shed	380 sq.ft
11	Store room	936 sq.ft
12	Implement shed	216 sq.ft
13	Threshing yard	900 sq.ft
14	Seed processing and storage unit	125 sq.ft
15	Farm fencing	1.05 km

### III. PARTICULARS OF INSTRUCTIONAL UNITS IN FLORICULTURE AND MEDICINAL PLANTS AREA

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Floriculture and medicinal plants Unit	1.41 hectare
2	Vermicompost shed	450 sq.ft
3	NVP house 1	418 sq.ft
4	NVP house 2	418 sq.ft
5	NVP house 3	1071 sq.ft
6	Shade house	150 sq.ft
7	Mist chamber	216 sq.ft
8	Poly house	2640 sq.ft

#### 6.4.5. Conduct of Practicals and Hands-on-Training

Hands- on -training is given to students during classes:

- Varietal identification exposure
- Method demonstration on various aspects of propagation, training and pruning of perennial fruit crops.
- Organic amendments usage in raising nurseries.
- Canopy management of senile orchards.
- High density planting in guava.
- Handling and packaging techniques of fruits.
- Value addition of fruits.

Field visits are arranged for the students to

- Pulping industries
- Processing industries
- Central industries
- Progressive farmer field
- Regional research stations

#### 6.4.6. Supervision of students in PG programme

Each post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise of a Major

Adviser (Chairman) and two members. Of the two members, one will be from the same Department and the other in the related field from the other Departments of the Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The Chairman in consultation with the Head of the Department will nominate the other two members. The duties of advisory committee are as follows:

1. Guiding students in drawing the outline of research work
2. Guidance throughout the programme of study of the students.
3. Evaluation of research and seminar credits.
4. Correction and finalization of thesis draft.
5. Conduct of qualifying and final Viva-Voce examination.
6. The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
7. Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.

#### **Students Teacher Ratio**

<b>S.No</b>	<b>Number of recognized Teacher for PG guidance</b>	<b>Academic year</b>	<b>Intake of students</b>	<b>Students Teacher Ratio</b>
1.	35	2017-18	10	1:3.5
2.	35	2018-19	10	1:3.5
3.	35	2019-20	6	1:5.8
4.	35	2020-21	10	1:3.5
5.	35	2021-22	10	1:3.5

#### **6.4.7. Feedback of stakeholders**

Constant feedback is obtained from the stakeholders as given below.

**Students:** The feedback about the curriculum and teaching methodology are obtained from the students every semester after completing the course. These comments we reviewed and considered while revising the syllabus. Department uses the feedback for enhancing the

audio-visual aids, advanced laboratory equipment's and e- journals. Apart from this the mentor-mentee system enables the teachers to obtain constant feedback from students.

**Employers, those who come for campus placements:** Based on the feedback from employers, skill development and personality development programmes are conducted in addition to regular curriculum content.

**Farmers:** Feedback is regularly obtained during Farmers Day, field visits, and field trials.

**Industries:** Quality sustenance and quality enhancement measures in curriculum development process is done by restructuring the course contents based on requirement prescribed by the industry people during our industrial visits.

**Entrepreneurs:** Based on the feedback from entrepreneurs, the contents for skill development and personality development programmes are decided and implemented.

**Govt. officials:** Feedback obtained from Government officials are included during the revision of courses for PG research programmes.

**Action taken:**

- Soft skill development training is provided to students.
- Personality development courses and technical skill programmes are organized.
- Students are taught to prepare for competitive examinations like NET, ICAR-JRF and SRF.

**6.4.8. Student intake and attrition in the programme for last five years (M. Sc. in Fruit Science)**

Actual students admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
10	10	6	10	10	--	--	--	--	--

**List of M.Sc. (Hort.) fruit science thesis - submitted from 2017 - 2022**

S.No.	Name of the guide	Name of the student	Year of the submission	Title of the research
1.	Dr.Arumugam Shakila	Aswathy Suresh	2017	Effect of Pruning on yield and quality of Guava cv.( <i>Psidium guajava</i> . L.) Lucknow- 49
2.	Dr.J,Samruban	J.Ilakiya	2017	Effect of Foliar Application of bio-regulators on flowering and fruit and yield of pomegranate ( <i>Punica granatum</i> L.Var.Bhagwa)
3.	Dr. S. Venkatesan	A.Narmadadevi	2017	Effect of edible coating to extend the shelf life of guava var.l.49 stored at room temperature.

4.	Dr.C. Muruganandam	S.R.Rajmohan	2017	Studies on propagation techniques in Jack Fruit ( <i>Artocarpus heterophyllus</i> Lam)
5.	Dr.T.R.Barathkumar	M.Seeman	2017	Studies on propagation techniques in Aonla ( <i>Phyllanthus emblica</i> )
6.	Dr.S.Kamalakannan	Sheik RoohiTasleema	2017	Integrated nutrient management in sapota ( <i>Manilkara sapota</i> .L) P.Royen)Cv.Kirthabarthi
7.	Dr.T.Uma Maheswari	SukhamJoybi Singh	2017	Studies on propagation in soursop ( <i>Annona muricata</i> L.) and Its field establishment for leaf production.
8.	Dr. Arumugam	Arunkumar, A.	2018	Effect of post harvest treatments on shelf life of guava cv.Lucknow 49
9.	Dr.J.Samruban	Gopi, V.	2018	Influence of pre-sowing treatments on germination, growth and vigour of mango cv. Seenipazham
10.	Dr. S. Venkatesan	Manesha	2018	Effect of spice solutions and packaging in extending the shelf life of Red banana
11.	Dr.T.R.Barathkumar	Pradeepkumar, G.	2018	Effect of nutrient management through bio-organic manures on productivity and quality of acid lime ( <i>Citrus aurantifolia swinshe</i> )
12.	Dr. S. Madhavan	Priyadharshini K.	2018	Effect of post harvest treatments and packages on shelf life of mango fruit
13.	Dr. M. Rajkumar Assistant Professor	Sarmista Chakraborty	2018	Effect of growth regulators and organic substances on rooting of grapes ( <i>Vitis vinifera</i> )
14.	Dr. CT. Sathappan	Sivanesh, K.	2018	Studies on the influence on foliar application of 'K' on growth, yield and quality of Hill banana
15.	Dr.T.Uma Maheswari	Vidhu Valsan	2018	Product development from jack fruit and its nutritional analysis

16.	Dr. M. Gayathiri	Vijayaraj, S	2018	Effect of plant growth regulators on rooting of cuttings in guava
17.	Dr.Arumugam Shakila	S.Sujith Raja	2019	Effect of integrated nutrient management on growth, yield and quality of Banana cv.Neypooan
18.	Dr.S.Venkatesan	V.Priyadharshini	2019	Effect of edible coatings on shelf life of acid time stored at room temperature
19.	Dr.N.Dhamodharan	S.Shiney	2019	Studies on off-season bearing in mango by using potassium nitrate, ethephon and urea.
20.	Dr.M.Rajkumar	J.Kowsalya	2019	Effect of chemicals and growth regulators on extending the shelf life and quality of banana cv. Grand Naine
21.	Dr.CT.Sathappan	N.Kayalvizhi	2019	Effect of crop regulation on growth, yield and quality of guava
22.	Dr.T.Uma Maheswari	P.DeepthiBershani	2019	Integrated nutrient management in sour sop ( <i>Annona muricata</i> .L)
23.	Mr.S.Elakkuvan	ShamithaGeddarn	2019	Post harvest studies on storage life of papaya ( <i>Caricapapaya</i> .L) cv.Red lady
24.	Mr.S.Mullaimaran	S.Santhoshkumar	2019	Effect of plant growth regulators on growth, flowering, fruit set, yield and quality of papaya ( <i>Caricapapaya</i> .L) cv.Red lady
25.	Mr.G.Samlind Sujin	A.Markandayan	2019	Effect of growth regulators on rooting of hardwood cuttings in guava
26.	Mrs.R.Rajeswari	G.Indhuja	2019	Effect of micronutrients on growth and yield of Banana cv.Monthan
27.	Dr.Arumugam	Arthi, L.R.	2020	Studies on the influence of micro nutrients on the growth ,yield and quality of banana

	Shakila			( <i>Musa spp.</i> ) cv. Red Banana
28.	Dr. S. Venkatesan	Chithra, M.	2020	Effect of herbal coatings to extend the shelf life of banana var. Ney Poovan stored at room temperature
29.	Mr.N.Dhamodharan	Kaviya, R.	2020	The effect of pre -germination treatment on germination, growth and vigour of yellow passion fruit ( <i>Passiflora edulis</i> F. Flavicarpa)
30.	Dr. M. Rajkumar	Nandhinidevi, P.	2020	Studies on the influence of plant growth regulators and organic substances on rooting of guava ( <i>Psidium guajava</i> ) cv. Lucknow-49
31.	Dr. CT. Sathappan	Preethi, S.	2020	Effect of preharvest treatments to enhance the post harvest shelf life and quality of papaya ( <i>Carica papaya</i> L) cv. Red lady
32.	Dr. J. Padmanaban	Sounderarajan, M.	2020	Seed propagation studies on soursop ( <i>Annona muricata</i> )
33.	Dr.T.Uma Maheswari	Suganth, N.	2020	Standardization of protocols for development of value added products from banana ( <i>Musa sp.</i> )
34.	Mr.S.Elakkuvan	Sugavanam, R.S.	2020	Effect of potassium nitrate and ethephon on yield and quality characters of papaya ( <i>Carica papaya</i> L) cv. Red Lady
35.	Dr. S.Mullaimaran	Thiruppathi ,M.	2020	Effect of plant growth regulators on rooting of semi hardwood cuttings in West Indian Cherry ( <i>Malphigia punicifolia</i> L)
36.	Mr.G.Samlind Sujin	Vedhanayaki, D.	2020	Effect of bioformulations on growth of mango stones var. Neelum
37.	Dr.G.Samlind Sujin	V.Philip Rao	2021	Effect of plant growth regulators and chemicals on fruit cracking and yield of pomegranate cv. Mridula

38.	Dr.K.Manivannan	D.Prakashkumar	2021	Studies on genetic variability and diversity in wood apple
39.	Mr.S.Elakkuvan	P.Ramkumar	2021	Effect of pseudostem injection of plant growth regulators on yield and quality characters of Banana ( <i>Musa spp L.</i> ) cv.Poovan
40.	Dr.T.Uma Maheswari	S.Sinduja	2021	Effect of plant growth regulators on rooting of cuttings in pear ( <i>Pyrus communis L.</i> )
41.	Dr.S.Mullaimaran	K.TamizhAnandh	2021	Standardization of different age of rootstocks on grafting techniques in jack fruit ( <i>Artocarpus hetrophyllus L</i> )
42.	Mr.N.Dhamodharan	N.Venkatraj	2021	Effect of plant growth regulators on rooting of stem cuttings in jamun ( <i>Syzygiumcumini L</i> )
43.	Dr.Arumugam Shakila	Aishwarya,K	2022	Evaluation of Strawberry ( <i>Fragaria ×ananassa Duch.</i> ) genotypes for yield and yield components
44.	Dr.J.Samruban	DhivyaShree,T	2022	Propagation of acid lime by stem cutting technique ( <i>Citrus aurantifolia L.</i> )
45.	Dr. CT. Sathappan	JawaharSrinith,K	2022	Effect of foliar application of micronutrients and plant growth regulator sprays on growth,yield and quality of Guava ( <i>Pasidium guajava</i> )cv. Lalit.
46.	Dr. M. Rajkumar	M.KarunyaBala	2022	Studies on effects of bio stimulant on growth, yield and quality of Banana ( <i>Musa spp.</i> ) cv. Rasthali (AAB)
47.	Mr.N.Dhamodharan	Kaviyarasu,S	2022	Integrated nutrient management in Sapota [ <i>Manilkara zapota (L.)P.Royen</i> ] cv. Kalipatti.
48.	Dr. S. Venkatesan	Kavisri,M	2022	Effect of organic bunch feeding for improving the yield,quality and profitability

				of Banana ( <i>Musa spp.</i> ) cv. Ney Poovan
49.	Dr.T.Uma Maheswari	Narendrakumar,M.R	2022	Standardization of products for the development of different value added products from papaya ( <i>Carica papaya</i> L.)
50.	Mr. S.Elakkuvan	Sharvesh,S	2022	Seed germination studies in Kokum [ <i>Garcinia indica</i> (Thouars) Choisy]
52.	Dr.S.Mullaimaran	Vetrivel,SPL	2022	Effect of plant growth regulators on rooting of leaf cutting in Guava ( <i>Psidum guajava</i> L.) cv.ARKA KIRAN.

#### Employment Details in PG Students

Name of the Student	Academic year of completion of degree	Name of the institute if joined in Ph.D.	Employment details			
			Central Govt.	State Govt.	Name of the Company	Entrepreneur
C.Jeyalakshmi	2017	-	--	Assistant professor, Panjangoa ,Karaikal.	-	-
S.Sujith Raja	2019	-	-	-	The Ramco Cements Limited	-
M.R.Priya	2018	-	-	TNAU - SRF	-	-
Sarmista Chakraborty	2018	-	Senior Research Fellow, Assam Agricultural University.	-	Private College (TNAU Affiliated) – Assistant Professor	-

B.Vedhanaya ki	2020	-	-	Horticultu re Officer (HO)	-	--
S.Sugavanam	2020		CEO (FPO @ central governmen t scheme)	-	-	-
M.Chithra	2020	-	Gandhi Gram rural Institute.	-	-	-
P.Nandhinide vi	2020	-	Senior Research Fellow, Centre of Excellence (CoE) for Cut flowers, Thally, Krishnagiri .	-	-	-
K.Tamil Anand	2021	-	-	-	-	Tamil Nursery Garden and Madithottam, Virudhachala m

#### NET Qualified details

Fruit Science				
S.NO.	Academic Year	Name of the Candidate	Roll number	Year of passing
1.	2020-21	M.Chitra	4111206559	2021

### **Salient research achievements**

The Department of Horticulture has contributed to the fruit science sector by researching upon the need based objectives in the coastal area.

- Propagation of Guava through simple layering as well as air-layering has been successfully conducted and the layers are produced and distributed to the nearby farming community.
- Propagation of West Indian Cherry through air-layering is done and dispersed to the nearby peoples.
- Sapota grafts through approach grafting is produced and distributed.
- The research focuses on fruit crops like Papaya, Pomegranate and Banana with respect to nutrient management studies. Spraying of plant boosters for better results in the above said Tropical fruit crops.
- High Density Planting in Guava was undertaken and the hike in yield was documented and training given to nearby farmers.
- Product development studies carried out in Papaya, Jack and Edible coating work in Guava emphasizes the research carried out in this field. Induction on off-season bearing of Mango using certain chemicals/PGR's made remarkable achievements.

#### **6.4.9. ICT Application in Curricula Delivery**

A smart class room facility, six computers with internet facility and two LCD projectors and smart TV help in making the teaching enabled with ICT in the Department. Video facilities available in Department help us to cast videos on precision farming practices pertaining to floriculture, nursery and post harvest value addition. Software's on Archi CAD (AUTO CAD/smart draw) and 3 D Land cad is used to demonstrate to the students for the Ornamental and Landscape Gardening course. PPTs are designed and updated regularly to teach the syllabus content in a way to make the students understand better. Mobile Apps for Landscape designing, sound pollution monitoring and Google class room are used and students are exposed to these Apps to keep them aware of the current trends. Site analysis and measuring tools available on Google Earth is exposed to the students for learning landscaping in a smart way.



SAPOTA BLOCK



POST HARVEST UNIT

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented college-Wise.

6.4.11 Since the accreditation of Programmes is related to the all India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12 Certificate (Applicable when SSR is submitted for Programme)

I, the Dean, Faculty of Agriculture, Annamalai University hereby certify that the information contained in the section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
**DEAN**  
**FACULTY OF AGRICULTURE**  
**ANNAMALAI UNIVERSITY**

Signature of Dean of the College with Date & seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
M.Sc. (Hort.) Vegetable Science**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)



**FACULTY OF AGRICULTURE**

**Department of Horticulture**

**SELF STUDY REPORT OF**

**M.Sc. (HORT.) VEGETABLE SCIENCE**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## Self-Study Report

### 6.4. Name of the Programme: M.Sc. (Hort.) Vegetable Science

Offered by: Department of Horticulture

#### 6.4.1. Brief History

The Division of Horticulture came into existence in 1958 with an objective of offering horticultural subjects to B.Sc. (Ag.) graduates. In the early stages, the Division was attached with the Department of Agricultural Botany. Under the leadership of renowned Horticulturist of International repute, Dr. S. Krishnamoorthy, a pioneering post graduate course in Horticulture was introduced for the first time in South India in 1958-59. With further expansion, the erstwhile Division of Horticulture functioning from 1958-59 onwards was upgraded as a Department in 1991 with the revival of a full fledged post graduate programme - M.Sc. (Ag.) in Horticulture and later on it was renamed as M.Sc. (Hort.) in 2011. However, in tune with the guidelines of ICAR new regulations to offer specialized degrees *viz.*, Fruit Science, Vegetable Science, Floriculture and Landscape Gardening and Plantation, Spices, Medicinal and Aromatic Crops were introduced from the year 2012 onwards.

Historical Itinerary	Year/Period
Division of Horticulture	1958
First PG Programme in Horticulture	1958-59
Upgraded as a Department	1991
Post graduate Programme M.Sc. (Ag.) in Horticulture	1991
M.Sc. (Hort.) in Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2012 -2013
M.Sc. (Hort.) Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2022-2023 onwards

The M.Sc. (Hort.) Vegetable Science has 70 credits in four semesters which includes 20 credits for major courses, 08 credits for minor courses, 06 credits for supporting courses, 05 credits for common courses, 01 credit for seminar and 30 credits for master's thesis research. In addition to the 70 credits, 05 contact hours for non-credit compulsory courses has been included to improve the research acumen and employability of the students. Revision of the curricula was carried out in the academic year 2022-2023 in concurrence with latest recommendations from BSMA and 5<sup>th</sup> Deans Committee of ICAR.

**Distribution Pattern of Courses and Credit (For Research Program)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Research	Credit Load
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14
<b>Credit Load</b>	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

**Distribution Pattern of Courses and Credit (For IDEA Program)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	IDEA	Credit Load
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10 +10	22
<b>Credit Load</b>	<b>20</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>30</b>	<b>70</b>

**Distribution Pattern of Courses and Credit M.Sc. (Hort.) Vegetable science**

S.no.	Course Code	Course Title	Credit Hours
		<b>Major Courses</b>	
1	VSC 501*	Production of Cool Season Vegetable VSC Crops	2+1
2	VSC 502*	Production of Warm Season Vegetable Crops	2+1
3	VSC 503*	Growth and Development of Vegetable Crops	2+1
4	VSC 504*	Principles of Vegetable Breeding	2+1
5	VSC 505	Breeding of Self-Pollinated Vegetable Crops	2+1
6	VSC 506	Breeding of Cross-Pollinated Vegetable Crops	2+1
7	VSC 507	Protected Cultivation of Vegetable Crops	1+1
8	VSC 508	Seed Production of Vegetable Crops	2+1
9	VSC 509	Production of Underutilized Vegetable Crops	2+1

	VSC 510	Systematics of Vegetable Crops	1+1
	VSC 511	Organic Vegetable Production	1+1
		<b>Minor Courses</b>	
10	VSC 512	Production of Spice Crops	2+1
11	VSC 513	Processing of Vegetable Crops	1+1
12	VSC 514	Postharvest Management of Vegetable Crops	2+1
		<b>Supporting courses</b>	
13	STA 501	Statistical Methods for Applied Sciences	2+1
14	COM 501	Information Technology in Agriculture	2+1
		<b>Common Courses</b>	
15	PGS 501	Agricultural Research, Research Ethics and Rural Development Programmes	1+0
16	PGS 502	Technical Writing and Communications Skills	1+0
17	PGS 503	Basic Concepts in Laboratory Techniques	0+1
18	PGS 504	Library and Information Services	1+0
19	PGS 505	Intellectual Property and its Management in Agriculture	1+0
20	VSC 591	Seminar	0+1
21	VSC 599	Research	30

\*Compulsory courses

#### SEMESTER WISE DISTRIBUTION OF COURSES (RESEARCH/IDEA)

Sl. No.	Course Title	Credit hours
	<b>I Semester</b>	
1.	Major Courses	8
2.	Supporting Courses	
	STA 501 - Statistical Methods for Applied Sciences	3
	COM 501 - Information Technology in Agriculture	3
3.	Common Courses	

	PGS 501 - Agricultural research, research ethics and rural development programmes	1
	PGS 502 - Technical writing and communications skills	1
4.	VSC 599 Research/IDEA	2/-
	<b>Total</b>	<b>18/16</b>
	<b>II Semester</b>	
1.	Major Courses	12
2.	Common Courses	
	PGS 503 - Basic Concepts in Laboratory Techniques	1
	PGS 504 - Library and information services	1
3.	VSC 599 Research/IDEA	6/-
	<b>Total</b>	<b>20/14</b>
	<b>III Semester</b>	
1.	Minor courses	6
2.	Common courses	
	PGS 505 - Intellectual property and its management in agriculture	1
3.	Disaster Management (1+ 0)	-
4.	Constitution of India (Contact hour 1+ 0)	-
5.	VSC 591Seminar	1
6.	VSC 599 Research/IDEA	10/10
7.	Value Added Courses (3+0) ( <a href="https://annamalaiuniversity.ac.in/studport/value_added_crs.php">https://annamalaiuniversity.ac.in/studport/value_added_crs.php</a> )	-
	<b>Total</b>	<b>18/18</b>
	<b>IV Semester</b>	
1.	Minor courses	2
2.	VSC 599 Research/IDEA	12 (8+4)/20
	<b>Total</b>	<b>14/22</b>

#### **Vision**

- Imparting quality education in Vegetable Science degree programme.
- Increasing the Gross Enrolment Ratio (GER) of Vegetable Science programmes.

### Strategic plan to achieve Vision and Goal

Goal	Programme Objectives	Implementation Plan	Performance Metrics Timeline
Quality education	To prepare students to generate knowledge on management, production and strategies leading to the development of research philosophies, concepts and methodologies.	Classes are handled by experienced Faculty through class room teaching and practical demonstration.	Periodical class tests, practical assignments, quiz and end term exams are conducted to evaluate the performance of students.
Employability and National standards	To inculcate ability in students to critically analyze and comprehend the knowledge gained from a range of scientific data to approach cultivation problems and reach appropriate solutions in the area of their specialization.	The students are guided to collect literature, identify gaps and propose research problem and conduct research on it.  Timely revision of curriculum according to BSMA and ICAR Deans committee	The advisory committee supervises and evaluates the students during end of every semester.
Professional ethics	To enhance capability of students to adhere to professional ethics and responsibilities related to horticultural practices.	The curriculum includes field / lab research activities making the student aware of professional norms and resource usage in cautions manner	The student is continuously monitored by periodical review of work done in field, use of agricultural inputs, recording timely observations and verification of data by advisory committee.
Technology transfer	To facilitate exposure of students to function effectively as an individual and as a	The interdisciplinary research approach is encouraged in making the students work in a	The activity of students in related research labs is evaluated by the

	member or leader in diverse teams or interdisciplinary environment	diverse environment.	major supervisor from time to time
Lifelong learning	To engage the students in life-long learning and professional development through self- directed studies, continuing education or professional and doctoral level studies.	The programme includes compulsory courses along with research, seminars delivery and publication of research work.	The continuous evaluation in courses is done through theory and practical exams while research is evaluated based on research progress in each semester and thesis submission at the end of the degree.

### Accomplishments

The Department of Horticulture is a pioneer institute which offered post graduate Horticultural programme in South India during 1958-59. The Horticulturists of international repute like Dr. S. Krishnamoorthy, Prof. P. Kalyanasundaram and Dr. L. R. Rajasekaran have fuelled the growth of this Department in its early stage and formed the basis of its present state of existence. The Department has been imparting quality education by using updated technologies in the field of education with audio visual aids, method demonstrations and participatory approach and interactive practical experiments. **The Department was awarded with DST - FIST funds for infrastructure development. The syllabus content are updated as per suggestions by stake holders, lead organisations in agriculture and scientific experts. The students are given practical exposure in horticulture industries by hands- on - training and by study tours and industrial trainings.** The students are given counselling by the teachers for their academic improvement and future planning. Special coaching for ICAR JRF, SRF and NET examinations are provided.

The Department of Horticulture has contributed to the horticulture sector by researching upon the need based objectives in the coastal area. The location specific research outcomes are disseminated to the farmers in the coastal Tamil Nadu to propel horticultural crops in the coastal farming system. The department distributes certified seeds of "Annamalai brinjal" to the farmers. **The standardized package of practices developed for rice-fallow vegetable production, common tropical vegetables and introduction of nutritionally rich/economically feasible less known crops has been carried out. For the industrial sector stake holders, the Department is providing its research expertise by conducting product evaluation research.**

The Department is training the farmers in new technologies that are upcoming in the field of horticulture and creating awareness among the farmers about the new crops, varieties and techniques. Diagnostic services to the farmers are provided for various

production problems. Demonstration of technologies through Rural Horticultural Work Experience is done every year. Periodically workshops and seminars are conducted for the benefit of industrial stake holders, scholars and scientists.

Category	Upto 2016	Last five year period (2017-2022)
Number of Publications (Journal articles)	724	338
Number of Books	13	20
Number of Book chapters	45	232
Number of Projects Handled	21	26
Grant mobilization (Rs. in rupees)	188.48	57.04
Number of Ph.D.s produced	43	8
Number of PGs produced	328	180
Number of Seminars/Conferences /Workshops/Webinar Organized	6	25
Number of Awards/recognition received by the Faculty	113	51
Countries visited by the Faculty. (Professional Visit)	9	9

#### 6.4.2. Faculty Strength

Presently 35 staff members are available in the Department specialized in different aspects of Horticulture.

Sl.No.	Sanctioned posts	Sanctioned	Filled	Vacant	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1	Professor*	6	6	-	1
2	Associate Professors*	5	5	-	1
3	Assistant Professors*	24	24	-	3
	<b>Total</b>	<b>35</b>	<b>35</b>	<b>-</b>	<b>5</b>

Number of Faculty designated for Vegetable Science

Professor\* - 01

Associate Professor\* - 01

Assistant Professor\* - 06

\*Commonly engaged for other courses also

**Faculty engaged for common courses from the other department**

S.No	Common faculty engaged for supporting courses	Faculty in place (on August 2022)	Vacant position	Faculty Recommended by other regulatory bodies
1.	Professor	1	-	-
2.	Associate Professor	3	-	-
3.	Assistant Professor	5	-	-

**Credentials of the Faculty**

Name & Designation	Total Service (Years)	Field of Interest/ Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others
Dr. K. HariPriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
Dr. Arumugam Shakila Professor	30	Fruit Science	46	3	115	4	6
Dr. A. Anburani Professor	28	Vegetable Science	28	3	61	14	10
Dr. P. Karuppaiah, Professor	28	Floriculture and Landscaping	26	7	110	15	8
Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11

Dr.S.Rameshkumar Professor	23	Fruit Science	14	6	52	20	16
Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
Dr. S. Kamalakaran Assoc. Professor	19	Vegetable Science	9	-	86	32	25
Dr. R. Sudhagar Associate professor	20	Floriculture and Landscaping	12	1	71	40	22
Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	37	22	9
Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	33	10	23
Dr. C. Muruganandam Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	10	1	41	17	16
Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	6	-	54	18	-
Dr. R. Sendhilynathan,	20	Floriculture and	10	-	39	13	18

Assistant Professor		Landscaping					
Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28
Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	37	11	23
Dr. K. Sha Assistant Professor	20	Vegetable Science	9	-	32	-	24
Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	9	-	16	13	11
Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10
Dr. T. Uma Maheswari Assistant Professor	19	Fruit Science	8	1	89	42	25
Dr. D. Dhanasekaran Assistant Professor	19	Floriculture and Landscaping	8	1	47	39	20
Dr. A. R. Lenin Assistant Professor	18	Floriculture and Landscaping	5	-	14	4	6
Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22

Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
Mr.S.Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7
Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	13	12
Dr. G.Samlind Sujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	4	-	31	6	5
Dr. S. Sivasankar Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	20	4

**Publication details (2017-2022)**

S.No.	Title	Authors	Journal	Year
1.	Genetic divergence, heritability and yield traits of different Ash gourd accessions	Kichenaradjou, M. and Arumugam Shakila.	International Journal of Agricultural Sciences and Research. 7(6): 453-458.	2017

2.	Effect of combined application of inorganic and water soluble fertilizers on growth parameters of chilli hybrid ( <i>Capsicum annuum</i> ).	K. Muthumanickam and A. Anburani	The Asian Journal of Horticulture. 12(1)117-12.	2017
3.	Yield and yield parameters as influence by various sources of water soluble fertilizers on chilli hybrid ( <i>Capsicum annuum</i> ).	K. Muthumanickam and A. Anburani	The Asian journal of Horticulture. 12(1)51-54.	2017
4.	Effect of different planting density on growth parameters of moringa. ( <i>Moringa oleifera</i> )	K. Ramkumar and S. Anuja	Asian.J.Hort. 12 (2): 198-201.	2017
5.	Effect of different planting density on leaf yield and quality of moringa. ( <i>Moringa oleifera</i> )	K. Ramkumar and S.Anuja	Asian.J.Hort. 12 (2): 241-243.	2017
6.	Effect of various drying methods on the quality of Moringa leaf powder	S. Anuja and K. Ramkumar	Asian.J.Hort. 12 (2): 241-243.	2017
7.	Studies on combining ability in okra ( <i>Abelmoschus esculentus</i> (L.) (Moench)	Waikhom Jupiter, S and R. Kandasamy	Asian J. Hort. 12 (1): 41-46.	2017
8.	Variability studies in cucumber ( <i>Cucumis sativus</i> L.).	R. Kandasamy	Asian J. Hort. 12 (1): 84-87.	2017
9.	Effect of bio-stimulants on the growth and yield of baby corn ( <i>Zea mays</i> L.).	Laishram Romeo Singh and S.Venkatesan,	Prog. Res. 12(Spl.IV): 2766 - 2769.	2017
10.	Response of an ideotype of cluster onion ( <i>Allium cepa</i> L. <i>aggregatum</i> ) to farm and animal wastes.	Anbarasi, D., K. HariPriya, C.T. Sathappan, D. Stella.	Journal of Phytology. 10:37-39.	2018
11.	Studies on genetic variability and genetic advance for yield parameters in watermelon ( <i>Citrullus lanatus</i> Thumb.).	A.Anburani	The Asian journal of Horticulture. 13(2) 39- 44.	2018
12.	Effect of water soluble fertilizers on yield and quality parameters in brinjal hybrids ( <i>Solanum melongena</i> L.)	A.Anburani	The Asian journal of Horticulture. 13(2)55-58.	2018
13.	Influence Effect of water soluble fertilizers on growth and yield parameters in brinjal hybrid ( <i>Solanum melongena</i> l.)	A.Anburani	The Journal of Phytology. (10) 33-36	2018
14.	Effect of different levels of water soluble fertilizers on quality parameters and nutrient uptake in brinjal hybrids.	K. Muthumanickam and A. Anburani.	The Journal of Phytology. (10) 49-51	2018

15.	Organic nutrient management technique for enhancing growth and physiological parameters in radish ( <i>Raphanus Sativus</i> L).	Anu P.Mani and A. Anburani	The Journal of Phytology. (10) 40-42	2018
16.	Effect of spacing and pruning on leaf yield and quality of moringa. ( <i>Moringa oleifera</i> )	P. Arivanandham and S. Anuja	Adv. Plant Sci. 31 (2): 81-84.	2018
17.	Effect of spacing and pruning on growth parameters of moringa. ( <i>Moringa oleifera</i> )	P. Arivanandham and S. Anuja	Adv. Plant Sci. 31 (2): 67-71.	2018
18.	Effect of various drying methods on the quality of Moringa leaf powder ( <i>Moringa oleifera</i> )	S. Anuja and P. Arivanandham	Adv. Plant Sci. 31 (2): 93-96.	2018
19.	Effect of micro nutrients on growth flowering and yield of cucumber ( <i>Cucumis sativus</i> L.) Var. Long green under different seasons	R.Sureshkumar and Queen Flower,M.J.,	JETIR. 5(10): 407-412	2018
20.	Influence of plant growth regulators on growth characters in brinjal ( <i>Solanum melongena</i> L.) cv. Annamalai	Arivazhagan E., A. Kavitha and R. Kandasamy	The Asian J. Hort. 13 (2): 59-63.	2018
21.	Influence of plant growth regulators on yield and quality characters of brinjal ( <i>Solanum melongena</i> L.) cv. Annamalai	Arivazhagan E., A. Kavitha and R. Kandasamy. 13 (2): 45-49.	The Asian J. Hort.	2018
22.	Evaluation of physio-morphological characters of snake gourd ( <i>Trichosanthesanguina</i> L.) genotypes.	M.Rajkumar.	IJRAR. 5(4): 796-807.	2018
23.	Effect of organic fertigation on growth parameters of bell pepper ( <i>Capsicum annum</i> var. grossum sendt.)	R. Devanathan, K. Sekar, P. Madhanakumari and Y. Hariprasad	Plant Archives. 18(1): 749-752.	2018
24.	Correlation and path analysis in Okra ( <i>Abelmoschus esculentus</i> L. Moench).	J. L. joshi, AjishMuraleedhara n and Y. Anbuselvam	Journal of Emerging Technologies and Innovative Research. 5(8):1193-1197.	2018
25.	Character inter-relationship and path coefficient studies in Tomato ( <i>Solanum lycopersicum</i> L.)	J. L. joshi, AjishMuraleedhara n,Y. Anbuselvam and K. Saravanan	Journal of Emerging Technologies and Innovative Research. 5(11):267-271.	2018
26.	Soil solarization for growth attributes and weed control in tomato nursery.	S.Mullaimaran and K.Haripriya	International Journal of Advance Research In Engineering Science And Technology.	2018

			23(10):25-30.	
27.	Screening of Dolichos bean <i>Lablab purpureus</i> L. (sweet) genotypes for growth and yield in coastal regions of Tamil Nadu	R.Arulananth and S.Ramesh Kumar	Plant Archives. 18(2):1258-1262.	2018
28.	Effect of Integrated nutrient management on growth and yield of dolichos bean ( <i>Lablab purpureus</i> )	R.Arulananth and S.Ramesh Kumar	Annals of Plant and Soil Research. 20(3):302-306.	2018
29.	Effect of different levels of water soluble fertilizers on yield and quality parameters in brinjal hybrids ( <i>Solanum melongena</i> L.)	A. Anburani , B. Babitha and K. Muthumanickam	Plant Archives. 19 (2) 2561-2564.	2019
30.	Genetic variability, heritability and genetic advance for yield and yield components in watermelon ( <i>Citrullus lanatus</i> THUMB.).	A. Anburani, P. Kannan and K. Muthumanickam	World News of Natural Sciences. 25 (22-30).	2019
31.	Effect of soil solarization on weed control index and efficiency of Amaranthus species	K.Muthumanickam and A.Anburani	Annals of plant and soil research. 21(3):265-269.	2019
32.	Effect of off season soil management practices on growth and yield of Amaranthus species.	A. Anburani and K.Muthumanickam	Annals of plant and soil research. 21(3):280-284.	2019
33.	Soil solarization an effective management practice on weed management and yield of palak ( <i>Beta vulgaris</i> var. bengalensis).	K.Muthumanickam and A.Anburani	World Scientific News. 129: 211-221.	2019
34.	Effect of organic nutrients on growth parameters of Moringa ( <i>Moringa oleifera lam.</i> ) for leaf production	N. Pallavi and S.Anuja	Plant Archives. 31 (2): 93-96.	2019
35.	Organic nutrient management on the leaf production and quality parameters of Moringa ( <i>Moringa oleifera Lam.</i> ) cv.PKM-1)	N. Pallavi and S.Anuja	Plant Archives. 19(22):2439-2442.	2019
36.	Effect of organic nutrients on leaf yield and quality of Moringa ( <i>Moringa oleifera Lam</i> )	N. Pallavi and S.Anuja	Res. Crops. 20(3):563-568.	2019
37.	Correlation and path coefficient analysis in bottle gourd ( <i>Lagenaria siceraria</i> (Mol.) Standl.)	Kandasamy, R., E. Arivazhagan and S. Sharmil Bharathi	J. Pharmacognosy and Phytochemistry. 8(3): 3990-3993.	2019
38.	Evaluation of growth and yield characters in bottle gourd ( <i>Lagenaria siceraria</i> (Mol.) Standl.)	Kandasamy, R., E. Arivazhagan and S. Sharmil Bharathi	J. Pharmacognosy and	2019

			Phytochemistry. 8(3): 4653-4655.	
39.	Genetic divergences among landraces of pumpkin ( <i>Cucurbita moschata</i> Duch ex. Poir) from Tamil Nadu	Kandasamy, R., E. Arivazhagan and P. Anusa	Annals of Plant and Soil Research. 21 (4): 333-336.	2019
40.	Studies on genetic parameters, correlation and causation among biometrical traits in bhendi.	Vinithra, S., K. Sindhuja, N. Senthilkumar, P. Thangavel, S. T. Ponsiva, R. Kandasamy and S. Thirugnanakumar	Electronic J. Plant Breeding. 10(4): 1541-1546.	2019
41.	Variability and heritability studies in bottle gourd ( <i>Lagenaria siceraria</i> (Mol) Standl).	Kandasamy, R., E. Arivazhagan and S. Sharmil Bharathi	Plant Archives. 19 (2): 3263-3266.	2019
42.	Studies on genetic diversity in bottle gourd ( <i>Lagenaria siceraria</i> (Mol.) Standl.)	Kandasamy, R., E. Arivazhagan and S. Sharmil Bharathi	Plant Archives. 19 (2): 2270-2272.	2019
43.	Effect of growth regulators on growth and yield of culinary melon ( <i>Cucumis melo</i> L.).	Kandasamy, R., E. Arivazhagan and S. Sreevidya	International J. Res. Analytical Rev.	2019
44.	Influence of plant growth regulators on sex expression of culinary melon	Kandasamy, R., E. Arivazhagan and S. Sreevidya	International J. Res. Analytical Rev. 6(2): 575-578.	2019
45.	Studies on the influence of organic manures and effective microorganisms on growth characters of okra.	Kamalakaran, S., Ganesan, G., Sudhagar, R., Kumar, S. and Venkatesan, S.	Journal of Emerging Technologies and Innovative Research. 6 (6):441 - 443.	2019
46.	Influence of fertigation and mulching on growth characters at harvest stage in okra	Kamalakaran, S., Sureshkumar, S., Kumar, S., Sudhagar, R. and Venkatesan, S.	International Journal of Research and Analytical Reviews. 6 (2):812 - 815.	2019
47.	Effect of zinc sulphate, zinc solubilizing bacteria and vesicular arbuscular mycorrhizae on growth attributes of okra ( <i>Abelmoschus esculentus</i> L. moench.).	Kamalakaran, S., R. Manikandan, R., Haripriya, K., Sudhagar, R. and S. Kumar, S.	Plant Archives. 19 (2):3053-3056.	2019
48.	Effect of zinc sulphate and biofertilizers on yield attributes and yield of okra ( <i>Abelmoschus esculentus</i> L.) Moench).	Kamalakaran, S., Manikandan, R., Haripriya, K., Sudhagar, R. and Kumar, S.	Res. on Crops. 20 (4):747-752.	2019

49.	Influence of organic nutrients on physiological and flowering characters of bitter gourd ( <i>Momordica charantia</i> L.) ecotype mithipagal	R.Sureshkumar, S.Deepa, M.Rajkumar, R.Sendhilmathan and T.R.Barathkumar	JETIR. 6(2):177-181.	2019
50.	Effect of organic nutrients on certain growth and yield characters of bitter gourd ( <i>Momordica charantia</i> L.) Ecotype "mithipagal"	R.Sureshkumar, S. Deepa, M. Rajkumar and R. Sendhilmathan	Plant Archives. 19(Suppliment 1):1013-1016.	2019
51.	Effect of organic inputs on yield and quality of okra ( <i>Abelmoschus esculentus</i> ).	R.Sureshkumar, S.Ayyappan, M.Rajkumar and R.Sendhilmathan	Plant Archives. 19(Suppliment 1):956-959.	2019
52.	Influence of bio-regulators on certain growth, flowering and yield characters of bhendi ( <i>Abelmoschus esculentus</i> L. Moench).	S.Ayyappan, R.Sureshkumar, M.Rajkumar, R.Sendhilmathan and T.R.Barathkumar.	Journal of Emerging Technologies and innovative Research. 6(6): 856-860.	2019
53.	Influence of organic inputs on the growth, yield and quality of tomato ( <i>Solanum lycopersicum</i> L.) cv. Sivam	E. Arivazhagan, R. Kandasamy and S. Maniram	Annals of Plant and Soil Research. 21 (4): 367-370.	2019
54.	Yield maximization of gherkin ( <i>Cucumis anguria</i> L.) using plant growth regulators.	P. Madhana Kumari and B. Shanmugapriya	J. Emerging Technol. Innov. Res. 6(4):2349-2162.	2019
55.	Effect of biostimulants on physiological and quality parameters of carrot ( <i>Daucus carota</i> L.) Var. Early Nantes.	P. Madhana Kumari, S. Parthiban and S. Eswaramoorthy	Int. J. Adv. Innov. Res. 6(2):XXVIII	2019
56.	Effect of Integrated Nutrient Management on Growth Characters of Radish ( <i>Raphanus sativus</i> L.)	P. Jai Sankar and J. Padmanaban	Journal of Emerging Technologies and Innovation Research. 6(1):645-649.	2019
57.	Influence of organic nutrients on yield.quality of bitter gourd ( <i>Momordica charantia</i> L.)cv.Long green.	Muruganandam.C., K.Udhyakumar, T.R. Barathkumar and S.Sivasankar.2019.	J. of.Emerging Technologies and innovative Research. 6(5):602-614	2019
58.	Effect of graded levels of nitrogen and azospirillum on fruit yield, quality and nutrient uptake in ash gourd ( <i>Beninca sahisvida</i> COGN.).	Muruganandam.C., I.Anandharaj, T.R.Barathkumar.a	J. of Pharmacognosy and phytochemistry.	2019

		ndS.Sivasankar.	8(3): 2455-2459	
59.	Studies on gene action and combining ability for earliness, fruit yield and yield contributing characters in Bhendi ( <i>Abelmoschus esculentus</i> L. moench.)	J.L. Joshi, G. Jayalakshmi, R. Ebenezer Babu Rajan and AjishMuraleedhara n	Plant Archives.19(2):2964-2966.	2019
60.	Sustainable soil health management for Dolichos bean cultivation in organic way by application of bulk and concentrated organic manures on post harvest nutrient status of Soil, yield and economics benefits to the farmers.	S.Mullaimaran and K.Haripriya T.R.Barathkumar,P.Shanmugaraja and Jaisankar.P.	Journal of Pharmacognosy and Phytochemistry. SP(2): 432-435	2019
61.	Influence of organic amendments on yield, quality parameters of Baby Corn ( <i>Zea Mays</i> L) Cultivation	S.Mullaimaran., K,Haripriya, and Jaiganesh.V.	Journal of Applied Science and Computation. 6(4):3701-3708.	2019
62.	Solar along with organic amendments assisted integrated approach for the management of soil borne diseases and pest on tomato at nursery level.	S.Mullaimaran.,K,Haripriya,T.R.Barathkumar and Jaiganesh.V.	Plant Archives. 6(1):1352-1355.	2019
63.	Effect of storage and seed treatments on the germination and seedling vigour of ambrette ( <i>Abelmoschus moschatus</i> Medic.).	Rajeswari, R. and Arumugam Shakila.	Internat. J. Advance and Innovative Research. 6(2): 154-157.	2019
64.	Genetic diversity in brinjal ( <i>Solanum melongena</i> L.).	K. Balasubramaniam, K. Haripriya, T.R. Bharath Kumar and R. Elangaimannan.	Plant Archives. 20(2):3754-3758.	2020
65.	Influence of organic inputs in augmenting the growth and yield attributes of okra ( <i>Abelmoschus esculentus</i> (L.) Moench.).	T.Uma Maheswari and M. Rajkumar.	Plant Archives. 20(1):2968-2970	2020
66.	Response of aggregatum onion ( <i>Allium cepa</i> L. Var. <i>aggregatum</i> Don.) to organic inputs, biofertilizers and biostimulants.	D. Anbarasi and K. Haripriya	Plant Archives. 20(1): 759-762.	

67.	Optimizing the varied levels of nitrogen and potassium on yield of soil-less culture of brinjal ( <i>Solanum melongena</i> L.) using different media	G. Sajiv, A. Anburani, K. Sekar and K. Muthumanickam	Plant Archives. 20( Supplement 2):1863-1865.	2020
68.	Effect of organic seed pelleting on biometric, biophysical and yield parameters of clusterbean under saline condition.	Prakash, M; Pallavamallan, S; Narayanan, G Sathiya; Rameshkumar, S;	Legume Research: An International Journal. 436.	2020
69.	Genetic diversity in bitter gourd ( <i>Momordica charantia</i> L.) under coastal ecosystem.	Waikhom Jupiter and R. Kandasamy	Plant Archives. 20 (Supplement 1): 1063-1066.	2020
70.	Studies on genetic variability in bitter gourd ( <i>Momordica charantia</i> L.) under coastal ecosystem	Waikhom Jupiter and R. Kandasamy	Plant Archives. 20 (Supplement 1): 2221-2224.	2020
71.	Correlation and path coefficient analysis among the landraces of pumpkin ( <i>Cucurbita moschata</i> Duch Ex. Poir)	Anusa, P., R. Kandasamy and E. Arivazhagan	Annals of Plant and Soil Research, 22(1): 86-91	2020
72.	Screening of vegetable soybean ecotypes in cuddalore district of tamilnadu.	Kamalakaran, S., HariPriya, K., Sudhagar, R. and Venkatesan, S.	Plant Archives. 20 (Supplement 1): 1940-1942.	2020
73.	Bio efficacy of Tetra power on growth, yield and quality attributes of brinjal ( <i>Solanum melongena</i> L.) cv Annamalai.	Elakkuvan S., R.S. Sugavanam, S. Kumar and Ramkumar	Plant Archives. 20 (Supplement 1): 3718-3720.	2020
74.	Evaluation of parents and hybrids for fruit yield and its component traits in bhendi ( <i>Abelmoschus esculentus</i> L. moench).	C. Praveen Sampath Kumar, T. Tamil Mathi, Darling B. Suji and AjishMuraleedharan	Plant Archives. 20(2): 2020 5328-5330.	2020
75.	Correlation and path analysis of yield and yield attributing traits of okra ( <i>Abelmoschus esculentus</i> L. moench).	Sri Ranganayaki S., Joshi J.L., AjishMuraleedharan, Praveen Sampathkumar C. and Ebenezer Babu Rajan R	Plant Archives. 20 (Supplement 2): 1612-1614.	2020
76.	Comparative studies on fifteen genotypes of okra ( <i>Abelmoschus esculentus</i> (L.) moench) for vegetative characters	Joshi J.L., Anbuselvam Y.A, Sri Ranganayaki S, AjishMuraleedharan, R.Ebenesar Babu Rajan and C. Praveen Sampath	Plant Archives. 20 (Supplement 2): 3773-3775.	2020

		Kumar.		
77.	Screening of okra genotypes for yellow vein mosaic virus disease using ISSR markers	Joshi, J.L, Anbuselvam, Y.A, Sri Ranganayaki, S, AjishMuraleedharan and C. Praveen Sampath Kumar.	Plant Archives. 20 (Supplement 2): 3776-3777.	2020
78.	Estimation of standard heterosis in bhendi ( <i>Abelmoschus esculentus</i> L. moench).	P. Siva Ranjani, R. Ebenezer Babu Rajan, C. Praveen Sampath Kumar, J.L. Joshi and AjishMuraleedharan.	Plant Archives. 20 (1): 2070-2072.	2020
79.	Effect of bio-stimulants on the physiological and quality parameters of bush bean ( <i>Lablab purpureus</i> )	V. M. Priyadharshini and P. Madhanakumari	Crop Research, 6(5):1376-1378.	2020
80.	Bioefficacy evaluation of <i>Serratia marcescens</i> against anthracnose ( <i>Colletotrichum lindemuthianum</i> (Sacc. & Magnus) Briosi&Cavara) disease in dolichos bean.	Papitha, K., K. Sanjeevkumar, P. Balabaskar and S. Kumar	Plant Archives. 20 (Supplement 1): 493-496.	2020
81.	Mycoparasitic effect of <i>Serratia marcescens</i> and <i>Allium sativum</i> on the anthracnose incidence, plant growth and induced systemic resistance of dolichos bean.	Papitha, K., K. Sanjeevkumar, P. Balabaskar and S. Kumar	Plant Archives. 20 (Supplement 1): 2249-2255.	2020
82.	Effect of seed and soil application with different doses of <i>Serratia marcescens</i> on plant growth and incidence of damping-off ( <i>Pythium aphanidermatum</i> (Edson) Fitz.) of brinjal under pot culture..	Subharathinam. M, K. Sanjeevkumar, P. Balabaskar and S. Kumar	Plant Archives. 20: 1889-1894.	2020
83.	Isolation, identification and molecular characterization of <i>Pythium</i> species from brinjal growing tracts of Erode and Cuddalore district	Subharathinam. M, K. Sanjeevkumar, P. Balabaskar and S. Kumar	Plant Archives. 20(1): 3411-3416.	2020
84.	Assessment of genetic variability, heritability and genetic advance in brinjal ( <i>Solanum melongena</i> L.)	K. Balasubramaniam, K. Haripriya, T.R. Bharath Kumar and R. Elangaimannan.2021	Plant Archives. 21(1):1784-1786.	2021.
85.	Genetic variability, heritability and genetic advance in bottle gourd ( <i>Lagenaria siceraria</i> (Molina) stand L.)	M. Venkatraman and K. Haripriya	Annalus of Plant and Soil Research. 23(2):	2021

	genotypes.		200-203.	
86.	Genetic variability, heritability and genetic advances in brinjal ( <i>Solanum melongena</i> L.)	D. Anbarasi and K. Haripriya	Annalus of Plant and Soil Research. 23(2): 196-199.	2021
87.	Genetic divergence in brinjal genotypes for growth and yield parameters.	D. Anbarasi and K. Haripriya	Electronic Journal of Plant Breeding. 12(4):1408-1412.	2021
88.	Genetic divergence studies in bottle gourd ( <i>Lagenaria siceraria</i> (Molina) Standl.) genotypes	M. Venkatraman and K. Haripriya	International Journal of Botany studies. 6(5):1149-1151.	2021
89.	Correlation and path coefficient analysis of some quantitative traits in brinjal ( <i>Solanum melongena</i> L.) fruit.	D. Anbarasi and K. Haripriya	Plant cell Biotechnology and Molecular Biology. 22(69& 70):53-59.	2021
90.	Evaluation of brinjal ( <i>Solanum melongena</i> L.) genotypes for various growth and yield characters.	D. Anbarasi and K. Haripriya	International Journal of Botany studies. 6(6):130-133.	2021
91.	Genetic variability, heritability and genetic advances in bottle gourd ( <i>Lagenaria siceraria</i> (Molina) Stand L.) genotypes.	M. Venkatraman and K. Haripriya	Annalus of Plant and Soil Research. 23(2):200-203.	2021
92.	Effect of organic manures and bio fortification of selenium on physiological and flowering parameters of cucumber ( <i>Cucumis sativus</i> L.)	S. FowminaSulaiha and A. Anburani	Plant Archives. 21(1):174-178.	2021
93.	Influence of organic manures and biofortification of selenium on growth, yield and selenium content of cucumber ( <i>Cucumis sativus</i> L.)	S. Fowminasulaiha and A. Anburani	Annals of Plant and Soil Research 23(1): 88-92	2021
94.	Influence of Integrated Nutrient Management on yield parameters of bitter gourd ( <i>Momordica charantia</i> . L)	M.Gayathiri and B.Porchelvi,	International Journal of emerging	2021

	cv. Pattukkottai local,		technologies and innovative research. (7): 783 - 786.	
95.	Combining ability for growth and yield characters of bhendi	S. Kalaiselvan and S. Anuja	Plant Archives, (2) 1: 1639-45	2021
96.	Combining ability for yield and quality traits in bhendi	S. Kalaiselvan and S. Anuja	Plant Archives, (2) 1: 1634-38	2021
97.	Study on Genetic divergence in yard long bean	K. Ramkumar and S. Anuja	Res. J. Agric. Sci. 12 (2): 656-658	2021
98.	Genetic variability, heritability and genetic advance studies in Yard long bean	K. Ramkumar and S. Anuja	Annals Plant Soil Res. 23 (2): 215-217	2021
99.	Effect of Nano nutrients(N,Zn,Cu) on growth of Capsicum( <i>Capsicum annum L. vargrossum</i> )	Sam Ruban, B. Gayathri., M. Nandinidevi,	Research Journal of Agricultural Sciences. 12:1742-1746.	2021
100.	Bio-efficacy of Nano nutrients (N,Zn,Cu) on yield of Capsicum ( <i>Capsicum annum L. vargrossum</i> )	Sam Ruban, B. Gayathri., C. Jeyaraj	Plant archives. 21 (2):386-390.	2021
101.	Bio-efficacy of Nano nutrients (N,Zn,Cu) on growth of Capsicum( <i>Capsicum annum L. vargrossum</i> )	B. Gayathri, J. Sam Ruban, Jayaraj,	Plant Archives. 21 (2):602-607.	2021
102.	Influence of plant growth regulators on growth and yield of sponge gourd <i>Luffa aegyptiaca</i> L. cv. Thalaivasal Local.	Kandasamy, R., E. Arivazhagan and M. Saranya	Res. J. Agri. Sci., 12: 1585-1589	2021
103.	Effect of intercropping on yield, system production efficiency and economics of tomato ( <i>Solanum lycopersicum</i> ).	Soniya, T., Kamalakannan, S., Uma maheswari, T., Sudhagar, R. and Kumar, S.	Crop Res. 56 (1 & 2):23-29.	2021
104.	Growth and yield of cabbage as influenced by different irrigation and fertigation levels.	Venkatesh, C. and Kamalakannan, S.	International Journal of Botany Studies. 6 (6):1521-1524.	2021
105.	Effect of intercropping on growth and yield of tomato ( <i>Solanum lycopersicum L.</i> ).	Soniya, T., Kamalakannan, S., Uma maheswari, T. and Sudhagar, R.	Annals of Plant and Soil Research. 23(1):36-41.	2021
106.	Influence of hydropriming on seed germination and seedling growth of bitter gourd ( <i>Momordica charantia L.</i> ).	Soniya, T and E. Arivazhagan	International J. Botany Studies. 6(6): 800-803	2021

107.	Studies on the effect of growth regulators on growth and yield of chilli ( <i>Capsicum annuum</i> L.) Cv. Sivam	Arivazhagan, E., R. Kandasamy and T. Naveena	Res. J. Agri. Sci., 12(5): 1689-1693	2021
108.	Influence of plant growth regulators on growth and yield of sponge gourd ( <i>Luffa aegyptiaca</i> L.) cv. Thalaivasal Local	Kandasamy, R., E. Arivazhagan and M. Saranya	Res. J. Agri.Sci. 12: 1585-1589	2021
109.	Effect of biostimulants on the growth of bush bean ( <i>Lablab purpureus</i> var. <i>typicus</i> ) cv. Co. (Gb) 14	P. Madhanakumari and V. M. Priyadharshini	Plant Archives. 21(1):63-65.	2021
110.	Effect of biostimulants on the yield of bush bean ( <i>Lablab purpureus</i> var. <i>typicus</i> )	V. M. Priyadharshini and P. Madhanakumari	Annals of plant and soil res., 23(1):66-70.	2021
111.	Influence of growing media on herbage yield of onion ( <i>Allium cepa</i> L.) microgreens	V. M. Priyadharshini and P. Madhanakumari	Int. J. Botany Studies. 55(5/6):262-267.	2021
112.	Augmenting yield of taro ( <i>Colocasia esculenta</i> L.) Schott) through organic manures	M. Mahalakshmi and P. Madhanakumari	Crop Res.,56(6): 323-328.	2021
113.	Mycoparasitic effect of combined application of <i>Serratia marcescens</i> and <i>Allium sativum</i> on the anthracnose ( <i>Colletotrichum lindemuthianum</i> (Sacc. & Magnus) Briosi&Cavara) incidence of Dolichos bean under <i>In vivo</i> conditions	Sanjeev Kumar, K., K Papitha, P Balabaskar, S Kumar and S Sudhasa	International Journal of Botany Studies. Vol. 6(5): 886-889.	2021
114.	Effect of integrated nutrient management practices on yield and quality of sweet potato ( <i>Ipomoea batatus</i> Lam) cv. kanjangad.	P.B.Shabitha and R.Rajeswari.	Internat. J of plant and soil sci. 33(18): 73-83.	2021
115.	Effect of Organic Inputs on Growth Parameters of Bottle Gourd [ <i>Lagenaria siceraria</i> (Mol.) Stand L.]	S. Kamalakannan, S. Meena, S. Madhavan, J. Nambi, S. Kumar and R. Sudhagar	Research Journal of Agricultural Sciences. (2022) 13: 222-224.	2022
116.	Augmentation of physiological and quality parameters of taro ( <i>Colocasia esculenta</i> L.) Schott) through organic manures	M. Mahalakshmi and P. Madhanakumari	Annals of plant and soil res. 24(1):158-161.	2022

#### Workshop/Symposium/Webinars organised (2017-2022)

S.No	Title of the Programme	Name of the Faculty	Date
1.	Workshop on Roof Garden	Dr. R. Sudhagar Dr. S. Venkatesan Dr. T. Uma Maheswari	2 <sup>nd</sup> & 3 <sup>rd</sup> February 2018

2.	National workshop on BHUVAN Geo portal for Precision farming	Dr. S. Venkatesan Dr. R. Sudhagar	8 <sup>th</sup> January 2019
3.	National symposium on Horticulture in the vanguard of climate change and urban environment	Dr. R. Ramesh Kumar Dr.D.Dhanasekaran Dr.CT.Sathappan	7 <sup>th</sup> & 8 <sup>th</sup> February 2019
4.	Webinar on Recent advances in the improvement of cucurbitaceous vegetables and Bhendi	Dr.S.Kamalakannan	11 <sup>th</sup> & 16 <sup>th</sup> July 2020
5	Webinar on Emerging trends in temperate fruit production	Dr.CT.Sathappan	12 <sup>th</sup> & 13 <sup>th</sup> July 2020
6	Webinar on Strategies to combat recent challenges in Floriculture Industry	Dr.S.Rameshkumar Dr.D.Dhanasekaran	18 <sup>th</sup> July 2020
7	Webinar on Landscape tools for smart societies	Dr.S.Rameshkumar Dr.D.Dhanasekaran	19 <sup>th</sup> July 2020
8	Webinar on New normal in floriculture	Dr.S.Rameshkumar Dr.D.Dhanasekaran	23 <sup>rd</sup> July 2020
9	Webinar on Recent advances in strawberry production	Dr.CT.Sathappan Dr.D.Dhanasekaran	24 <sup>th</sup> July 2020
10	Webinar on Research Advances in kiwi production	Dr.CT.Sathappan Dr.D.Dhanasekaran	31 <sup>st</sup> July 2020
11	Webinar on Health foods from fruits and vegetables - An Imminent need	Dr.CT.Sathappan Dr.D.Dhanasekaran	1 <sup>st</sup> August 2020
12	Webinar on Banana - Fruit for Nutritional and livelihood security	Dr.R.Sendhilmathan Dr.S.Sivasankar	2 <sup>nd</sup> August 2020
13	Webinar on Annona - The super fruit of 21 <sup>st</sup> century	Dr.R.Kandasamy Dr.E.Arivazhagan	3 <sup>rd</sup> August 2020
14	Webinar on Nutraceuticals from flower crops	Dr.S.Rameshkumar Dr.N.Dhamodharan	4 <sup>th</sup> August 2020

15	Webinar on Flower seed production challenges and opportunities	Dr.S.Rameshkumar Dr.D.Dhanasekaran Dr.CT.Sathappan	5 <sup>th</sup> August 2020
16	International workshop on Naunces in Floriculture industry ( <a href="#">Webinar 1.pdf</a> )	Dr. S.Sivasankar	6 <sup>th</sup> September 2021
17	International workshop on Naunces in landscape industry ( <a href="#">Webinar2.pdf</a> )	Dr. S.Rameshkumar Dr.CT.Sathappan Dr.D.Dhanasekaran	13 <sup>th</sup> September 2021
18	International workshop on Naunces in Post harvest horticulture ( <a href="#">Webinar 3.pdf</a> )	Dr.CT.Sathappan Dr. J.Padmanaban Dr.D.Dhanasekaran	20 <sup>th</sup> September 2021
19	National work shop - Emerging trends in production and processing of guava ( <a href="#">Webinar 4.pdf</a> )	Dr. S.Kamalakannan Dr. S. Kumar	25 <sup>th</sup> September 2021
20	International workshop - Opportunities and challenges in horticultural technologies ( <a href="#">Webinar 5.pdf</a> )	Dr. A.Anburani Dr. C. Muruganandam Mr. S. Elakkuvan Dr. R. Rajeswari	30 <sup>th</sup> September 2021
21	International Virtual conference - Startups in Horticulture Industry (SUHI - 21) ( <a href="#">Webinar 6.pdf</a> )	Dr. R.Sendhinathan Dr. M. Rajkumar Dr. P. Madhana Kumari	20 <sup>th</sup> October 2021
22	International Virtual Workshop - Scope and opportunities in plantation crops (SOPC - 21) ( <a href="#">Webinar 7.pdf</a> )	Dr. R.Kandasamy Dr. E. Arivazhagan Dr. A. R. Lenin	27 <sup>th</sup> October 2021
23	International Virtual conference - Innovative trends in horticulture production (ITHP - 21) ( <a href="#">Webinar 8.pdf</a> )	Dr. R.Suresh Kumar Dr. T.R. Barathkumar Dr. T. Uma Maheswari	29 <sup>th</sup> October 2021
24	National Virtual workshop - Procurement,	Dr. R.Sudhagar	16 <sup>th</sup> November

	processing and product promotion in horticulture crops ( <a href="#">Webinar 9.pdf</a> )	Dr. S. Venkatesan Dr. M. Gayathiri	2021
25	International Virtual conference - Healthy horticulture for wealthy environment (file:///H:/webinar/Webinar%2010.pdf)	Dr. S.Kamalakaran Dr. S. Kumar Dr. R. Rajeswari	18 <sup>th</sup> November 2021

#### Awards/Recognitions from 2017 to 2022

S. No	Name of the faculty	Awards
1.	Dr. K. Haripriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	1. Subject matter Specialist in selection committee, ICAR-National Research Centre for Banana Trichirapalli. 09.04.2021 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 22.06.2021 3. External expert member, expert committee for restructuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021 4. Board of studies in Agriculture - (GRI), Gandhigram Rural Institute, Gandhigram, Dindigul. 2021-2024 5. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019
3	Dr. A. Anburani	1. APSI Honours award by Academy in Plant Sciences, India. 2. Best oral presentation award at international symposia, Hyderabad.
4	Dr. S. Anuja	1. Received best paper award, Annamalai University. 2. Received certificate of achievement award.
5	Dr. S. Rameshkumar	1. Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu
6	Dr. J. Samruban	1. 1 <sup>st</sup> poster presentation award in 9 <sup>th</sup> Indian Horticulture congress 2021, Kanpur
7	Dr. R. Kandasamy	1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and

		Biological Sciences held at Puducherry
8	Dr. CT. Sathappan	1. Fellow of National Gladiolus Trust.
9	Dr. S. Venkatesan	<p>1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Utterpredesh, India. On the occasion of International Conference on GRISAAS- 2019</p> <p>2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Utterpredesh, India. On the occasion of International Conference on GRISAAS- 2019.</p> <p>3. Best Horticulturalist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India.</p> <p>At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>4. Best oral presentation Award- 3<sup>rd</sup> National Conference on Promoting &amp; Reinvigorating Agri - Horti, Technological Innovations (24<sup>th</sup>&amp; 25<sup>th</sup> December, 2019) held at Danbad Jharkhand, India.</p> <p>5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment(VOICE) &amp; Pondicherry Institute of Agricultural Sciences( PIAS ) in Association with Murray State University, USA. Supported by Centre for Environment &amp; Agricultural Development(CEAD)- 2020</p> <p>6. Excellence in Research award-3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>8. Best Horticulturist Award- Agricultural&amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to</p>

		<p>Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</p> <p>10. Best Poster Award- Two days DST PURSE - II Sponsored National conference on “Transforming Agricultural Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 &amp; 22, 2022.</p>
10	Dr. T. R. Barath Kumar	<ol style="list-style-type: none"> <li>1. PRAGATI, Organizing Committee, Dhanbad, Jharkhand, India. 2017</li> <li>2. TECHSEAR, Organizing Committee, ICAR-IIRR- Rajendranagar, Hyderabad, India. 2017</li> <li>3. Endling conferences society, ICFA-2018, Pune, Maharashtra, India. 2018</li> <li>4. NSPOFED, Organizing Committee, School of agriculture and animal sciences, Gandhigram rural institute-Deemed to be University, Gandhigram, Dindigul, Tamil Nadu, India. 2019.</li> <li>5. Astha foundation (Meerut,U.P) &amp; Organizing Committee GRISAAS, ICAR, NAARM, Rajendranagar, Hyderabad, Telangana, India. 2019.</li> <li>6. ICEACBS, Organizing Committee, VOICE, PIAS, Murray State University (USA) and CEAD Puducherry, India. 2020.</li> <li>7. “3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)” Ranchi, Jharkhand. 2022</li> <li>8. “3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)” Ranchi, Jharkhand. 2022</li> </ol>
11	Dr. R. Sendhilynathan	<ol style="list-style-type: none"> <li>1. Awarded Best poster presentation. in 21<sup>st</sup> century (NSPOFED -in 21<sup>st</sup> century. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of agriculture and animal sciences, Gandhigram Rural Institute, Dindigul.</li> <li>2. Excellence in Research award for outstanding contribution in the field of “Floriculture and landscape gardening” at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019</b> at ICAR-</li> </ol>

		National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India. 3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.
12	Dr. S. Madhavan	1. Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources
13	Dr. P. Madhana Kumari	1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry 2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.
14	Dr. T. Uma Maheswari	1. Best oral presentation award- AIASA, 2020 2. Best women scientist award- ICEACBS, Puducherry, 2020
15	Dr. D. Dhanasekarn	1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018) 2. Best Oral Presentation IInd Prize, NABS Conference, Pondicherry (2019) 3. Young Scientist Award, National Gladiolus Trust (2020) 4. Best Oral Presentation, IIIrd Prize, First NABS (2021) 5. Best Oral Presentation IInd Prize, 7th National Youth Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA, TNAU & ICAR, Coimbatore, 24-25 March, 2022
16	Dr. S. Kumar	1. Best oral presentation award- 3 <sup>rd</sup> ICFAI, Jharkhand. 2. Excellence in teaching award- ICEACBS, Puducherry, 2020
17	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
18	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry
19	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy – 2019. Thangavur. 2. Best faculty award in horticulture – CNRTSPA 2019-William research award, Kanyakumari

### Abroad Visits

S. No	Name of the Faculty	Country visited & Year	Purpose of visit
1.	Dr. R. Suresh Kumar	Thailand (2019)	International Conference of Food Agriculture and Innovation (ICFAI)
2.	Dr. J. Padmanaban	Switzerland (2017) Italy (2018) France (2018)	Academy collaboration with Tamil Education Development Council (TEDC).

### Details of Project (2017-2022)

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Type	Funding Agency
1.	2019-2021	Dr. P. Karuppaiah (PI)	Doubling the farmers income through protected cultivation technology - An economic evaluation study in Tamil Nadu.	8.0	Govt.	Indian Council of Social Science Research
2.	2017-2018	Dr. S. Rameshkumar (PI)	As PI : Evaluation of Picoxystrobin 22.52% w/w SC against Powdery mildew and Downy mildew of Grapes	1.50	Non-Govt.	M/S. Bharat Rasayan
3.	2017-2019	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	4.42	Non-Govt.	M/S. T Stanes & Co
4.	2018-2020	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Effect of Active ORG on the nutrient availability, growth, metabolism and yield of <i>Lycopersicon esculentum</i> Mill.	1.36	Non-Govt.	M/S. T Stanes & Co
5.	2021-2022	Dr. S. Baradhan (PI) Dr. S. Rameshkumar	As Co-PI: Evaluation of bio	1.56	Non-Govt	M/S. T Stanes & Co

		(Co-PI)	efficacy of Dr.ROOT on the yield of Onion –PI			
6.	2021-2022	Dr. S. Rameshkumar (PI)	As PI : Technology Dissemination Project for “Tree transplantation in Thenkasi to Thirunelvel Highway Extension Site”	1.18	Non-Govt	P & C Projects (P) Ltd.
7.	2018-2019	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Bio – efficacy of Nano nutrients on growth and yield of capsicum	3.88	Co-op. Govt.	IFFCO, Chennai
8.	2020-2023	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Effect of Nano DAP on vegetable cowpea	4.88	Co-op. Govt.	IFFCO, Chennai
9.	2019-20	Dr. M. Rajkumar (PI) Dr. J. Sam Ruban (Co-PI)	Evaluation of bio-efficacy of crop tiger on Banana	2.50	Private	PEPTECH, Bioscience limited, New Delhi
10.	2022 onwards	<b>Dr. R. Kandasamy (PI), Dr. E. Arivazhagan (Co-PI) and Dr. C. Kathirvelu (Co-PI)</b>	Efficacy of Bio-stimulants, Zymgold Liquid, Armurox, Equilibrium, Terrasorb Complex and Zym gold Plus Granules with respect to yield, yield attributing factors and crop safety on tomato crop	8.82	Non. Govt	Godrej Agrovet Ltd., Mumbai
11	2017-2019	Dr. RM. Kathiresan and Dr. CT. Sathappan	As Associating scientist in “Annamalai rice+fish+poultry farming system for improving nutrition and livelihoods of small farmers in Nepal	120.00	Research and Extension	IKP-KP & USAID

12.	2018-2021	Dr.RM.Kathiresan and CT. Sathappan (Associating Scientist)	As an Associating Scientist In "Agronomic Integration of Technologies for Productivity Management and Optimal Water Use In Wetlands of Cauvery River Delta"	209.00	Govt.	DST- Mission mode
13.	2022-24	Dr. C. Kathirvelu (Principal investigator) Dr. S. Venkatesan and Dr. K. Suseendran (Co Principal investigator)	Bio- efficacy and Phytotoxicity and Compatibility of PIPL 100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crop on various growth parameters	5.52	<b>Non Govt</b>	M/S Parijat Industries Limited, New Delhi.
14.	2018-2020	<b>Dr.P.Sudhagar(PI)</b> <b>Dr.R.Sureshkumar(Co-PI)</b>	Efficacy of LAATU premium(Gibberellic acid0.001%)as plant growth regulator and yield of Tomato(Co-PI)	3.00	Pvt.	Sumitomo ChemicalsPvt.Ltd,New Delhi
15.	01.07.2018 to 30.06.2020	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy and Phytotoxicity of homobrassinolide 0.04% EC in Paddy, Groundnut and Tomato	9.00	Non Govt.	m/s Godrej Agrovet Ltd, Mumbai.
16.	July 2018 to December 2019	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio-efficacy of new herbicide clethodim 12% EC for controlling grassy weeds in cotton, onion and soyabean and its phytotoxicity effect on succeeding	7.50	Non Govt.	Deccan fine (Chemicals) India Pvt. Ltd. Hyderabad, Telengana

			crops			
17.	December 2018 to December 2021	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy toxicity evaluation of GlutosinateAmmonium 13.5% against weed flora in grapes and its effect on succeeding crops .	13.33	Non Govt.	M/S UPL.Pvt.ltd, Mumbai.
18.	January 2020 to June 2022	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio - efficacy and phytotoxicity of Flumioxazin 50 % SC against major weeds in tea and non- cropped area and its effect on succeeding crops for two seasons	5.46	Non Govt.	M/S. Sumitomo chemical India Ltd. Mumbai NON GOVT
19.	December 2019 to May 2020	Dr.M.Rajkumar - PI Dr. J. Samruban (Co-PI)	Evaluation of Bio - efficacy of growth enhance formulations and their effect on Onion, Rice and Chilli	2.27	Non Govt.	Agri solutions Pvt.Ltd. Nashik
20.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of studies on Bio-Efficacy of evaluation of the bio-stimulant- Gaxy on cotton and grape and opteine on soybean and ground nut and pilatus on tomato.	10.50	Non Govt.	M/S UPL.Pvt.Ltd. Mumbai.
21.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy of evaluation of Bio-Stimulant macarena on soybean, tomato, cotton and Brique on chilli and tomato.	10.50	Non Govt.	M/S.UPL.Pvt, Mumbai.
22.	February	Dr. R. Ramam (PI)	Bio-efficacy and	2.275	Non	M/s Jivagro Ltd.

	2022 to February 2024	Dr.M.Rajkumar (Co-PI)	phytotoxicity evaluation of SIAPTION 101 on growth, yield and quality of grapes for 2 season.		Govt.	
23.	2018 - 2020	Prof.Rm.Kathiresan (PI) Dr.J.Padmanaban (Assoc. staff)	Agronomic Integration of Technologies for productivity management & Optimal Water Use in Wetland of Cauvery 35River Delta	67.00	Govt.	DST, New Delhi
24.	2021-2022	Dr.J.Padmanaban (PI) Dr.S.Manimaran (Co-PI)	Evaluation of Bio-stimulants: Top-up Gold (Granules) / Enhancer (Liquid) in Paddy	3.75	Non Govt.	Plantgene Biological Pvt. Ltd., Trichy
25.	2021-2024	Dr.S.Kanagarajan (PI) Dr.J.Padmanaban(Co-PI)	Testing of new insecticide: Evicent 45 WG against Thrips and capsule borer in Cardamom	10.00	Non Govt.	Syngenta India Ltd., CBE
26.	October 2021 to September 2024	Dr. T. Uma Maheswari (Co-PI) Dr.R.Kanagarajan (PI)	Evaluation project: Testing of new insecticide SPID + ACET 54 WG against Tea pests	5.00	Non Govt.	M/S SYNGENTA India Ltd., Coimbatore
27.	February 2022 to July 2024	Dr. T. Uma Maheswari-PI Dr.R.Kanagarajan (Co-PI)	Effective utilization of agricultural green waste in biosolarization as an innovative approach for ecofriendly cultivation of tomato ( <i>Solanumlycopersicum l</i> )	10.13	Govt.	RUSA 2.0-R&I
28.	2022-24	Dr. S.Babu (PI) Dr. D.Dhanasekaran	Bioefficacy trail of Glyphosate 41 % SL	9.60		Crystal Crop Protection Ltd., New

		(Co-PI)	IPA Salt as a post emergence herbicide against grassy weeds, broad leaf weeds and sedges existing in the trail lot of tomato and mango orchard		Trail	Delhi
29.	2022-24	Dr. C.Kathirvelu (PI) Dr. D.Dhanasekaran (Co-PI)	Climate Resilience on Butterfly fauna of coastal areas of Tamilnadu and establishing Butterfly garden at Annamalai university Gardens	5.06	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
30.	2022-24	Dr. D.Dhanasekaran (PI) Dr. CT.Sathappan, Dr. M.Govindarajan and Dr. G.Senthilkumar	Phyto-remediation of Indoor pollution through ornamental plants with various horticultural modules for improving health and urban environment.	10.13	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
<b>Total Amount</b>				<b>57.04</b> <b>(Rupees in lakhs)</b>		

#### 6.4.3. Technical and Supporting staff

The following technical and supporting staff members in the Department are helping in academic, research and administrative activities.

Sl.No.	Sanctioned posts	Staff in place	Responsibility
1	Secretarial staff (ASO-1, Helper-2)	3	Assisting administrative work Maintenance of office files and official records
2	Technical staff (Orchard manager-1, DGS-1, and DFS-2)	4	Assisting in orchard operations, field trials, farm record maintenance, sale proceeds, supervision of labourers, execution of purchase and settlement of bills and recording of trial observations. DTP works, data processing and documentation
3	Farm workers	22	Layout of field trials and farm operations.

	/Gardeners		
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#### 6.4.4. Classrooms and Laboratories

##### I. PARTICULARS OF INSTRUCTIONAL UNITS IN THE DEPARTMENT

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)	SEATING CAPACITY
1.	HOD Room	320 sq.ft	1
2.	Office Room	240 sq.ft	4
3.	PG Class Room 1	320 sq.ft	15
4.	PG Class Room 2	640 sq.ft	40
5.	PG Class Room 3	720 sq.ft	40
6.	PG Class Room 4	420 sq.ft	15
7.	Ph.D Class Room 1	640 sq.ft	15
8.	Ph.D Class Room 2	320 sq.ft	15
9.	Laboratory (PG/Ph.D)	640 sq.ft	15
10.	Staff Room 1	320 sq.ft	4
11.	Staff Room 2	400 sq.ft	5
12.	Staff Room 3	640 sq.ft	12
13.	Staff Room 4	100 sq.ft	5
14.	Staff Room 5	120 sq.ft	5
15.	Staff Room 6	100 sq.ft	1

16.	Staff Room 7	320 sq.ft	1
17.	Staff Room 8	320 sq.ft	1
18.	Postharvest lab (UG) (Distillation unit, Dehydrator, Pulper, Sealer and Mixer machine)	1333 sq.ft	40

#### List of equipments available

S.No	Name of the Equipment	Equipment available in the department
1.	Weighing balance (0.001)	1
2.	Weighing balance (0.01)	3
3.	Weighing balance (200 g)	2
4.	Weighing balance 60 kg (30 kg)	1
5.	Distillation unit	2
6.	pH meter	4
7.	EC meter	2
8.	Hand refractometer	5
9.	Digital vernier calliper	2
10.	Deep freezer vertical (-20°C, 275 l)	1
11.	Thermocycler unit	1
12.	Gel documentation unit	1
13.	Stereo zoom microscope	1
14.	Compound microscope	4
15.	Hot air oven	1
16.	Dehydrator	2

17.	Magnetic stirrer (5 l)	3
18.	Micro wave oven (25 l)	2
19.	Refrigerator (320 l)	3
20.	Water bath with shaker (20 l)	1
21.	UV spectrophotometer	1
22.	Refrigerated centrifuge	1
23.	Vertical gel unit (dual unit max)	1
24.	Horizontal gel unit (medium)	1
25.	Power pack (small)	1
26.	Micropipette (10 $\mu^{-1}$ , 100 $\mu^{-1}$ , 200 $\mu^{-1}$ , 1000 $\mu^{-1}$ )	1
27.	Laminar air flow chamber	1
28.	Digital thermometer and hygrometer	5
29.	Autoclave (vertical) 250 l	1
30.	Nitrogen distillation unit	1
31.	Air conditioner (2 tonnes)	4
32.	Online UPS (10 volts)	1
33.	Digital camera (14 mph)	1
34.	Vortex	1
35.	Hot plate	2
36.	Soxhlet Apparatus	2

## II. PARTICULARS OF INSTRUCTIONAL UNITS IN ORCHARD

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Orchard	5.66 hectare

2	Shade house	1650 sq.ft
3	Nursery	3634 sq.ft
4	UG practical class Room-III	1196 sq.ft
5	UG practical class Room-IV	1196 sq.ft
6	Class Room 1 (UG)	560 sq.ft
7	Field lab (PG/Ph.D)	380 sq.ft
8	Display / UG class room-2	380 sq.ft
9	Farm manager office	200 sq.ft
10	Tractor Shed	380 sq.ft
11	Store room	936 sq.ft
12	Implement shed	216 sq.ft
13	Threshing yard	900 sq.ft
14	Seed processing and storage unit	125 sq.ft
15	Farm fencing	1.05 km

III. PARTICULARS OF INSTRUCTIONAL UNITS IN FLORICULTURE AND MEDICINAL PLANTS AREA

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Floriculture and medicinal plants Unit	1.41 hectare
2	Vermicompost shed	450 sq.ft
3	NVP house 1	418 sq.ft

4	NVP house 2	418 sq.ft
5	NVP house 3	1071 sq.ft
6	Shade house	150 sq.ft
7	Mist chamber	216 sq.ft
8	Poly house	2640 sq.ft

#### 6.4.5. Conduct of Practicals and Hands-on-Training

##### Hands-on-Training

Hands- on -training is given to students during classes:

- Identification of crops, method demonstrations on various aspects of propagation.
- Components of integrated farming system in vegetable crop cultivation is given importance.
- Value addition of harvested produce.
- Preparation of organic sprays as bio stimulants.
- The students are given exposure on various aspects of biotechnology.
- Training to diagnose cultivation problems in flower crops.
- Elaborate practice on systematics of vegetable crops is given.
- Protected cultivation aspects are imparted.

Field visits are arranged for the students to

- Various research stations for acquainting knowledge on different crop management aspects, germplasm conservation and various research activities.
- Small scale Industries for value addition in vegetable crops.
- Organic product outlets to learn about organic certification and market price.
- Start up entrepreneurs on various horticultural aspects.
- Central institutions on various aspects related to horticulture.
- Progressive farmers' fields to learn about the adoption of technologies.
- Seed industries.

#### 6.4.6. Supervision of students in PG programme

Each post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise of a Major Adviser (Chairman) and two members. Of the two members, one will be from the same Department and the other in the related field from the other Departments of the Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The Chairman in consultation with the

Head of the Department will nominate the other two members. The duties of advisory committee are as follows.

1. Guiding students in drawing the outline of research work
2. Guidance throughout the programme of study of the students.
3. Evaluation of research and seminar credits.
4. Correction and finalization of thesis draft.
5. Conduct of qualifying and final Viva-Voce examination.
6. The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
7. Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.

#### **Students Teacher Ratio**

<b>S.No</b>	<b>Number of recognized Teacher for PG guidance</b>	<b>Academic year</b>	<b>Intake of students</b>	<b>Students Teacher Ratio</b>
1.	35	2017-18	10	1:3.5
2.	35	2018-19	10	1:3.5
3.	35	2019-20	7	1:5
4.	35	2020-21	9	1:3.8
5.	35	2021-22	10	1:3.8

#### **6.4.7. Feedback of stakeholders**

Constant feedback is obtained from the stakeholders as given below.

**Students:** The feedback about the curriculum and teaching methodology are obtained from the students every semester after completing the course. These comments we reviewed and considered while revising the syllabus. Department uses the feedback for enhancing the

audio-visual aids, advanced laboratory equipment's and e- journals. Apart from this the mentor-mentee system enables the teachers to obtain constant feedback from students.

**Employers, those who come for campus placements:** Based on the feedback from employers, skill development and personality development programmes are conducted in addition to regular curriculum content.

**Farmers:** Feedback is regularly obtained during Farmers Day, field visits, and field trials.

**Industries:** Quality sustenance and quality enhancement measures in curriculum development process is done by restructuring the course contents based on requirement prescribed by the industry people during our industrial visits.

**Entrepreneurs:** Based on the feedback from entrepreneurs, the contents for skill development and personality development programmes are decided and implemented.

**Govt. officials:** Feedback obtained from Government officials are included during the revision of courses for PG research programmes.

**Action taken:**

- Soft skill development training is provided to students.
- Personality development courses and technical skill programmes are organised.
- Students are taught to prepare for competitive examinations like NET and SRF.

**6.4.8. Student intake and attrition in the programme for last five years (M. Sc. in Vegetable science)**

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
10	10	7	9	10	--	--	--	--	--

**List of M.Sc. (Hort.) vegetable science theses – submitted from 2017 to 2022**

S.No	Name of the Guide	Name of the Student	Year of Submission	Title of the research
1.	Dr.K.Sekar	R.Devanathan	2017	Effect of organic fertigation on growth and yield of bell pepper ( <i>Capsicum annum</i> var. <i>grossum</i> Sendt.) cv.Indra
2.	Dr.K.Haripriya Professor	T.Dharani	2017	Studies on Organic Nutrient Management for Knolkhol ( <i>Brassica oleracea</i> var. <i>gongy lodes</i> )
3.	Dr.S.Anuja	K.Ramkumar	2017	Effect of different planting Density on Leaf Production of Moringa cv.PKM-1( <i>Moringa pterigosperma</i> Goertn.)
4.	Dr.K.Sha	B.Sathivel	2017	Studies on Integrated Nutrient Management in Brinjal ( <i>Solanum</i>

				<i>melogena.L)</i> Cv.Orathur Local
5	Dr.P.Madhanakumari	B.Shanmuga Priya	2017	Yield maximization of gherkin ( <i>Cucumis anguria.L</i> )by using plant Growth regulators
6	Dr.R.Kandasamy	S.Sharmila Bharathi	2017	Studies on genetic diversity in bottle gourd ( <i>Lagenaria siceraria (mol.) stand</i> )
7	Dr.K.Sekar	Akila, V	2018	Effect of grafting on growth and yield of brinjal
8	Dr.K.Haripriya	Anbarasi, D	2018	Effect of organic nutrient management in aggregatum onion
9	Dr. A. Anburani	Anu.P.Mani	2018	Effect of soil and foliar application of organic nutrients in radish
10	Dr. S. Anuja	Arivanantham,P	2018	Effect of different spacing and pruning height on leaf production of moringa cv.PKM-1
11	Dr. R. Suresh Kumar	Deepa, S	2018	Productivity enhancement of bitter gourd ( <i>Momordica charantia L</i> ) ecotype mithipagal through organic nutrient management practices
12	Dr. E. Arivazhagan	Kavitha, A	2018	Studies on the effect of plant growth regulators on brinjal
13	Dr. K. Sha	Lavanya, M	2018	Effect of plant growth regulators and micro nutrients on growth and yield of ridge gourd
14	Dr.P. Madhana Kumari	Parthiban, S	2018	Effect of biostimulants on growth and yield of carrot
15	Dr. R.Kandasamy	Sreevidya, S	2018	Influence of plant growth regulators on growth and yield parameters in culinary melon
16	Dr. S.Kamalakaran	Sureshkumar, S	2018	Effect of fertigation and mulching in augmenting the yield of bhendi
17	Dr.K.Sekar	P.Surendar	2019	Effect of plant growth regulators on growth and yield of Chilli ( <i>Capsicum annum L.</i> ) cv.K2
18	Dr.K.Haripriya	S.A.Sindubhara dhi	2019	Effect of organic inputs and mulching on growth and yield of roselle ( <i>Hibiscus sabdariffa L</i> )
19	Dr. A. Anburani	G.Sajiv	2019	Effect of various doses of nitrogen and potassium on growth and yield of brinjal hybrid under soilless culture ( <i>Solanum melongena</i> )

20	Dr. S. Anuja	M.R.Priya	2019	Effect of foliar application of biostimulants on growth and yield of brinjal ( <i>Solanum molongova</i> .L)
21	Dr. R. Suresh Kumar	N.Pallavi	2019	Effect of organic nutrients on growth and leaf yield of moringa ( <i>Moringa oleifera</i> ) cv. PKM -1
22	Dr. E. Arivazhagan	S.Maniram	2019	Effect of organic inputs on the growth, yield and quality of tomato ( <i>Solanum lycopersicum</i> )
23	Dr. K. Sha	GnanasekaranS eerangan	2019	Effect of organic nutrients on growth and yield of bhendi ( <i>Abelmoschus esculentus</i> L.Moench) cv.CO4
24	Dr.P. Madhana Kumari	S.Eswaramoorth y	2019	Impact of organic manures on yield of capsicum ( <i>Capsicum annum</i> .L) under protected cultivation
25	Dr. R.Kandasamy	P.Anusa	2019	Studies on genetic diversity of pumpkin ( <i>Cucurbita moschata</i> )
26	Dr.K.Haripriya	Balasubramaniy am,K.	2020	Genetic diversity in brinjal ( <i>Solanum melongena</i> )
27	Dr. A. Anburani	FowminaSulaih a,S.	2020	Effect of organic manures and selenium on growth, yield and quality of cucumber.
28	Dr.J.Samruban	Gayathri,B.	2020	Bio efficacy of nano nutrients (nano N, Zn and Cu) on growth and yield of <i>Capsicum annum</i>
29	Dr. S. Anuja	Kalaiselvan, S.	2020	Line x tester analysis in bhendi
30	Dr. E. Arivazhagan	Naveena,T.	2020	Influence of plant growth regulators on growth, yield and quality of chillies ( <i>Capsicum annum</i> )
31	Dr. K. Sha	Prasanth, A.	2020	Effect of intercropping on growth and yield of moringa
32	Dr.P. Madhanakumari	Priyadarshini,V. M.	2020	Effect of biostimulants on the growth and yield of bush bean ( <i>Lablabpurpureus var. typicus</i> )
33	Dr. R.Kandasamy	Saranya ,M.	2020	Influence of plant growth regulators on growth and yield of sponge gourd ( <i>Luffa aegyptica</i> )
34	Dr. S.Kamalakaran	Soniya , T.	2020	Effect of intercropping on growth and yield of tomato
35	Dr. R.Arulananth	Tamilarasan, K.	2020	Nutrient Management studies in cluster bean to augment yield and quality ( <i>Cyanopsistetragonoloba</i> (L.))
36	Dr. E. Arivazhagan	P.Arun	2021	Studies on the effect of plant growth

				regulators on growth, flowering and yield in bittergourd ( <i>Momordica charantia</i> L)
37	Dr. K. Sha	A.P.Gokul	2021	Effect of plant growth regulators and integrated nutrient management in elephant foot yam
38	Dr.P. Madhana Kumari	M.Mahalakshmi	2021	Augmentation of growth and yield of Taro ( <i>Colacassia esculenta</i> L. Schott.) Through organic manures
39	Dr. S.Kamalakkanan	S.Meena	2021	Effect of organic inputs on the growth and yield of bottle gourd ( <i>Lagenaria siceraria</i> (Mol) Standi)
40	Dr. M. Gayathiri	B.Porchelvi	2021	Influence of intergraded nutrient management on growth and yield of bitter gourd ( <i>Momordica charantia</i> L) cv. Pattukottai local
41	Dr. R.Arulananth	S.Sanathanam	2021	Studies on nutrient management for growth and yield enhancement in aggregatum onion ( <i>Allium cepa</i> var. <i>aggregatum</i> L.)
42	Dr.R.Rajeswari	P.B. Shabitha	2021	Effect of integrated nutrient management practices on growth and yield of sweet potato ( <i>Ipomoea batatas</i> L.) cv. Kanjangad
43	Dr.K.Haripriya	Aashikajothi.P	2022	Stability analysis for yield in yard long bean ( <i>Vigna unguiculata</i> spp. <i>Sesquipedalis</i> L.)
44	Dr.A.Anburani	Bhuvaneshwari. S	2022	Effect of soil and foliar application of organic nutrients on growth and yields of Bottle Gourd ( <i>Lagenaria siceraria</i> (Molina)Standl.)
45	Dr.S.Anuja	Gokilapriya.D	2022	Studies on diallel analysis in Bhendi ( <i>Abelmoschus esculentus</i> (L.) Moench)
46	R.Kandasamy	Kalaivani.A	2022	Influence of plant growth regulators on growth and yield of Ashgourd ( <i>Benincasa hispida</i> L.) cv.Vedasandur Local
47	Dr.S.Kamalakkanan	Karthi.K	2022	Effect of organic inputs along with RDF on the growth and yield of Cassava ( <i>Manihotesculenta</i> Crantz.)
48	Dr.R.Sureshkumar	Naveen.V	2022	Effect of mulching and organic nutrients on growth and yield of bottle gourd [ <i>Lagenaria siceraria</i>

				(Molina).] cv.Punjab Komal
49	E.Arivazhagan	Nithish,K	2022	Effect of plant growth regulators on growth and yield of Radish ( <i>Raphanus sativus</i> L.)
50	Mr.K.Sha	Sivasuriya S	2022	Integrated nutrient management on sweetpotato ( <i>Ipomea batatas</i> )
51	Dr.P.Madhanakumari	Suriya.R	2022	Yield maximization in Snake gourd ( <i>Trichosanthes cucumerina</i> L.) with organic manures and biostimulants.
52	Dr.R.Arulananth	Tamilvanam.M	2022	Effect of pruning season and growth retardants on off-season production on annual Moringa ( <i>Moringa olifera</i> Lam.) cv. PKM-1

#### Employment Details of PG students

Name of the Student	Academic year of completion of degree	Name of the institute if joined in Ph.D.	Employment details			
			Central Govt.	State Govt.	Name of the Company	Entrepreneur
Ms.M.Lavanya	2018	-	-	Assistant Director of Horticulture, Govt. Of Tamil Nadu	-	-
Ms.S. Parthiban	2018	-	-	Assistant Agriculture Officer, Govt. Of Tamil Nadu	-	-
Ms.R.Manikandan	2019	-	-	Horticulture Officer, Govt. of Tamil Nadu	-	-
Mr.S.Eswaramoorthy	2019	-	-	-	-	Horticulture consultancy,

						Tirunelveli
Ms.M.R.Priya	2019	-	-	Senior Research Fellow, Centre of Excellence for Vegetables , Reddiyarc hatram. Dindigal	-	-

#### NET Qualified details

Vegetable Science				
S.NO.	Academic Year	Name of the Candidate	Roll number	Year of passing
1.	2018-19	N. Karthika	1081402787	2018
2.	2018-19	S. Maniram	4091410772	2021
3.	2020-21	V.M. Priyadharshini	4091410130	2022
4.	2020-21	D. Anbarasi	4091411788	2021

#### Salient research achievements of the Department

- Research work carried out in the vegetables namely bhendi, bottle gourd, capsicum, carrot, cassava, taro and sweet potato revealed that the usage of organic manures (vermicompost or poultry manure) along with recommended dose of fertilizers were found to enhance the yield with sustainable soil health. To supplement the use of farm yard manure which has become scarce, vermicompost and poultry manure can be used.
- In addition to organic manures, biostimulants (panchakavya and sea weed extract) which are the new group of bioregulators were applied. It promoted the growth and yield of vegetable crops. These bio stimulants are of organic origin which helped in sustaining the yield and fertility of soil.
- Application of panchakavya @ 3% or sea weed extract @ 3ml per litre was found to improve the yield of vegetables.
- Application of zinc sulphate along with zinc solubilising bacteria and VAM was found to increase the yield in bhendi.
- Application of eighty per cent recommended dose of fertilizer through fertigation along with polyethylene mulching was found to enhance the yield of bhendi.

- Among the various organic mulches, application of sugarcane trash along with vermicompost or poultry manure increase the yield in roselle.
- Integrated nutrient management in brinjal, sweet potato, taro, carrot, capsicum and bitter gourd were found to be an effective nutrient management practice for sustaining yield.
- Application of plant growth regulators in cucurbitaceous vegetables *viz.*, bitter gourd, ridge gourd, gherkin and culinary melon had narrowed down the sex ratio and improved the production of female flowers which resulted in increased productivity.
- Intercropping in tomato with small onion was found to be the best with 125 per cent recommended dose of fertilizer for tomato.
- The organic nutrient requirement, pruning height and spacing for leaf production in annual moringa was standardized.

#### **6.4.9. ICT Application in Curricula Delivery**

A smart class room facility, six computers with internet facility and two LCD projectors and smart TV help in making the teaching enabled with ICT in the Department. Video facilities available in Department help us to cast videos on precision farming practices pertaining to floriculture, nursery and postharvest value addition. Software's on Archi CAD (AUTO CAD/smart draw) and 3 D Landcad is used to demonstrate to the students for the Ornamental and Landscape Gardening course. PPTs are designed and updated regularly to teach the syllabus content in a way to make the students understand better. Mobile Apps for Landscape designing, sound pollution monitoring and Google class room are used and students are exposed to these Apps to keep them aware of the current trends. Site analysis and measuring tools available on Google Earth is exposed to the students for learning landscaping in a smart way.



RADISH TRIAL PLOT



WINGED BEAN FIELD



OUTREACH PROGRAMME



COWPEA FIELD



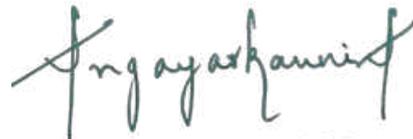
EDUCATIONAL TOUR

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented college-Wise.

6.4.11 Since the accreditation of Programmes is related to the all India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12 Certificate (Applicable when SSR is submitted for Programme)

I, the Dean, Faculty of Agriculture, Annamalai University hereby certify that the information contained in the section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



**DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY**

Signature of Dean of the College with Date & seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Hort.) Floriculture and Landscaping

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)



**FACULTY OF AGRICULTURE**

**Department of Horticulture**

**SELF STUDY REPORT OF**

**M.SC. (HORT.) FLORICULTURE AND  
LANDSCAPING**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## Self-Study Report

### 6.4. Name of the Programme: M.Sc. (Hort.) Floriculture and Landscaping

Offered by: Department of Horticulture

#### 6.4.1 Brief History

The Division of Horticulture came into existence in 1958 with an objective of offering horticultural subjects to B.Sc. (Ag.) graduates. In the early stages, the Division was attached with the Department of Agricultural Botany. Under the leadership of renowned Horticulturist of International repute, Dr. S. Krishnamoorthy, a pioneering post graduate course in Horticulture was introduced for the first time in South India in 1958-59. With further expansion, the erstwhile Division of Horticulture functioning from 1958-59 onwards was upgraded as a Department in 1991 with the revival of a full fledged post graduate programme - M.Sc. (Ag.) in Horticulture and later on it was renamed as M.Sc. (Hort.) in 2011. However, in tune with the guidelines of ICAR new regulations to offer specialized degrees *viz.*, Fruit Science, Vegetable Science, Floriculture and Landscape Gardening and Plantation, Spices, Medicinal and Aromatic Crops were introduced from the year 2012 onwards.

Historical Itinerary	Year/Period
Division of Horticulture	1958
First PG Programme in Horticulture	1958-59
Upgraded as a Department	1991
Post graduate Programme M.Sc. (Ag.) in Horticulture	1991
M.Sc. (Hort.) in Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2012 -2013
M.Sc. (Hort.) Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2022-2023 onwards

The M.Sc. (Hort.) Floriculture and Landscaping has 70 credits in four semesters which includes 20 credits for major courses, 08 credits for minor courses, 06 credits for supporting courses, 05 credits for common courses, 01 credit for seminar and 30 credits for master's thesis research. In addition to the 70 credits, 05 contact hours for non-credit compulsory courses has been included to improve the research acumen and employability of the students. Revision of the curricula was carried out in the academic year 2022 -2023 in concurrence with latest recommendations from BSMA and 5<sup>th</sup> Deans Committee of ICAR.

#### Distribution Pattern of Courses and Credit (For Research Program)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Research	Credit Load
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14
Credit Load	20	8	6	5	1	30	70

**Distribution Pattern of Courses and Credit (For IDEA Program)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	IDEA	Credit Load
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10 +10	22
Credit Load	20	8	6	5	1	30	70

**Distribution Pattern of Courses and Credit M.Sc. (Hort.) Floriculture and Landscaping**

S.no.	Course Code	Course Title	Credit Hours
<b>Major Courses</b>			
1	FLA 501*	Systematics of Ornamental Plants	3(2+1)
2	FLA 502*	Breeding of Ornamental Plants	3(2+1)
3	FLA 503*	Commercial Production of Cut Flowers	3(2+1)
4	FLA 504*	Commercial Production of Loose Flowers	3(2+1)
5	FLA 505*	Ornamental Gardening and Landscaping	3(2+1)
6	FLA 506	Indoor Plants and Interiorscaping	2(1+1)
7	FLA 508	Turf Grass Management	3(2+1)
8	FLA 510	Protected Cultivation of Flower Crops	3(2+1)
9	FLA 511	CAD for Landscaping	3(1+2)
<b>Minor Courses</b>			
10	FLA 509	Value Addition in Floriculture	3(2+1)
11	FLA 507	Nursery Management in Ornamental Plants	3(2+1)
12	FLA 512	Seed Production in Flower Crops	2(1+1)
<b>Common Courses</b>			
13	STA 501	Statistical Methods for Applied Sciences	3(2+1)
14	COM 501	Information Technology in Agriculture	3(2+1)
<b>Supporting courses</b>			
15	PGS 501	Agricultural Research, Research Ethics and Rural Development Programmes	1(1+0)
16	PGS 502	Technical Writing and Communications Skills	1(1+0)
17	PGS 503	Basic Concepts in Laboratory Techniques	1(0+1)
18	PGS 504	Library and Information Services	1(1+0)
19	PGS 505	Intellectual Property and its Management in Agriculture	1(1+0)
<b>Non Gradual Courses</b>			
20	NGC 511	Disaster Management (Contact hour: 1)	-
21	NGC 512	Constitution of India (Contact hour: 1)	-
22	FLA 591	Master's Seminar	1(0+1)
23	FLA 599	Research	30

**SEMESTER WISE DISTRIBUTION OF COURSES (RESEARCH/IDEA)**

Sl. No.	Course Title	Credit hours
<b>I Semester</b>		
1.	Major Courses	8
2.	Supporting Courses	
	STA 501 - Statistical Methods for Applied Sciences	3
	COM 501 - Information Technology in Agriculture	3
3.	Common Courses	
	PGS 501 - Agricultural research, research ethics and rural development programmes	1
	PGS 502 - Technical writing and communications skills	1
4.	FLA 599 Research /IDEA	2/-
	<b>Total</b>	<b>18/16</b>
<b>II Semester</b>		
1.	Major Courses	12
2.	Common Courses	
	PGS 503 - Basic Concepts in Laboratory Techniques	1
	PGS 504 - Library and information services	1
3.	FLA 599 Research/ IDEA	6/-
	<b>Total</b>	<b>20/14</b>
<b>III Semester</b>		
1.	Minor courses	6
2.	Common course	
	PGS 505 - Intellectual property and its management in agriculture	1
3.	Disaster Management (1+ 0)	-
4.	Constitution of India (Contact hour 1+ 0)	-
5.	FLA 591 Seminar	1
6.	FLA 599 Research /IDEA	10/10
7.	Value Added Course (3+0) ( <a href="https://annamalaiuniversity.ac.in/studport/value_added_crs.php">https://annamalaiuniversity.ac.in/studport/value_added_crs.php</a> )	-
	<b>Total</b>	<b>18/18</b>
<b>IV Semester</b>		
1.	Minor course	2

2.	FLA 599 Research	12 (8+4)/20
	<b>Total</b>	<b>14/22</b>

### Vision

- Increasing employability of graduates in Floriculture and Landscaping to meet the industrial demand and societal need by providing updated syllabus content on par with National and global standards.
- Disseminating Floriculture and Landscaping technology to farming community.

### Strategic plan to achieve Vision and Goal

Goal	Programme Objectives	Implementation Plan	Performance Metrics /Timeline
Quality education	To prepare students to generate knowledge on management, production and strategies leading to the development of research philosophies, concepts and methodologies.	Classes are handled by experienced Faculty through class room teaching and practical demonstration.	Periodical class tests, practical assignments, quiz and end term exams are conducted to evaluate the performance of students.
Employability and National standards	To inculcate ability in students to critically analyze and comprehend the knowledge gained from a range of scientific data to approach cultivation problems and reach appropriate solutions in the area of their specialization.	The students are guided to collect literature, identify gaps and propose research problem and conduct research on it.  Timely revision of curriculum according to BSMA and ICAR Deans committee.	The advisory committee supervises and evaluates the students during end of every semester.
Professional ethics	To enhance capability of students to adhere to professional ethics and responsibilities related to horticultural practices.	The curriculum includes field / lab research activities making the students aware of professional norms and resource usage in cautious manner.	The student is continuously monitored by periodical review of work done in field, use of agricultural inputs, recording timely observations and verification of data by advisory committee.

Technology transfer	To facilitate exposure of students to function effectively as an individual and as a member or leader in diverse teams or interdisciplinary environment.	The interdisciplinary research approach is encouraged in making the students work in a diverse environment.	The activity of students in related research labs is evaluated by the major supervisor from time to time.
Lifelong learning	To engage the students in life-long learning and professional development through self- directed studies.	The programme includes compulsory courses along with research, seminars and publication of research work.	The continuous evaluation of courses is done through theory and practical exams while research is evaluated based on research progress in each semester and thesis submission at the end of the degree.

### Accomplishments

The Department of Horticulture is a pioneer institute which offered post graduate Horticultural programme in South India during 1958-59. The Horticulturists of international repute like Dr. S. Krishnamoorthy, Prof. P. Kalyanasundaram and Dr. L. R. Rajasekaran have fuelled the growth of this Department in its early stage and formed the basis of its present state of existence. The Department has been imparting quality education by using updated technologies in the field of education with audio visual aids, method demonstrations and participatory approach and interactive practical experiments. **The Department was awarded with DST - FIST funds for infrastructure development. The syllabus content are updated as per suggestions by stake holders, lead organisations in agriculture and scientific experts. The students are given practical exposure in horticulture industries by hands- on - training and by study tours and industrial trainings.** The students are given counselling by the teachers for their academic improvement and future planning. Special coaching for ICAR JRF, SRF and NET examinations are provided.

The Department of Horticulture has contributed to the horticulture sector by researching upon the need based objectives in the coastal area. The location specific research outcomes are disseminated to the farmers in the coastal Tamil Nadu to propel horticultural crops in the coastal farming system. The department distributes certified seeds of "Annamalai brinjal" to the farmers. **The standardized package of practices developed for rice-fallow vegetable production, common tropical vegetables and introduction of nutritionally rich/economically feasible less known crops has been carried out. For the industrial sector stake holders, the Department is providing its research expertise by conducting product evaluation research.**

The Department is training the farmers in new technologies that are upcoming in the field of horticulture and creating awareness among the farmers about the new crops, varieties and techniques. Diagnostic services to the farmers are provided for various

production problems. Demonstration of technologies through Rural Horticultural Work Experience is done every year. Periodically workshops and seminars are conducted for the benefit of industrial stake holders, scholars and scientists.

Category	Upto 2016	Last five year period (2017-2022)
Number of Publications (Journal articles)	724	338
Number of Books	13	20
Number of Book chapters	45	232
Number of Projects Handled	21	26
Grant mobilization (Rs. in lakh)	188.48	57.04
Number of Ph.D.'s produced	43	8
Number of PGs produced	328	180
Number of Seminars/Conferences /Workshops /Webinars organized	6	25
Number of Awards/recognitions received by the Faculty	113	51
Counties visited by the Faculty. (Professional Visit)	9	9

#### 6.4.2. Faculty Strength

Presently 35 staff members are available in the Department specialized in different aspects of Horticulture.

S. No.	Sanctioned posts	Sanctioned	Filled	Vacant	Faculty Recommended by ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	6	6	-	1
2	Associate Professor*	5	5	-	1
3	Assistant Professor*	24	24	-	3
	<b>Total</b>	<b>35</b>	<b>35</b>	<b>-</b>	<b>5</b>

\*Engaged on UG, PG and Ph.D. Programmes

Number of Faculty designated for Floriculture and Landscaping

Professor\* - 01

Associate Professor\* - 01

Assistant Professor\* - 06

\*Commonly engaged for other courses also

**Faculty engaged for common courses from the other departments.**

S.No	Cadre	Faculty in place (as on August 2022)	Vacant position	Faculty Recommended by regulatory bodies
1.	Professor	1	-	-

2.	Associate Professor	3	-	-
3.	Assistant Professor	5	-	-

### Credentials of the Faculty

Name & Designation	Total Service (Years)	Field of Interest/ Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others
Dr. K. Haripriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
Dr. Arumugam Shakila Professor	30	Fruit Science	46	3	115	4	6
Dr. A. Anburani Professor	28	Vegetable Science	28	3	61	14	10
Dr. P. Karuppaiah, Professor	28	Floriculture and Landscaping	26	7	110	15	8
Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11
Dr.S.Rameshkumar Professor	23	Fruit Science	14	6	52	20	16
Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
Dr. S. Kamalakannan	19	Vegetable Science	9	-	86	32	25

Assoc. Professor							
Dr. R. Sudhagar Associate professor	20	Floriculture and Landscaping	12	1	71	40	22
Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	37	22	9
Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	33	10	23
Dr. C. Muruganandam Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	10	1	41	17	16
Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	6	-	54	18	-
Dr. R. Sendhijnathan, Assistant Professor	20	Floriculture and Landscaping	10	-	39	13	18
Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28
Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	37	11	23
Dr. K. Sha Assistant Professor	20	Vegetable	9	-	32	-	24

		Science					
Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	9	-	16	13	11
Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10
Dr. T. Uma Maheswari Assistant Professor	19	Fruit Science	8	1	89	42	25
Dr. D. Dhanasekaran Assistant Professor	19	Floriculture and Landscaping	8	1	47	39	20
Dr. A. R. Lenin Assistant Professor	18	Floriculture and Landscaping	5	-	14	4	6
Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22
Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
Mr.S.Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7
Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	13	12
Dr. G.Samlind Sujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	4	-	31	6	5
Dr. S. Sivasankar Assistant Professor	13	Plantation, Spices, Medicinal and	5	-	26	20	4

		Aromatic crops					
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### Publication Details (2017-2022)

S.No.	Title	Authors	Journal	Year
1.	Effect of farm yard manure and biostimulants on yield and its attributes in <i>Jasminum grandiflorum</i> L. rooted cuttings.	Kamalakannan, S.	Trends in biosciences, 10(21):4258 – 4260.	2017
2.	Influence of various organic inputs on growth characters of ( <i>Jasminum grandiflorum</i> L.) rooted cuttings.	Kamalakannan, S.	Trends in biosciences, 10 (21): 4393-4396.	2017
3.	Growth retardants effects on flowering and yield parameters of spanish jasmine ( <i>Jasminum grandiflorum</i> L.).	Sudhagar, R, and S. Kamalakannan,	Journal of Floriculture and Landscaping. 3:01-03. ISSN: 2663-6050 (Online).	2017
4.	Investigation of different levels plant growth regulators and pinching treatments on flowering and yield parameters of African Marigold ( <i>Tagetes erecta</i> L.)	Kalaimani . M, CT .Sathappan, R. Kandasamy and R. Singaravel	Chemical Science. Review Letters, 6(22), 741-745.	2017
5.	Effect of bio regulators Along with organics on growth and yield of Gundu Malli ( <i>Jasminum sambac</i> Ait )	Sendhilnathan , R., Velmurugan . V and Manimaran .P	Journals of Pharmacognosy and Phytochemistry. Phytochemistry 6 (5) ; 234-238 .	2017
6.	Studies on the effect of sodium chloride on ornamental shrubs	D.Dhanasekaran	Corm- J.Floriculture. 2017, 5(2); 64-68	2017
7.	Studies on hormonal regulation of growth and flowering of Gladiolus ( <i>Gladiolus grandiflorus</i> L.) Cv.American Beauty	Dhanasekaran, D., Sathappan, CT., Lenin, A.R. and *Balakrishnan, T	Corm- J.Floriculture. 5(2); 88-94	2017
8.	Effect of graded levels of nitrogen through different sources on chlorophyll content of gladiolus cv. Jammu pride	Manoj Nazir* and Dhanasekaran, D.	Corm- J.Floriculture. 5(2); 122-126	2017
9.	Screening of marigold genotypes flower yield and pigment content	Dhanasekaran, D., Rajkumar, M., Balakrishnan, T., Lenin, A.R. and	International Journal of Current Research in Life Sciences. 06 (10).	2017

		Sekar, K	696-698.	
10.	Effect of growth regulators on growth and flowering of jasmine ( <i>Jasminum Sambac.</i> Ait)	Dhanasekaran, D., Sathappan, C.T., Rajkumar, M. Madhavan, S. and Lenin, A.R	International Journal of Current Research in Life Sciences. 06:(10) 693-695.	2017
11.	Impact of humic acid along with growing media combination with azospirillum and fym on the growth, flowering and quality of ( <i>Anthurium andreanum</i> ) plants.	AjishMuraleedharan, P. Karuppaiah and J. L. Joshi.	Journal of Emerging Technologies and Innovative Research. 4(1): 596-602.	2017
12.	Extending postharvest life of <i>Anthurium andreanum</i> cv. Tropical cut flowers on pulsing with sucrose concentrations.	AjishMuraleedharan.	Journal of Emerging Technologies and Innovative Research. 4(1): 603-606.	2017
13.	Rooting of chrysanthemum cuttings on different types of growing media and growth regulators.	AjishMuraleedharan, Ramesh Kumar, J. L. Joshi and A. J. Nainu.	Journal of Emerging Technologies and Innovative Research. 4(2): 313-319.	2017
14.	Response and effect of auxins on the rooting and growth of <i>Dendranthema grandiflora</i> cuttings	AjishMuraleedharan	Journal of Emerging Technologies and Innovative Research. 4(3): 413-417.	2017
15.	Post harvest performance of <i>Anthurium</i> cut flowers on citric acid and sucrose concentrations	AjishMuraleedharan, S. Kousika and J. L. Joshi.	Journal of Emerging Technologies and Innovative Research. 4(3): 418-421.	2017
16.	Influence of plant growth regulators on growth and flower quality of gerbera ( <i>Gerbera jamesonii</i> L.) Cv. Goliath	AjishMuraleedharan, Ramesh Kumar and J. L. Joshi	Journal of Emerging Technologies and Innovative Research. 4(3):422-426.	2017
17.	Standardization of plant species and growing medium for vertical garden system: A new urban horticulture concept	Rameshkumar, S;	J. Hortl. Sci. 131	2018

18.	Solid Waste Management in Urban Landscapes areas	Arunesh, A; Selvavinayagam, S; Rameshkumar, S;	Journal of Floriculture and Landscaping. 20-22	2018
19.	Influence of preservative chemicals and growth regulators on the post harvest physical parameters of gladiolus spikes ( <i>Gladiolus grandiflorus</i> L.) cv. American Beauty	R. Sudhagar, S. Sowmiya and B. Pamela Elisheba	Journal of Emerging Technologies and Innovative Research. 5 (12): 413-416.	2018
20.	Effect of preservative chemicals on the post harvest physical parameters of gladiolus spikes ( <i>Gladiolus grandiflorus</i> L.) cv. American Beauty.	R. Sudhagar, S. Sowmiya and B. Pamela Elisheba	International Journal of Research and Analytical Reviews. 5(4): 362-365.	2018
21.	Influence of preservative chemicals on the post harvest physiological and biochemical parameters of gladiolus spikes ( <i>Gladiolus grandiflorus</i> L.) cv. American Beauty.	R. Sudhagar, S. Sowmiya and B. Pamela Elisheba	International Journal of Research and Analytical Reviews. 5(3): 345-349.	2018
22.	Effect of preservative chemicals and growth regulators on the post harvest physiological and biochemical parameters of gladiolus spikes ( <i>Gladiolus grandiflorus</i> L.) cv. American Beauty	R. Sudhagar, S. Sowmiya and B. Pamela Elisheba	Journal of Emerging Technologies and Innovative Research. 5(10): 576-581.	2018
23.	Effect of plant growth regulators and pinching on growth and flower yield of African marigold ( <i>Tagetes erecta</i> L.).	Sathappan. CT.	Journal of Horticultural Sciences. 13(1): 42-47.	2018
24.	Evaluation of tuberose ( <i>Polianthes tuberosa</i> L.) genotypes under coastal ecosystem of Tamil Nadu.	Sathappan. CT.	Journal of Horticultural Sciences. 13(2): 202-208	2018
25.	Evaluation of tuberose ( <i>Polianthes tuberosa</i> L.) Genotypes under coastal ecosystem of tamilnadu	Sathappan. CT,D.Dhanasekaran and S.Rameshkumar	Corm J.Flori. 6 (1):40-46	2018
26.	Studies On The Effect Of Certain Plant Growth Hormones On Propagation Of Pride Of India ( <i>Lagerstroemia speciosa</i> L.)	D.Dhanasekaran, Sathappan.CT, and S.Rameshkumar	Corm J.Flori. 6 (1) :40-46	2018
27.	Evaluation Of African Marigold Accessions for Yield And Xanthophyll Content	Dhanasekaran, D, Sekar, K and Sathappan, CT.	Corm J.Flori. 6 (2) :47-50	2018

28.	Influence of growth regulating chemicals on growth and flowering in Jasmine ( <i>Jasminum sambac. Ait.</i> )	D. Dhanasekaran	J. Hortl. Sci. 13(2) : 221-226.	2018
29.	Effect of sprigging density and foliar nitrogen on the growth of Berm	D. Dhanasekaran	J. Hortl. Sci. 13(2) : 43-48.	2018
30.	Response and effectiveness of anthurium plants ( <i>Anthurium andreanum</i> ) to different holding media on growth and flowering.	AjishMuraleedharan, P. Karuppaiah, S. Ramesh Kumar, J. L. Joshi and C. Praveen Sampath Kumar.	Journal of Emerging Technologies and Innovative Research. 5(2):1577-1583.	2018
31.	Improvement of vase life in anthurium ( <i>Anthurium andreanum</i> ) cv. Acropolis by using chemical solutions	AjishMuraleedharan, P. Karuppaiah, S. Ramesh kumar and J. L. Joshi.	Journal of Emerging Technologies and Innovative Research. 5(2): 1585-1589.	2018
32.	Improvement on extending the postharvest life and quality of anthurium ( <i>Anthurium andreanum</i> ) cut flowers by the addition of sucrose	AjishMuraleedharan, S. Ramesh Kumar, S. Kousika and J. L. Joshi	Journal of Emerging Technologies and Innovative Research. 5(2): 1343-1347.	2018
33.	Growth and flowering on anthurium ( <i>Anthurium andreanum</i> ) plants treated with foliar application of growth regulators cv. tropical.	AjishMuraleedharan, S. Ramesh kumar, S. Kousika and J. L. Joshi	Journal of Emerging Technologies and Innovative Research. 5(2): 1348-1354.	2018
34.	Studies on the effect of different levels of shade on the growth and yield of Anthurium ( <i>Anthurium andreanum</i> ) cv. Tropical	AjishMuraleedharan	Journal of Emerging Technologies and Innovative Research. 7(11):6-9.	2018
35.	Effect of GA3 and foliar organics on yield and quality parameters of tuberose ( <i>Polianthes tuberosa</i> L.) cv. prajwal	Sivasankar, S., Vignesh, K., Rameshkumar, R. and Muruganandam, C.	International Journal of Current Research in Life Sciences. 7(11):3269-3271.	2018
36.	Effect of growth regulator and foliar organics on growth and yield of tuberose ( <i>Polianthes tuberosa</i> L.) cv. prajwal	Sivasankar, S., Vignesh, K., Rameshkumar, R. and Muruganandam, C	International Journal of Current Research in Life Sciences. 7(11): 3266-3268.	2018

37.	Influence on organic inputs and growth regulators on growth, yield and quality of Golden rod ( <i>Solidago canadensis</i> L.)	C.Muruganandam and Y.Angel, T.R Bharath Kumar and S.Sivasankar	Internat.J.of Advance and Innovative Research. 31: 97-100	2018
38.	Influence on organic nutrients and foliar spray on growth, yield and quality of Golden rod ( <i>Solidago canadensis</i> L.)	Muruganandam.C, Y.Angel and S.Sivasankar	Internat.J.of current Research Life sciences. 7:3264-3265.	2018
39.	Influence of organic inputs and growth regulators on yield, biochemical attributes and dry matter production in french marigold ( <i>Tagetes spatula</i> L.)	Muruganandam.C K.Udhyakumar, T.R.Barathkumar and S.Sivasankar.	International journal of research and analytical reviews. 6(2):487-497.	2019
40.	Effect of spacing and nitrogen levels on flowering and yield of golden rod ( <i>Solidago canadensis</i> L.).	R. Sudhagar, M. Palanivel, B. Pamela Elisheba S. Kamalakannan and S. Kumar	International Journal of Advance and Innovative Research. 6(2): 98-101.	2019
41.	Effect of spacing and nitrogen levels on growth parameters of golden rod ( <i>Solidago canadensis</i> L.).	R. Sudhagar, M. Palanivel, S. Kamalakannan, S. Kumar and S. Venkatesan	International Journal of Research and Analytical Reviews. 6(2): 456-458.	2019
42.	Effect of integrated nutrient management on the plant nutrient uptake of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal.	B. Pamela Elisheba and R. Sudhagar	International Journal of Research and Analytical Reviews. 6(2): 438 - 444.	2019
43.	Effect of integrated nutrient management on the growth of African marigold ( <i>Tagetes erecta</i> L.) cv. Local Orange.	R. Sudhagar, R. Alexander, B. Pamela Elisheba and S. Kamalakannan	Journal of Pharmacognosy and Phytochemistry. 8(3): 3669-3671.	2019
44.	Effect of integrated nutrient management on the flower yield of African marigold ( <i>Tagetes erecta</i> L.) cv. Local Orange.	R. Sudhagar, R. Alexander, B. Pamela Elisheba and S. Kamalakannan	Journal of Emerging Technologies and Innovative Research. 6(5): 284-289.	2019
45.	Effect of integrated nutrient management on the plant nutrient uptake of African marigold ( <i>Tagetes</i>	R. Sudhagar, R. Alexander, B. Pamela Elisheba	Journal of Emerging Technologies and	2019

	<i>erecta</i> L.) cv. Local Orange.	and S. Kamalakaran	Innovative Research. 6(5): 277- 283.	
46.	Effect of integrated nutrient management on the flower yield of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal.	B. Pamela Elisheba and R. Sudhagar	Journal of Emerging Technologies and Innovative Research. 6(5): 166-173.	2019
47.	Effect of integrated nutrient management on the growth of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal.	B. Pamela Elisheba and R. Sudhagar	Plant Archives. 19 (1): 196-198.	2019
48.	Effect of spacing and zinc application on growth parameters of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Single.	R. Sudhagar, I. Karthikeyan, S. Kamalakannan, S. Kumar and S. Venkatesan	Plant Archives. 19(2): 3620-3622.	2019
49.	Effect of Bio-regulators on yield and quality of African Marigold( <i>Tagetes erecta</i> L.)	R.Sureshkumar, P.Prasanthkumar, R.Sendhilmathan and M.Rajkumar,	JETIR. 5(5):47-50.	2019
50.	Influence of Bio-Regulators on certain Growth and Flowering characters of African Marigold ( <i>Tagetes erecta</i> L.)	R.Sureshkumar, P.Prasanthkumar, R.Sendhilmathan and M.Rajkumar.	Journal of Emerging Technologies and innovative Research. 6(5):147-150.	2019
51.	Influence of bulb size and Gibberelic acid on sprouting and growth of Tuberose ( <i>Polianthus tuberosa</i> L) cv. Single.	Sendhilmathan, R., P.Manimaran, M.Rajkumar, R.Sureshkumar and T.R.Barathkumar	JETIR. 6(2): 585-588.	2019
52.	Studies on influence of inorganic nutrients and growth regulators on growth and flower attributes of Celosia ( <i>Celosia cristata</i> L.)	R.Sendhilmathan, E. Balaraman, M.Rajkumar and R. Sureshkumar.	International journal of advance and innovative research. 6(2):91-94.	2019
53.	Effect of organic nutrients and bio regulators on flowering and yield attributes of Celosia ( <i>Celosia cristata</i> L.)	Sendhilmathan, R., E. Balaraman, M.Rajkumar and R. Sureshkumar.	Plant archives . 19: 938-940.	2019
54.	Effect of Pinching and foliar application of bio regulators on growth and flower yield of	Sendhilmathan R., R. Bharani vijay, R. Sureshkumar and	Plant archives. 19: 1002-1005.	2019

	Gomphrena ( <i>Gomphrena globosa</i> L.)	M. Rajkumar.		
55.	Effect of pinching and foliar application of organics on vegetative, floral attributes and quality of African marigold ( <i>Tagetes erecta</i> L.)	Sendhilnathan, R., M.Rethinakumar, M.Rajkumar and R.Sureshkumar.	Annals of plant and soil Research. 21(2): 189-192.	2019
56.	Effect of graded levels of nitrogen and phosphorus on yield and quality of Tuberose ( <i>Polianthes tuberosa</i> L.)	Sendhilnathan. R and K.Manivannan	Annals of plant and soil Research. 21(3): 261-264.	2019
57.	Effect of plant growth regulators on rooting of stem cuttings in Rose cv. Edward rose ,Corm.	Madhubala. V and R.Sendhilnathan	The Journal of Floriculture. 7(1):32-34.	2019
58.	Effect of organic manures and micronutrients on growth and flowering attributes of Rose cv. Andhra red ( <i>Rosa centifolia</i> )	Sendhilnathan, R., Madhubala, V.,Rajkumar, M. and R. Sureshkumar	Plant archives. 19(2): 3633-3637.	2019
59.	Evaluation of vegetable mesta ( <i>Hibiscus sabdariffa</i> L.) for growth and yield characters	Arivazhagan, E and R. Kandasamy	Plant archives. 19(1): 238-240.	2019
60.	Effect of postharvest treatment on vase life of gerbera ( <i>Gerbera jamesonii</i> )	Dhiviya Bharathi and J. Padmanaban, S.Ramesh Kumar and S.Murugan	Journal of Emerging Technologies and Innovation. 6(6):941-947.	2019
61.	Augmentation of flowering in Jasmine ( <i>Jasminum sambac</i> . Ait.) through growth hormones	D. Dhanasekaran	Annals of Plant and Soil Research. 21(2): 116-120.	2019
62.	Rooting behavior of certain foliage ornamentals grown under hydroponic nutrient solutions	D.Dhanasekaran and M.Jasmine	Annals of Plant and Soil Research. 21(4): 346-350.	2019
63.	Effect of foliar application of micronutrients and potassium humate on growth and flower yield of African marigold ( <i>Tagetes erecta</i> L.)	Marry Ruby Shyala, D.Dhanasekaran and S. Rameshkumar	Annals of Plant and Soil Research. 21(2): 101-107.	2019
64.	Nutrient Solutions for Foliage Ornamentals Grown Under Hydroponic Culture	D.Dhanasekaran and M.Jasmine	Corm J.Flori. 7 (1) :50-57.	2019
65.	Salinity Tolerance of Container Grown Ornamentals	Ramya, K, Dhanasekaran,D.,	Corm J.Flori. 7 (1) :9-12.	2019

		Sathappan, CT. and Rameshkumar, S.		
66.	Performance of Boat lily ( <i>Tradescantia spathacea</i> ) under various substrates and nutrients for vertical green walls	Ramya, K, Dhanasekaran,D.,Rameshkumar, S. and P.K.Karthikeyan	Corn J.Flori. 7 (2) :49-55.	2019
67.	Studies on Nutrient solution for hydroponic vertical gardens for foliage ornamentals	D.Dhanasekaran, M.Jasmine,CT.Sathappan and S.Kalaiyaran	International Journal of Advanced and Innovative Research	2019
68.	Studies on tolerance mechanism of ornamental annuals viz., zinnia and petunia under salinity stress	D.Dhanasekaran, CT.Sathappan, S.Rameshkumar, A.R.Lenin and S.Babu	International Journal of Research and Analytical Reviews. 6(2): 577-581.	2019
69.	Nacl induced pre-conditioning of ornamental plants viz., zinnia and petunia for salinity tolerance	D.Dhanasekaran, CT.Sathappan, S.Rameshkumar, S.Madhavan and S.Babu	Journal of Emerging Technologies and Innovative Research. 6(5): 52-56.	2019
70.	Role of ornamental horticulture in outdoor and indoor pollution abatement – A review	D.Dhanasekaran	J. Ornamental Horticulture. 22(1&2)	019
71.	Effects of spacing and foliar application of urea on proliferation of Bermuda grass ( <i>Cynodon dactylon</i> L. Pers. × <i>Cynodon transvaalensis</i> )	D. Dhanasekaran, C.T. Sathappan and S. Ramesh Kumar	J. Ornamental Horticulture. 22(3&4)	2019
72.	Physiological response of foliage ornamentals in different nutrient solutions under hydroponic culture	M. Jasmine, D. Dhanasekaran, C.T. Sathappan and K. Sekar	J. Ornamental Horticulture. 22(3&4): 119-126.	2019
73.	Performance of Marigold ( <i>Tagetes erecta</i> L.) under coastal Tamil Nadu	D. Dhanasekaran and A.R.Lenin	Suraj Panj Journal for Multidisciplinary Research. 9(8): 20-27.	2019
74.	Salinity tolerance studies of ornamentals	D. Dhanasekaran and C.T. Sathappan	The Journal Of The Greens And Gardens. 1(2): 13-15.	2019

75.	Impact of Integrated Nutrient Management on Primary Nutrient Uptake and Postharvest Soil Availability of Chrysanthemum cv. MDU-1.	Kumar, S., C. Sreedar., S. Hariprabha, K., Sanjeevkumar and Ajishmuralidharan	International Journal of Emerging Technologies and Innovative Research. 6(2):161-164	2019
76.	Roll of integrated nutrient management on enhancement of early flowering, flower quality and yield on Chrysanthemum cv. MDU-1.	S. Kumar., C. Sreedar, K. Sanjeevkumar., AjishMuraleedharan and S. Elakkuvan	International Journal of research and analytical reviews. 6(1): 362-365.	2019
77.	Effect of cycocel on growth, flowering and yield of nerium ( <i>Nerium odorum</i> L.).	Kumar, S., K. Haripriya, K. Sanjeev kumar, Ajishmuraleedharan and S. Kamalakannan	Journal of Pharmacognosy and Phytochemistry. 8(3): 2226-2228	2019
78.	Impact of various pulsing solutions on the quality and longevity of <i>Asparagus densiflorus</i> cv. 'Sprenger'. 'Sprenger'.	Hariprabha, S., S. Kumar, S. Kamalakannan, R. Sudhagar and P. Madanakumari	International Journal of Research and Analytical Reviews. 6(2): 836-839.	2019
79.	Effect of spacing on growth and flowering of nerium ( <i>Nerium odorum</i> L.) cv. Pink Double.	Kumar, S., K. Haripriya, S. Kamalakannan, R. Sudhagar and P. Madhanakumari	International Journal of Research and Analytical Reviews. 6(2): 107-109.	2019
80.	Studies on the effect of integrated nutrient Management on the growth parameters of Chrysanthemum cv. MDU-1.	Kumar, S., C. Sreedar., K., Sanjeevkumar, Ajishmuralidharan and S. Elakkuvan.	Plant archives. 19 (2): 2743-2746.	2019
81.	Postharvest treatment and vase life analysis of gerbera var. Arka krishika using different vase solutions	AjishMuraleedharan, K. Sha, S. Kumar and C. Praveen Sampath Kumar.	Journal of Emerging Technologies and Innovative Research. 6(6):654-657.	2019
82.	Response of gerbera flowers to different chemicals used for increasing the vase life	AjishMuraleedharan, K. Sha, R. Ebenezer Babu Rajan, C. Praveen Sampath Kumar and J. L. Joshi	Plant Archives. 19(1):593-595.	2019

83.	Response of Anthurium andreanum cv. tropical to different media and nutrients grown under shade conditions	AjishMuraleedharan, K. Sha, G. SamlindSujin, R. Ebenezer Babu Rajan, C. Praveen Sampath Kumar and J.L. Joshi	Plant Archives. 19(1):1121-1124.	2019
84.	Effect of plant growth regulators on rooting of bougainvillea cuttings ( <i>Bougainvillea glabra</i> )	S.Madhavan, K.Sha, S.Kumar, M.Gayathiri and S.Elakkuvan	Alochana chakra journal. 9(12): 153-157.	2020
85.	Effect of panchagavya on germination and seedling growth of balsam ( <i>Impatiens balsamina</i> ).	Kumar, S., Hariprabha, S., Kamalakannan, S., Sudhagar, R. and Sanjeevkumar, K.	Plant Archives. 20 (1): 3735-3737.	2020
86.	Effect of rooting hormone on rooting and survival of nerium ( <i>Nerium odorum</i> L.) var. pink single.	Kumar, S., Ajish Muraleedharan, Kamalakannan, S., Sudhagar, R. and Sanjeevkumar, K.	Plant Archives. 20 (1):3017-3019.	2020
87.	Effect of nano silver, sucrose and citric acid on extending the vase life of cut carnation cv. Domingo.	Kumar, S., Srivarshini, H., Sanjeevkumar, K., AjishMuralidharan, Kamalakannan, S. and Sudhagar, R.	Plant Archives. 20, (2):3782-3784.	2020
88.	Effect of maleic hydrazide on growth, flowering and yield of nerium ( <i>Nerium odorum</i> L.) var. Rose single.	Kumar, S., Ajish Muraleedharan, Kamalakannan, S., Sudhagar, R. and Sanjeevkumar, K.	Plant Archives. 20 (2):9665-9668.	2020
89.	Influence of integrated nutrient management on growth and flower yield of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal.	R. Sudhagar, M. Rajaselvam, S. Kamalakannan, S. Kumar and T. Uma Maheswari	Plant Archives. 20 (1): 2415-2418.	2020
90.	Effect of panchagavya on germination and seedling growth of balsam ( <i>Impatiens balsamina</i> ).	S. Kumar, S. Hariprabha, S. Kamalakannan, R. Sudhagar and K. Sanjeevkumar	Plant Archives. 20(1): 3735-3737.	2020
91.	Variability studies in seedling progenies of mango ( <i>Mangifera</i>	CT .Sathappan and D.Dhanasekaran	Annals of Plant and Soil Research.	2020

	indica L.)		22(2): 156- 159.	
92.	Effect of different spice solutions on the shelf life extension of red banana stored at room temperature.	Venkatesan. S and Manesha	Pl. Archives. 20 supplement 1:1323-1326.	2020
93.	Effect of bio regulators on hastening the growth of mango rootstock.	Venkatesan. S and Yuvaraj. G	Pl. Archives. 20(2): 3826-3828.	2020
94.	Effect of bio regulators on hastening the growth and development of mango rootstock.	Venkatesan. S and Yuvaraj. G	Pl. Archives. 20(2): 4271-4274.	2020
95.	.. Studies on the effect of organic manures, Bio-stimulates and micronutrients on certain growth and physiological characters of Tuberose ( <i>Polianthus tuberosa</i> L.) cv. Prajwal	G.Sahana Priya, R.Sureshkumar, M.Rajkumar, R.Sendhlnathan and T.R. Bharathkumar	Plant Archives. 20(1):941-944.	2020
96.	Studies on the effect of organic manures, Bio-stimulates and micronutrients on certain growth and yield parameters of Tuberose ( <i>Polianthus tuberosa</i> L.) cv. Prajwal	G.Sahana Priya, R.Sureshkumar, M.Rajkumar, R.Sendhlnathan and T.R. Bharathkumar.	Plant Archives 20(1): 843-846.	2020
97.	Effect of VAM and Azotobacter on growth and yield characters of African marigold ( <i>Tagetes erecta</i> L.) cv.Poornima yellow.	S.Sivasankar, P.Ilakkiya, M.Rajkumar, R.Sureshkumar and R.Sendhlnathan	Plant Archives. 20 (1):1133-1136	2020
98.	Response of various rooting hormones on the rooting of rose cuttings.	Ajish Muraleedharan, K. Sha, G. Samlind Sujin, P.K. Karthikeyan, J.L. Joshi and C. Praveen Sampath Kumar	Plant Archives. 20 (2): 4578-4580.	2020
99.	Role of preservative chemicals on extending the vase life along with quality attributes of gerbera cut flowers.	Ajish Muraleedharan, K. Sha, S. Kumar, P.K. Karthikeyan, C. Praveen Sampath Kumar and J.L. Joshi	Plant Archives. 20(2): 4762-4764.	2020

100.	Extending the vase life and quality of anthurium cut flowers by using chemical preservatives	Ajish Muraleedharan, K. Sha, S. Kumar, G. Samlind Sujin, C. Praveen Sampath Kumar and P.K. Karthikeyan.	Plant Archives. 20 (2): 4885-4888.	2020
101.	Performance of anthurium plants to foliar application of organic nutrients in combination with gibberellic acid.	Ajish Muraleedharan, K. Sha, S. Kumar, S. Kousika, C. Praveen Sampath Kumar, J.L. Joshi and P.K. Karthikeyan.	Plant Archives. 20 (2):7567-7570.	2020
102.	Influence of sea weed extract along with growth regulators on the growth, flowering and yield of anthurium plants.	Ajish Muraleedharan, K. Sha, S. Kumar, G. Samlind Sujin, J.L. Joshi and C. Praveen Sampath Kumar	Plant Archives. 20 (2):1196-1199	2020
103.	Postharvest handling of <i>Anthurium andreanum</i> cut flowers using silver thiosulphate (STS).	Ajish Muraleedharan	Plant Archives 20, (Supplement 2): 1433-1435	2020
104.	Response of orchid cut flowers as affected by floral preservatives on the postharvest quality	Ajish Muraleedharan, K. Sha, S. Kumar, G. Usha, P.K. Karthikeyan, C. Praveen Sampath Kumar and J.L. Joshi	Plant Archives 20, (Supplement 2): 1604-1607	2020
105.	Growth regulator effects on the development and yield of <i>Anthurium andreanum</i> plants cv. Tropical.	Ajish Muraleedharan, K. Sha, G. Samlind Sujin, P.K. Karthikeyan, C. Praveen Sampath Kumar, J.L. Joshi and A.J. Nainu	Plant Archives 20 (Supplement 2): 4183-4186	2020
106.	Effect of growing media and gibberellic acid on flowering and quality of Carnation ( <i>Dianthus caryophyllus</i> L.) cv. White liberty.	Rakshana, J. , R. Sendhilnathan*, M. Rajkumar, R. Sureshkumar and S. Sivasankar.	Plant Archives, 20(2): 6428-6432.	2020

107.	Effect of growing media and gibberellic acid on growth and yield of Carnation ( <i>Dianthus caryophyllus</i> L.) cv.White liberty.	Sendhilnathan, R.* , J. Rakshana, M. Rajkumar, R. Sureshkumar and S. Sivasankar.	Plant Archives. 20 (2): 9525-9529.	2020
108.	Performance of foliage ornamentals in hydroponic nutrient solutions	D.Dhanasekaran	Journal of Floriculture and Landscaping. 6: 09-13	2020
109.	Performance Of Foliage Ornamentals on Different Nutrient Solutions Under Passive Hydroponic Vertical Culture	D.Dhanasekaran	Plant Archives. 20 (Supplement 1):3358-3364.	2020
110.	Performance of spider plant ( <i>Chlorophytum comosum</i> ) in modular vertical green walls under various media and nutrients	D. Dhanasekaran, K. Ramya and CT.Sathappan	Annals of Plant and Soil Research 22(4): 410-414 (2020)	2020
111.	weed management studies in bermuda grass ( <i>Cynodon dactylon</i> ) cv. G2	Dhanasekaran, D and K.Sekar	Corm - The Journal of Floriculture, 8 (2) 51-55.	2020
112.	Optimization of media and nutrition for foliage plants grown under modular vertical green walls.	Dhanasekaran,D, K.Ramya, S.Rameshkumar and CT.Sathappan	Journal of Ornamental Horticulture. 23 (1): 51-60	2020
113.	Impact of various holding solutions on the quality and longevity of <i>asparagus densiflorus</i> cv. 'sprengeri'.	Kumar, S., S. Hariprabha, S. Kamalakannan, G. Samlind sujin and K. Sanjeevkumar	Annals of plant and soil research. Vol. 22(1): 50-54.	2020
114.	Effect of chemical floral preservatives on extending vase life of gerbera ( <i>Gerbera jamesonii</i> h. Bolus).	Arunesh. A, Ajish Muraleedharan, K. Sha, S. Kumar, J.L. Joshi, Praveen Sampath Kumar and R. Ebenezer Babu Rajan	Plant Archives. 20 (Supplement1): 680-682.	2020
115.	Studies on post harvest shelf life of tuberose ( <i>Polianthes tuberosa</i> ).	Kumar. S, Ajish Muraleedharan, S. Kamalakannan, S. Elakkuvan and R. Sudhagar	Plant Archives. 20 (Supplement 1): 3630-3633	2020
116.	Effect of panchagavya on germination and seedling growth of balsam ( <i>Impatiens balsamina</i> )	Kumar. S, S. Hariprabha, S. Kamalakannan, R. Sudhagar and K.	Plant Archives. 20 (Supplement 1): 3735-3737.	2020

		Sanjeevkumar		
117.	Effect of rooting hormone on rooting and survival of nerium ( <i>Nerium odorum</i> L.) var. Pink single.	Kumar. S, Ajish Muraleedharan, S. Kamalakannan, R. Sudhagar and K. Sanjeevkumar	Plant Archives. 20(1): 3017-3019	2020
118.	Influence of sea weed extract along with growth regulators on the growth, flowering and yield of anthurium plants	Ajish Muraleedharan, K. Sha, S. Kumar, G. Samlind Sujin, J.L. Joshi and C. Praveen Sampath Kumar	Plant Archives. 20(2): 1196-1199	2020
119.	Effect of nano silver, sucrose and citric acid on extending the vase life of cut carnation cv. Domingo	Kumar, S., H. Srivarshini, K. Sanjeevkumar1, Ajish Muralidharan, S. Kamalakannan and R. Sudhagar	Plant Archives. 20(2): 3782-3784	2020
120.	Efficacy of floral preservatives on physiological changes and keeping quality of cut carnation ( <i>Dianthus caryophyllus</i> L.) cv. Domingo	Kumar, S., H. Srivarshini, and S. Hariprabha	Annals of plant and soil research. 22(3): 290-295.	2020
121.	Effect of maleic hydrazide on growth, flowering and yield of nerium ( <i>Nerium odorum</i> L.) cv. Rose Single	Kumar. S, Ajish Muraleedharan, S. Kamalakannan, R. Sudhagar and K. Sanjeev Kumar	. Plant Archives. 20(2): 9665-9668	2020
122.	Studies on the effect of different growing media on the growth and flowering of gerbera cv. goliath	Arunesh. A, Ajish Muraleedharan, K. Sha, S. Kumar, J.L. Joshi , Praveen Sampath Kumar and Ebenezer Babu Rajan	Plant Archives. 20 (Suppliment 1):653-657	2020
123.	Effect of chemical floral preservatives on extending vase life of gerbera ( <i>Gerbera jamesonii</i> h. bolus)	Arunesh. A, Ajish Muraleedharan, K. Sha, S. Kumar, J.L. Joshi , Praveen Sampath Kumar and Ebenezer Babu Rajan	Plant Archives. 20 (Suppliment 1): 680-682	2020
124.	Performance of <i>Anthurium andreanum</i> to different growing media on flowering	Ajish Muraleedharan, K. Sha, S. Kumar, G. Samlind Sujin, J. L. Joshi and C.	Plant Archives. 20 (Suppliment 1):3738-3740.	2020

		Praveen Sampath Kumar		
125.	Rooting capacity of chrysanthemum cuttings by using different types of growing media	Ajish Muraleedharan, K. Sha, S. Kumar, J.L. Joshi and C. Praveen Sampath Kumar	Plant Archives. 20(1): 2502-2504	2020
126.	Effect of organic inputs and mulching on growth and yield of roselle ( <i>Hibiscus sabdariffavar. Sabdariffa</i> ).	S.A. Sindhu Bharadhi, K. Haripriya and S. Kamalakannan	Annalus of Plant and Soil Research. 23(2): 219-222.	
127.	Evaluation in different gladiolus ( <i>Gladiolus grandiflorus</i> L.) Varieties for spike and corm yield enhancement in coastal Tamil Nadu	Mary Ruby Shyla, R; Ramesh Kumar, S;	Plant Archives. 21S1527-531	2021
128.	Effect of organic manures and foliar application of fish amino acid on vegetative growth and dry matter production of african marigold ( <i>Tagetes erecta</i> L.)	Sivasankar, S; Ilakkiya, P; Rameshkumar, S; Muruganandam, C; Karthikeyan, PK;	Plant Archives. 2112535-2537	2021
129.	Effect of organic manures and foliar application of fish amino acid on yield and quality parameters of african marigold ( <i>Tagetes erecta</i> L.)	Sivasankar, S; Ilakkiya, P; Rameshkumar, S; Muruganandam, C; Karthikeyan, PK;	Plant Archives. 2112532-2534	2021
130.	Effect of gypsum and micronutrients on spike and corm yield of gladiolus ( <i>Gladiolus grandiflorus</i> ) cv. Guvvari.	Shyla, R; RUBY, MARY; Rameshkumar, S;	Crop Research. (0970-4884)56	2021
131.	Effect of organic inputs and mulching on growth and yield of roselle ( <i>Hibiscus sabdariffa var. sabdariffa</i> ).	Sindhu bharadhi, S. A., Haripriya, K. and Kamalakannan, S.	Annals of Plant and Soil Research. 23(2): 219-222.	2021
132.	Evaluation of sunflower genotypes ( <i>Helianthus annuus</i> L.) as bedding plants in the coastal ecosystem	B. Pamela Elisheba and R. Sudhagar	Plant Archives, 21 (Supplement 1): 2519-2524.	2021
133.	Growth manipulation in ornamental sunflower ( <i>Helianthus annuus</i> ) cv. Ring of Fire as a bedding plant	B. Pamela Elisheba and R. Sudhagar	Crop Research, 56 (1 & 2): 30-36.	2021
134.	Screening of sunflower genotypes ( <i>Helianthus annuus</i> L.) as bedding plants in the coastal ecosystem	B. Pamela Elisheba and R. Sudhagar	Research Journal of Agricultural Sciences, 12(2): 428-432.	2021

135.	Extending post-harvest life and keeping quality of gerbera ( <i>Gerbera jamaesonii</i> ) var. Red Torrossa using pulsing and preservative solutions	M. Irfana Farwin, D. Dhanasekaran, CT .Sathappan and J. Padmanaban	Journal of Ornamental Horticulture 24(1); 63-68,	2021
136.	Effect of organic manures and foliar application of fish amino acid on vegetative growth and dry matter production of African marigold ( <i>Tagetes erecta</i> L.)	S.Sivasankar, P.Ilakkiya, S.Rameshkumar, C.Muruganandam	Plant Archives	2021
137.	Influence of organic nutrients and bio regulators on certain growth and flower quality attributes of Celosia ( <i>Celosia cristata</i> L.)	R. Sendhilnathan*, E. Balaraman, M. Rajkumar , R. Sureshkumar and T.R. Barathkumar	Plant Archives 21 (Supplement 1): 2220-2223.	2021
138.	Weed Management in Tropical Turf Established with Bermuda Grass ( <i>Cynodon dactylon</i> (L.) Pers. X <i>Cynodon transvaalensis</i> L.)	D Dhanasekaran	Research Journal of Agricultural Sciences, 12(3)	2021
139.	Extending post harvest life and keeping quality of gerbera ( <i>Gerbera jamaesonii</i> ) var. Red Torrossa using pulsing and preservative solutions	M. Irfana Farwin, D. Dhanasekaran, C.T. Sathappan and J. Padmanaban	Journal of Ornamental Horticulture 24(1); 63-68,	2021
140.	Effect of micronutrient on growth of crossandra ( <i>Crossandra infundibuliformis</i> L.) cv. Delhi	Lenin .A .R, Rizwana Begum, Kalaiselvan .S and Kannan .R	International Journal of Botany Studies. 6(6): 68-71.	2021
141.	Effect of micronutrient on yield of crossandra ( <i>Crossandra infundibuliformis</i> L.) cv. Delhi	Lenin .A .R, Rizwana Begum, Kalaiselvan .S and Dhanasekaran .D	International Journal of Botany Studies. 6(5): 1092-1095.	2021
142.	Response of orchid cut flowers as affected by floral preservatives on the postharvest quality.	Ajish Muraleedharan, K. Sha, S. Kumar, G. Usha, P.K. Karthikeyan, C. Praveen Sampath Kumar and J.L. Joshi.	Plant Archives. 21: (Supplement 1): 1825-1829	2021
143.	Response of plant growth regulators on the growth, flowering and yield attributes of african marigold	Kousika. S, Ajish Muraleedharan, K. Sha, P.K.	Plant Archives. 21(1): 644-647	2021

	( <i>Tagetes erecta</i> . L)	karthikeyan, C. Praveen Sampath Kumar, J.L. Joshi and A.J. Nainu.		
144.	Postharvest Quality of Goldenrod Cut Flowers on Different Vase Solutions Cv. Tara Gold.	Ajish Muraleedharan, C. Praveen Sampath Kumar and J. L. Joshi.	Res. Jr. of Agril. Sci. 12(5): 1829- 1832	2021
145.	Effect of Pulsing with Sucrose in Prolonging the Vase Life of Goldenrod Flowers.	Vinodhini G, Ajish Muraleedharan, P. K. Karthikeyan, J. L. Joshi and C. Praveen Sampath Kumar.	Res. Jr. of Agril. Sci. 12(6): 2120- 2123	2021
146.	Synergistic effect of nitrogen, phosphorus, potassium and zinc on ornamental sunflower ( <i>Helianthus annuus</i> L.) CV. 'Ring of fire' as bedding plants	B. Pamela Elisheba and R. Sudhagar	International Journal of Botany Studies. 7(1): 411- 415.	2022
147.	Effect of Different Chemicals on the Postharvest Life and Quality of Goldenrod ( <i>Solidagocanadensis</i> ).	Vinodhini G, Ajish Muraleedharan, J. L. Joshi and C. Praveen Sampath Kumar.	Res. Jr. of Agril. Sci. 13(2): 383-388	2022

#### Workshop/Symposium/Webinars organised from 2017-2022

S.No	Title of the Programme	Name of the Faculty	Date
1.	Workshop on Roof Garden	Dr. R. Sudhagar Dr. S. Venkatesan Dr. T. Uma Maheswari	2 <sup>nd</sup> & 3 <sup>rd</sup> February 2018
2.	National workshop on BHUVAN Geo portal for Precision farming	Dr. S. Venkatesan Dr. R. Sudhagar	8 <sup>th</sup> January 2019
3.	National symposium on Horticulture in the Vanguard of climate change and urban environment	Dr. R. Ramesh Kumar Dr. D. Dhanasekaran Dr. CT. Sathappan	7 <sup>th</sup> & 8 <sup>th</sup> February 2019
4.	Webinar on Recent advances in the improvement of cucurbitaceous vegetables and Bhendi	Dr. S. Kamalakannan	11 <sup>th</sup> & 16 <sup>th</sup> July 2020

5	Webinar on Emerging trends in temperate fruit production	Dr. CT. Sathappan	12 <sup>th</sup> & 13 <sup>th</sup> July 2020
6	Webinar on Strategies to combat recent challenges in Floriculture Industry	Dr. S. Rameshkumar Dr. D. Dhanasekaran	18 <sup>th</sup> July 2020
7	Webinar on Landscape tools for smart societies	Dr. S. Rameshkumar Dr. D. Dhanasekaran	19 <sup>th</sup> July 2020
8	Webinar on New normal in floriculture	Dr. S. Rameshkumar Dr. D. Dhanasekaran	23 <sup>rd</sup> July 2020
9	Webinar on Recent advances in strawberry production	Dr. CT. Sathappan Dr. D. Dhanasekaran	24 <sup>th</sup> July 2020
10	Webinar on Research Advances in kiwi production	Dr. CT. Sathappan Dr. D. Dhanasekaran	31 <sup>st</sup> July 2020
11	Webinar on Health foods from fruits and vegetables - An Imminent need	Dr. CT. Sathappan Dr. D. Dhanasekaran	1 <sup>st</sup> August 2020
12	Webinar on Banana - Fruit for Nutritional and livelihood security	Dr. R. Sendhilnathan Dr. S. Sivasankar	2 <sup>nd</sup> August 2020
13	Webinar on Annona - The super fruit of 21 <sup>st</sup> century	Dr. R. Kandasamy Dr. E. Arivazhagan	3 <sup>rd</sup> August 2020
14	Webinar on Nutraceuticals from flower crops	Dr. S. Rameshkumar Dr. N. Dhamodharan	4 <sup>th</sup> August 2020
15	Webinar on Flower seed production - challenges and opportunities	Dr. S. Rameshkumar Dr. D. Dhanasekaran Dr. CT. Sathappan	5 <sup>th</sup> August 2020
16	International workshop on Naunces in Floriculture industry ( <a href="#">Webinar 1.pdf</a> )	Dr. S. Sivasankar	6 <sup>th</sup> September 2021
17	International workshop on Naunces in landscape industry ( <a href="#">Webinar2.pdf</a> )	Dr. S. Rameshkumar Dr. CT. Sathappan Dr. D. Dhanasekaran	13 <sup>th</sup> September 2021
18	International workshop on Naunces in Post harvest horticulture ( <a href="#">Webinar 3.pdf</a> )	Dr. CT. Sathappan Dr. J. Padmanaban Dr. D. Dhanasekaran	20 <sup>th</sup> September 2021

19	National work shop - Emerging trends in production and processing of guava ( <a href="#">Webinar 4.pdf</a> )	Dr. S. Kamalakannan Dr. S. Kumar	25 <sup>th</sup> September 2021
20	International workshop - Opportunities and challenges in horticultural technologies ( <a href="#">Webinar 5.pdf</a> )	Dr. A. Anburani Dr. C. Muruganandam Mr. S. Elakkuvan Dr. R. Rajeswari	30 <sup>th</sup> September 2021
21	International Virtual conference - Startups in Horticulture Industry (SUHI - 21) ( <a href="#">Webinar 6.pdf</a> )	Dr.R.Sendhinathan Dr. M. Rajkumar Dr. P. Madhana Kumari	20 <sup>th</sup> October 2021
22	International Virtual Workshop - Scope and opportunities in plantation crops (SOPC - 21) ( <a href="#">Webinar 7.pdf</a> )	Dr.R.Kandasamy Dr. E. Arivazhagan Dr. A. R. Lenin	27 <sup>th</sup> October 2021
23	International Virtual conference - Innovative trends in horticulture production (ITHP - 21) ( <a href="#">Webinar 8.pdf</a> )	Dr.R.Suresh Kumar Dr. T.R. Barathkumar Dr. T. Uma Maheswari	29 <sup>th</sup> October 2021
24	National Virtual workshop - Procurement, processing and product promotion in horticulture crops ( <a href="#">Webinar 9.pdf</a> )	Dr.R.Sudhagar Dr. S. Venkatesan Dr. M. Gayathiri	16 <sup>th</sup> November 2021
25	International Virtual conference - Healthy horticulture for wealthy environment (file:///H:/webinar/Webinar%2010.pdf)	Dr.S.Kamalakaran Dr. S. Kumar Dr. R. Rajeswari	18 <sup>th</sup> November 2021

#### Awards/Recognitions from 2017 to 2022

S. No	Name of the faculty	Awards
1.	Dr. K. Haripriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	1. Subject matter Specialist in selection committee, ICAR-National Research Centre for Banana Trichirapalli. 09.04.2021 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research

		<p>Institute, Karaikal. 22.06.2021</p> <p>3. External expert member, expert committee for restructuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021</p> <p>4. Board of studies in Agriculture - (GRI), Gandhigram Rural Institute, Gandhigram, Dindigul. 2021-2024</p> <p>5. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019</p>
3	Dr. A. Anburani	<p>1. APSI Honours award by Academy in Plant Sciences, India.</p> <p>2. Best oral presentation award at international symposia, Hyderabad.</p>
4	Dr. S. Anuja	<p>1. Received best paper award, Annamalai University.</p> <p>2. Received certificate of achievement award.</p>
5	Dr. S. Rameshkumar	<p>1. Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu</p>
6	Dr. J. Samruban	<p>1. 1<sup>st</sup> poster presentation award in 9<sup>th</sup> Indian Horticulture congress 2021, Kanpur</p>
7	Dr.R.Kandasamy	<p>1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry</p>
8	Dr. CT. Sathappan	<p>1. Fellow of National Gladiolus Trust.</p>
9	Dr. S. Venkatesan	<p>1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019</p> <p>2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019.</p> <p>3. Best Horticulturalist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India.</p> <p>At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>4. Best oral presentation Award- 3<sup>rd</sup> National Conference on Promoting &amp; Reinvigorating Agri - Horti, Technological Innovations (24<sup>th</sup>&amp; 25<sup>th</sup> December, 2019) held at Danbad Jharkhand, India.</p> <p>5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment(VOICE) &amp; Pondicherry Institute of Agricultural Sciences( PIAS ) in</p>

		<p>Association with Murray State University, USA. Supported by Centre for Environment &amp; Agricultural Development(CEAD)- 2020</p> <p>6. Excellence in Research award-3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>8. Best Horticulturist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</p> <p>10. Best Poster Award- Two days DST PURSE - II Sponsored National conference on “Transforming Agricultural Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 &amp; 22, 2022.</p>
10	Dr. T. R. Barath Kumar	<p>1. PRAGATI, Organizing Committee, Dhanbad, Jharkhand, India. 2017</p> <p>2. TECHSEAR, Organizing Committee, ICAR-IIRR- Rajendranagar, Hyderabad, India. 2017</p> <p>3. Endling conferences society, ICFA-2018, Pune, Maharashtra, India. 2018</p> <p>4. NSPOFED, Organizing Committee, School of agriculture and animal sciences, Gandhigram rural institute-Deemed to be University, Gandhigram, Dindigul, Tamil Nadu, India. 2019.</p> <p>5. Astha foundation (Meerut,U.P) &amp; Organizing Committee GRISAAS, ICAR, NAARM, Rajendranagar, Hyderabad, Telangana, India. 2019.</p> <p>6. ICEACBS, Organizing Committee, VOICE, PIAS,</p>

		<p>Murray State University (USA) and CEAD Puducherry, India. 2020.</p> <p>7. "3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)" Ranchi, Jharkhand. 2022</p> <p>8. "3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)" Ranchi, Jharkhand. 2022</p>
11	Dr. R. Sendhilnathan	<p>1. Awarded Best poster presentation. in 21<sup>st</sup> century (NSPOFED -in 21<sup>st</sup> century. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of Agriculture and animal sciences, Gandhigram Rural Institute, Dindigul.</p> <p>2. Excellence in Research award for outstanding contribution in the field of "Floriculture and landscape gardening" at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019 at ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India.</b></p> <p>3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.</p>
12	Dr. S. Madhavan	<p>1. Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources</p>
13	Dr. P. Madhana Kumari	<p>1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry</p> <p>2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.</p>
14	Dr. T. Uma Maheswari	<p>1. Best oral presentation award- AIASA, 2020</p> <p>2. Best women scientist award- ICEACBS, Puducherry, 2020</p>
15	Dr. D. Dhanasekarn	<p>1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018)</p> <p>2. Best Oral Presentation II<sup>nd</sup> Prize, NABS Conference, Pondicherry (2019)</p> <p>3. Young Scientist Award, National Gladiolus Trust (2020)</p> <p>4. Best Oral Presentation, III<sup>rd</sup> Prize, First NABS (2021)</p> <p>5. Best Oral Presentation II<sup>nd</sup> Prize, 7<sup>th</sup> National Youth Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA, TNAU &amp; ICAR, Coimbatore, 24-25 March, 2022</p>

16	Dr. S. Kumar	1. Best oral presentation award- 3 <sup>rd</sup> ICFAI, Jharkhand. 2. Excellence in teaching award- ICEACBS, Puducherry, 2020
17	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
18	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry
19	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy - 2019. Thangavur. 2. Best faculty award in horticulture - CNRTSPA 2019-William research award, Kanyakumari

#### Abroad Visits

S. No	Name of the Faculty	Country visited & year	Purpose of visit
1.	Dr. R. Suresh Kumar	Thailand (2018)	International Conference of Food Agriculture and Innovation (ICFAI)
2.	Dr. J. Padmanaban	Switzerland (2019) Italy (2019) France (2019)	Academy collaboration with Tamil Education Development Council (TEDC).

#### Details of Project (2017-2022)

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Type	Funding Agency
1.	2019-2021	Dr. P. Karuppaiah (PI)	Doubling the farmers income through protected cultivation technology - An economic evaluation study in Tamil Nadu.	8.0	Govt.	Indian Council of Social Science Research
2.	2017-2018	Dr. S. Rameshkumar (PI)	As PI : Evaluation of Picoxystrobin 22.52% w/w SC against Powdery mildew and Downy mildew of Grapes	1.50	Non-Govt.	M/S. Bharat Rasayan
3.	2017-2019	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	4.42	Non-Govt.	M/S. T Stanes & Co
4.	2018-2020	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Effect of Active ORG on the nutrient availability,	1.36	Non-Govt.	M/S. T Stanes & Co

			growth, metabolism and yield of <i>Lycopersicon esculentum</i> Mill.			
5.	2021-2022	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Evaluation of bio efficacy of Dr.ROOT on the yield of Onion -PI	1.56	Non-Govt	M/S. T Stanes & Co
6.	2021-2022	Dr. S. Rameshkumar (PI)	As PI : Technology Dissemination Project for "Tree transplantation in Thenkasi to Thirunelvel Highway Extension Site"	1.18	Non-Govt	P & C Projects (P) Ltd.
7.	2018-2019	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Bio – efficacy of Nano nutrients on growth and yield of capsicum	3.88	Co-op. Govt.	IFFCO, Chennai
8.	2020-2023	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Effect of Nano DAP on vegetable cowpea	4.88	Co-op. Govt.	IFFCO, Chennai
9.	2019-20	Dr. M. Rajkumar (PI) Dr. J. Sam Ruban (Co-PI)	Evaluation of bio-efficacy of crop tiger on Banana	2.50	Private	PEPTECH, Bioscience limited, New Delhi
10.	2022 onwards	<b>Dr. R. Kandasamy (PI), Dr. E. Arivazhagan (Co-PI) and Dr. C. Kathirvelu (Co-PI)</b>	Efficacy of Bio-stimulants, Zymgold Liquid, Armurox, Equilibrium, Terrasorb Complex and Zym gold Plus Granules with respect to yield, yield attributing factors and crop safety on tomato crop	8.82	Non-Govt	Godrej Agrovet Ltd., Mumbai
11	2017-2019	Dr. RM. Kathiresan and Dr. CT. Sathappan	As Associating scientist in "Annamalai rice+fish+poultry farming system for improving nutrition and livelihoods of small farmers in Nepal	120.00	Research and Extension	IKP-KP & USAID
12.	2018-2021	Dr.RM.Kathiresan and CT. Sathappan	As an Associating	209.00		DST- Mission mode

		(Associating Scientist)	Scientist In “Agronomic Integration of Technologies for Productivity Management and Optimal Water Use In Wetlands of Cauvery River Delta”		Govt.	
13.	2022-24	Dr. C. Kathirvelu (Principal investigator) Dr. S. Venkatesan and Dr. K. Suseendran (Co Principal investigator)	Bio- efficacy and Phytotoxicity and Compatibility of PIPL 100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crop on various growth parameters	5.52	<b>Non Govt</b>	M/S Parijat Industries Limited, New Delhi.
14.	2018-2020	<b>Dr.P.Sudhagar(PI)</b> <b>Dr.R.Sureshkumar(Co-PI)</b>	Efficacy of LAATU premium(Gibberellin acid 0.001%) as plant growth regulator and yield of Tomato(Co-PI)	3.00	Pvt.	Sumitomo Chemicals Pvt.Ltd, New Delhi
15.	01.07.2018 to 30.06.2020	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy and Phytotoxicity of homobrassinolide 0.04% EC in Paddy, Groundnut and Tomato	9.00	Non Govt.	m/s Godrej Agrovet Ltd, Mumbai.
16.	July 2018 to December 2019	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio-efficacy of new herbicide clethodim 12% EC for controlling grassy weeds in cotton, onion and soyabean and its phytotoxicity effect on succeeding crops	7.50	Non Govt.	Deccan fine (Chemicals) India Pvt. Ltd. Hyderabad, Telengana
17.	December 2018 to December 2021	Dr. P. Sudhagar (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy toxicity evaluation of Glutamine Ammonium 13.5% against weed flora in grapes and its effect on succeeding crops .	13.33	Non Govt.	M/S UPL.Pvt.ltd, Mumbai.
18.	January 2020 to	Dr. P. Sudhagar (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio - efficacy and	5.46	Non Govt.	M/S. Sumitomo chemical India Ltd.

	June 2022		phytotoxicity of Flumioxazin 50 % SC against major weeds in tea and non- cropped area and its effect on succeeding crops for two seasons			Mumbai NON GOVT
19.	December 2019 to May 2020	Dr.M.Rajkumar – PI Dr. J. Samruban (Co-PI)	Evaluation of Bio – efficacy of growth enhance formulations and their effect on Onion, Rice and Chilli	2.27	Non Govt.	Agri solutions Pvt.Ltd. Nashik
20.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of studies on Bio- Efficacy of evaluation of the bio-stimulant- Gaxy on cotton and grape and opteine on soybean and ground nut and pilatus on tomato.	10.50	Non Govt.	M/S UPL.Pvt.Ltd. Mumbai.
21.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio- efficacy of evaluation of Bio- Stimulant macarena on soybean, tomato, cotton and Brique on chilli and tomato.	10.50	Non Govt.	M/S.UPL.Pvt, Mumbai.
22.	February 2022 to February 2024	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy and phytotoxicity evaluation of SIAPTION 101 on growth, yield and quality of grapes for 2 season.	2.275	Non Govt.	M/s Jivagro Ltd.
23.	2018 - 2020	Prof.Rm.Kathiresan (PI) Dr.J.Padmanaban (Assoc. staff)	Agronomic Integration of Technologies for productivity management & Optimal Water Use in Wetland of Cauvery 35River Delta	67.00	Govt.	DST, New Delhi
24.	2021-	Dr.J.Padmanaban (PI)	Evaluation of Bio-	3.75	Non	Plantgene Biological

	2022	Dr.S.Manimaran (Co-PI)	stimulants: Top-up Gold (Granules) / Enhancer (Liquid) in Paddy		Govt.	Pvt. Ltd., Trichy
25.	2021-2024	Dr.S.Kanagarajan (PI) Dr.J.Padmanaban(Co-PI)	Testing of new insecticide: Evicent 45 WG against Thrips and capsule borer in Cardamom	10.00	Non Govt.	Syngenta India Ltd., CBE
26.	October 2021 to September 2024	Dr. T. Uma Maheswari (Co-PI) Dr.R.Kanagarajan (PI)	Evaluation project: Testing of new insecticide SPID + ACET 54 WG against Tea pests	5.00	Non Govt.	M/S SYNGENTA India Ltd., Coimbatore
27.	February 2022 to July 2024	Dr. T. Uma Maheswari-PI Dr.R.Kanagarajan (Co-PI)	Effective utilization of agricultural green waste in biosolarization as an innovative approach for ecofriendly cultivation of tomato ( <i>Solanumlycopersicum</i> l)	10.13	Govt.	RUSA 2.0-R&I
28.	2022-24	Dr. S.Babu (PI) Dr. D.Dhanasekaran (Co-PI)	Bioefficacy trail of Glyphosate 41 % SL IPA Salt as a post emergence herbicide against grassy weeds, broad leaf weeds and sedges existing in the trail lot of tomato and mango orchard	9.60	Trail	Crystal Crop Protection Ltd., New Delhi
29.	2022-24	Dr. C.Kathirvelu (PI) Dr. D.Dhanasekaran (Co-PI)	Climate Resilience on Butterfly fauna of coastal areas of Tamilnadu and establishing Butterfly garden at Annamalai university Gardens	5.06	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
30.	2022-24	Dr. D.Dhanasekaran (PI) Dr. CT.Sathappan, Dr. M.Govindarajan and Dr. G.Senthilkumar	Phyto-remediationof Indoor pollution through ornamental plants with various horticultural modules for improving health and urban environment.	10.13	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
<b>Total Amount</b>				<b>57.04</b>		
				<b>(Rupees)</b>		

	<b>in lakhs)</b>		
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### 6.4.3. Technical and Supporting staff

The following technical and supporting staff members in the Department are helping in academic, research and administrative activities.

Sl.No.	Sanctioned posts	Staff in place	Responsibility
1	Secretarial staff (ASO-1, Helper-2)	3	Assisting administrative work Maintenance of office files and official records
2	Technical staff (Orchard manager-1, DGS-1, and DFS-2)	4	Assisting in orchard operations, field trials, farm record maintenance, sale proceeds, supervision of labourers, execution of purchase and settlement of bills and recording of trial observations. DTP works, data processing and documentation
3	Farm workers /Gardeners	22	Layout of field trials and farm operations.

### 6.4.4. Classrooms and Laboratories

#### I. PARTICULARS OF INSTRUCTIONAL UNITS IN THE DEPARTMENT

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)	SEATING CAPACITY
1.	HOD Room	320 sq.ft	1
2.	Office Room	240 sq.ft	4
3.	PG Class Room 1	320 sq.ft	15
4.	PG Class Room 2	640 sq.ft	40
5.	PG Class Room 3	720 sq.ft	40
6.	PG Class Room 4	420 sq.ft	15
7.	Ph.D Class Room 1	640 sq.ft	15
8.	Ph.D Class Room 2	320 sq.ft	15

9.	Laboratory (PG/Ph.D)	640 sq.ft	15
10.	Staff Room 1	320 sq.ft	4
11.	Staff Room 2	400 sq.ft	5
12.	Staff Room 3	640 sq.ft	12
13.	Staff Room 4	100 sq.ft	5
14.	Staff Room 5	120 sq.ft	5
15.	Staff Room 6	100 sq.ft	1
16.	Staff Room 7	320 sq.ft	1
17.	Staff Room 8	320 sq.ft	1
18.	Postharvest lab (UG) (Distillation unit, Dehydrator, Pulper, Sealer and Mixer machine)	1333 sq.ft	40

**List of equipments available**

<b>S.No</b>	<b>Name of the Equipment</b>	<b>Equipment available in the department</b>
1.	Weighing balance (0.001)	1
2.	Weighing balance (0.01)	3
3.	Weighing balance (200 g)	2
4.	Weighing balance 60 kg (30 kg)	1
5.	Distillation unit	2
6.	pH meter	4
7.	EC meter	2

8.	Hand refractometer	5
9.	Digital vernier calliper	2
10.	Deep freezer vertical (-20°C, 275 l)	1
11.	Thermocycler unit	1
12.	Gel documentation unit	1
13.	Stereo zoom microscope	1
14.	Compound microscope	4
15.	Hot air oven	1
16.	Dehydrator	2
17.	Magnetic stirrer (5 l)	3
18.	Micro wave oven (25 l)	2
19.	Refrigerator (320 l)	3
20.	Water bath with shaker (20 l)	1
21.	UV spectrophotometer	1
22.	Refrigerated centrifuge	1
23.	Vertical gel unit (dual unit max)	1
24.	Horizontal gel unit (medium)	1
25.	Power pack (small)	1
26.	Micropipette (10 $\mu^{-1}$ , 100 $\mu^{-1}$ , 200 $\mu^{-1}$ , 1000 $\mu^{-1}$ )	1
27.	Laminar air flow chamber	1
28.	Digital thermometer and hygrometer	5
29.	Autoclave (vertical) 250 l	1
30.	Nitrogen distillation unit	1
31.	Air conditioner (2 tonnes)	4
32.	Online UPS (10 volts)	1
33.	Digital camera (14 mph)	1
34.	Vortex	1

35.	Hot plate	2
36.	Soxhlet Apparatus	2

## II. PARTICULARS OF INSTRUCTIONAL UNITS IN ORCHARD

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Orchard	5.66 hectare
2	Shade house	1650 sq.ft
3	Nursery	3634 sq.ft
4	UG practical class Room-III	1196 sq.ft
5	UG practical class Room-IV	1196 sq.ft
6	Class Room 1 (UG)	560 sq.ft
7	Field lab (PG/Ph.D)	380 sq.ft
8	Display / UG class room-2	380 sq.ft
9	Farm manager office	200 sq.ft
10	Tractor Shed	380 sq.ft
11	Store room	936 sq.ft
12	Implement shed	216 sq.ft
13	Threshing yard	900 sq.ft
14	Seed processing and storage unit	125 sq.ft
15	Farm fencing	1.05 km

## III. PARTICULARS OF INSTRUCTIONAL UNITS IN FLORICULTURE AND MEDICINAL PLANTS AREA

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/ square feet)
1	Floriculture and medicinal plants Unit	1.41 hectare
2	Vermicompost shed	450 sq.ft
3	NVP house 1	418 sq.ft
4	NVP house 2	418 sq.ft
5	NVP house 3	1071 sq.ft
6	Shade house	150 sq.ft
7	Mist chamber	216 sq.ft
8	Poly house	2640 sq.ft

#### 6.4.5. Conduct of Practical and Hands-on-Training

Hands- on -training is given to students during classes:

- Identification of flower crops and ornamental plants method demonstrations on various accepts of propagation and intercultural operations.
- Preparation of various organic manures, bio-stimulants, and organic method of controlling pests and diseases.
- Value addition in flower crops and training in floral decoration, bonsai making, dry flower making.
- Integrated Farming System is taught to the students with an objective of gaining knowledge on sustained production strategies.
- Training to diagnose cultivation problems in flower crops.
- CAD training is given to students in the CAD lab available at computer science department.
- Special training for manual drafting techniques is given.
- Exposed to special google tools and designing software for landscape designing and site analysis.

Field visits/ visit to renowned institutes, industries, progressive farms etc,

Field visits are arranged for the students to

- Various research stations for acquainting knowledge on different crop management aspects, germplasm conservation and various research activities.
- Small scale Industries for value addition in flower crops.
- Organic product outlets to learn about organic certification and market price.
- Start up entrepreneurs on various horticultural aspects including cut flower industries and landscape companies.

- Central institutions on various aspects related to horticulture.
- Progressive farmers' fields to learn about the adoption of technologies.

#### 6.4.6. Supervision of students in PG programme

Each post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise of a Major Adviser (Chairman) and two members. Of the two members, one will be from the same Department and the other in the related field from the other Departments of the Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The Chairman in consultation with the Head of the Department will nominate the other two members. The duties of advisory committee are as follows:

1. Guiding students in drawing the outline of research work
2. Guidance throughout the programme of study of the students.
3. Evaluation of research and seminar credits.
4. Correction and finalization of thesis draft.
5. Conduct of qualifying and final Viva-Voce examination.
6. The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
7. Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.

#### Students Teacher Ratio

S.No	Number of recognized Teacher for PG guidance	Academic year	Intake of students	Students Teacher Ratio
1.	35	2017-18	10	1:3.5
2.	35	2018-19	10	1:3.5
3.	35	2019-20	9	1:3.8
4.	35	2020-21	8	1:4.3
5.	35	2021-22	9	1:3.8

#### 6.4.7. Feedback of stakeholders

Constant feedback is obtained from the stakeholders as given below.

**Students:** The feedback about the curriculum and teaching methodology are obtained from the students every semester after completing the course. These comments we reviewed and considered while revising the syllabus. Department uses the feedback for enhancing the audio-visual aids, advanced laboratory equipment's and e- journals. Apart from this the mentor-mentee system enables the teachers to obtain constant feedback from students.

**Employers, those who come for campus placements:** Based on the feedback from employers, skill development and personality development programmes are conducted in addition to regular curriculum content.

**Farmers:** Feedback is regularly obtained during Farmers Day, field visits, and field trials.

**Industries:** Quality sustenance and quality enhancement measures in curriculum development process is done by restructuring the course contents based on requirement prescribed by the industry people during our industrial visits.

**Entrepreneurs:** Based on the feedback from entrepreneurs, the contents for skill development and personality development programmes are decided and implemented.

**Govt. officials:** Feedback obtained from Government officials are included during the revision of courses for PG research programmes.

**Action taken:**

- Soft skill development training is provided to students.
- Personality development courses and technical skill programmes are organised.
- Students are taught to prepare for competitive examinations like NET, ICAR-JRF and SRF.

**6.4.8. Student intake and attrition in the programme for last five years (M. Sc. in Floriculture Landscape and Architecture)**

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
10	10	9	8	9	--	--	--	--	-

**List of M.Sc. (Hort.) Floriculture and Landscaping theses -submitted from 2017 to 2022**

S.No	Name of the guide	Name of the student	Year of submission	Title of the research
1.	Dr.P.Karuppaiah	S.Kalaimani	2017	Effect of post harvest treatments on quality and vase life of gerbera cut flowers ( <i>Gerbera jamesonii</i> Hook) Cv.Salvador and Grandola
2.	Dr.S.Rameshkumar	R.Joshnapriya	2017	Effect of different mulching materials on Growth and Yield of African Marigold ( <i>Tagetes erecta</i> .L
3.	Dr.R.Sureshkuamr	P.Prasanthkumar	2017	Effect of bio regulator on growth, yield

				&quality of african marigold ( <i>Tagetes erecta.L</i> )
4.	Dr. P. Karuppaiah	S.Sowmiya	2017	Effect of Preservatives Chemicals and Growth Regulators on Vase Life and Quality of Gladiolus ( <i>Gladiolus grandiflorus</i> ) Cv. American Beauty
5.	Dr.A.R.Lenin	D.TamilPavai	2017	Effect of foliar application with micronutrients on growth , yield and quality of Tuberose ( <i>Polianthes tuberosa.L</i> ) Cv.Prajwal
6.	Dr.J.Padmanaban	S.Suganya	2017	Effect of Postharvest Treatments on Quality and Vase Life of Cut Carnation ( <i>Dianthus caryophyllus.L</i> ) Cvs.Master& Yellow Candy
7.	Dr. P. Karuppaiah	Abinaya, S.	2018	Effect of organic foliar nutrition on growth, yield and quality of <i>Philodendron erubescens</i> cv.Gold
8.	Dr.S.Ramesh Kumar	Amaega, B.	2018	Studies on growth regulation in flowering annuals
9.	Dr. R. Sudhagar	Ande Archana	2018	Effect of different drying techniques on dry flower making of rose and chrysanthemum.
10.	Dr. C. Muruganandam	Angel, Y.	2018	Influence of organic inputs and growth regulators on growth, yield and quality of golden rod ( <i>Solidago canadensis.L</i> )
11.	Dr. R. Sendhilmathan	Bharani Vijay	2018	Effect of pinching and foliar application of bio regulators on growth and yield of gomphrena ( <i>Gomphrena globosa L.</i> )
12.	Dr. J. Padmanaban	Dhiviya Bharathi, V	2018	Effect of chemical preservatives on vase life of cut gerbera ( <i>Gerbera jamesonii</i> ) cv.

				Dana Ellen
13.	Dr. D. Dhanasekaran	Satheesh, S.	2018	Effect of growth retardants on growth, flowering and yield of blanket flower ( <i>Gaillardia pulchella Frug.</i> ) cv. Yellow Dusty
14.	Dr. S.Kumar	Srivarshini, H.	2018	Effect of sliver nano particles, sucrose and citric acid on increasing the vase life of cut carnation
15.	Mr. Ajish Muraleedharan	Vignesh Kumar, A.	2018	Effect of floral preservative chemicals on vase life and quality of gladiolus ( <i>Gladiolus grandiflorus.L</i> )
16.	Dr. S.Sivasankar	Vignesh.K	2018	Effect of growth regulators and foliar organics on growth and yield of tuberose ( <i>Polianthes tuberosa L</i> ) cv. Prajwal
17.	Dr.P.Karuppiah	P.Sowmiya	2019	Effect of growth retardants on growth, yield and quality of jathimalli ( <i>Jasminum grandiflorum.L</i> )
18.	Dr.S.Ramesh Kumar	S.Selvavinayagam	2019	Effect of foliar application of GA3 and micronutrients on growth and yield of chrysanthemum
19.	Dr.R.Suresh Kumar	G.Sahanapriya	2019	Effect of foliar spray of organic manures, micro nutrients and bio stimulants on the growth and yield of tuberose var. Prajwal ( <i>Polianthes tuberosa</i> )
20.	Dr.R.Sudhagar	M.Rajaselvam	2019	Effect of organic and biofertilizer on growth and flower yield of tuberose yar.prajwal ( <i>Polianthus tuberosa</i> )
21.	Dr.R.Sendhilnathan	V.Madhubala	2019	Effect of organics and micro nutrients on growth and yield of rose cv. Andhra Red ( <i>Rosa centifolia</i> )
22.	Dr. J. Padmanaban	S.Karthikeyan	2019	Effect of media and pot size on growth and

				presentability of syngonium ( <i>Syngonium podophyllum</i> Scholt.)
23.	Dr.D.Dhanasekaran	M.Jasmine	2019	Studies on nutrition for passive hydroponic system in vertical garden modules
24.	Dr.A.R.Lenin	G.Indhumathi	2019	Studies on storage temperature and preservative treatments on shelf life of tuberose ( <i>Polianthes tuberosa</i> )cv.Prajwal loose flowers.
25.	Dr.S.Kumar	S.Hari Prabha	2019	Impact of various pulsing and holding solutions on the longevity and quality of <i>Asparagus densiflorus</i> cv. 'Sprengeri'
26.	Dr. Ajish Muraleedharan	A.Arunesh	2019	Studies on the effect of different growing media on growth and flowering of Gerbera ( <i>Gerbera jamesonii</i> H.Bolus)
27.	Dr.K.Sekar	Abinaya, N.	2020	Effect of plant growth regulators on growth and flowering of chrysanthemum
28.	Dr. P. Karuppaiah	Gowshika Devi, M.	2020	Effect of media and foliar concoction on growth, yield and quality of <i>Dracaena reflexa</i> var. Variegata cut foliage.
29.	Dr.S.Sivasankar	Ilakkiya,P.	2020	Effect of organic manures with foliar application of fish amino acid on growth and yield of African marigold ( <i>Tagetes erecta</i> Linn.) cv. Poornima Yellow
30.	Dr. R. Suresh Kumar	Mohana ,M.	2020	Effect of foliar application of organic and micronutrients on

				growth and flower yield of African marigold
31.	Dr. R. Sudhagar	Praveen Kumar, E.	2020	Standardization of potting media and nutrient concentration for pritchardia palm ( <i>Prichardiapacifica</i> )
32.	Dr. R. Sendhilmathan	Rakshana, J.	2020	Effect of growing media and gibberelic acid on the growth, yield and quality of carnation ( <i>Dianthus caryophyllus</i> L) var. White Liberty.
33.	Dr. D. Dhanasekaran	Ramya, K.	2020	Standardization of media and nutrients for ornamental plants grown in modular containers used in vertical green walls
34.	Dr. A.R. Lenin	Rizwana Begum, Z.	2020	Effect of micro nutrients on growth and yield of crossandra
35.	Dr. Ajish Muraleedharan	Vinodhini, G.	2020	Effect of different chemicals on post harvest life of goldenrod ( <i>Solidago canadensis</i> )
36.	Dr.K.Sekar	A.Ahalya	2021	Effect of graded levels of gibberellic acid on growth, flowering and yield of China aster ( <i>Callistephus chinensis</i> (L) Nees) cv.Arkakamini
37.	Dr. R. Sudhagar	M.Arunkumar	2021	Influence of organic mulches and biostimulants on growth and flower yield of tuberose ( <i>Polianthes tuberosa</i> ) cv.Prajwal
38.	Dr. R. Sendhilmathan	P.Balamurugan	2021	Effect of biofertilizers and biostimulants on growth, yield and flower quality of Gerbera ( <i>Gerbera jamesonii</i> ) cv.Pink

				elegance.
39.	Dr. J. Padmanaban	S.Gurusarithan	2021	Effect of soilless media on establishment and growth of perennial rye grass ( <i>Lolium perenne</i> L) in pro-trays
40.	Dr. D. Dhanasekaran	M.IrfanaFarwin	2021	Effect of post harvest treatments on vase life of Gerbera ( <i>Gerbera jamesonii</i> .L.)
41.	Dr. A.R. Lenin	M.Mohamed Asik	2021	Effect of different germicides and growth regulators on vase life and quality of gladiolus ( <i>Gladiolus grandiflorus</i> L) cv.White Friendship.
42.	Dr. S. Kumar	K.Shanmugi	2021	Effect of primary nutrients on growth and quality of <i>Philodehdron xanadu</i>
43.	Dr. S.Sivasankar	G.Usha	2021	Effect of spacing and nitrogen levels on growth and flower yield of crape jasmine ( <i>Tabernaemontana divaricata</i> )
44.	Dr. Ajish Muraleedharan	C.Vigneshwaran	2021	Effect of plant growth regulators on growth and flowering of gundumalli ( <i>Jasminum, sambac</i> Ait.)
45.	Dr.P.Karuppaiah	Brindha rani R.N.	2022	Effect of post-harvest treatments on quality and shelf life of <i>Jasminum auriculatum</i> cv. Santhanamullai Loose Flower.
46.	Dr.S.Rameshkumar	Ezhilsekulet	2022	Effect of foliar application of nano nutrients on growth and yield of Chrysanthemum grown in open field condition
47.	Dr.R.Sudhagar	Gokulakrishnan S	2022	Effect of different potting media on

				growth and flowering of Amaryllis Lily( <i>Amaryllis belladonna</i> )cv. Red Peacock.
48.	Dr.R.Sendhilnathan	Gowrisankari.V	2022	Influence of pinching and integrated nutrients on growth,flowering,yield and quality of Chrysanthemum ( <i>Dendranthema grandiflora</i> ) var.Poornima white.
49.	Dr.D.Dhanasekaran	Priyanka G	2022	Influence of micronutrients on growth and flowering of damask rose.( <i>Rosa damascene</i> Mill.)
50.	Dr.A.R.Lenin	Rama.K	2022	Effect of plant growth regulators on growth and yield of Crossandra ( <i>Crossandra infundibuliformis</i> L.) var.ArkaAmbara.
51.	Dr.S.Kumar	Ranjitkumar,L	2022	Effect of organic foliar nutrition on growth,yield and quality of Dracaena ( <i>Dracaena reflexa</i> cv.Variegata ) Cut foliage.
52.	Dr.AjishMuraleedharan	Subasri.S	2022	Effect of different preservative chemicals on the postharvest life of Heliconia ( <i>Heliconia stricta</i> L.) cv. Iris Red

#### Employment Details of PG students

Name of the Student	Academic year of completion of degree	Name of the institute if joined in Ph.D.	Employment details			
			Central Govt.	State Govt.	Name of the Company	Entrepreneur
Mr.S.Karthikeyan	2019	-	CEO,	-	-	-

			FPO, Erode			
Mr. S.Gurusaritharan	2021	-	-	-	JRF at M.S.Swaminat han Reasearch Foundation, Chennai	-

### NET qualified details

Floriculture and Landscaping				
S.NO.	Academic Year	Name of the Candidate	Roll number	Year of passing
1.	2018-19	G. Indhumathi	5091111757	2020
2.	2020-21	S. Hariprabha	5011116027	2020
3.	2020-21	M. Amega	4111105866	2021
4.	2020-21	S. Sivabalan	4111105565	2022
5.	2020-21	Z. Rizwana Begum	4091105590	2021
6.	2022-21	G. Usha	4131105300	2021

### Salient research achievements of the Department

- Developed technologies for reviving Neyveli Mine Spoil ecosystem by growing ornamental plants and avenue trees
- Provided tree transplantation technology and consultancy services for Tenkasi to Thirunelveli Highway expansion project and successfully transplanted 1800 avenue trees with a success rate of 90% survival.
- Technology standardization for establishment of butterfly garden in coastal condition
- Phytoremediation technology to combat indoor air pollution.
- Standardized post harvest treatments to improve the vase life and quality of flowers and foliages Viz., Gerbera, Carnation, Gladiolus, Tuberose, Asparagus, Jasmine, goldenrod, and Heliconia
- Standardized foliar application of micro nutrition, growth regulators, and bio-stimulants to improve the growth and flower yield of floriculture crops Viz., Marigold, Phyllodendron, Flowering annuals, Gomphrena, Gaillardia, Tube rose, jasmine, chrysanthemum, Carnation, Crossandra, China Aster, Gerbera, rose, and Dracena.
- Studied the influence of silver nano particles on the shelf life of flower crops
- Studied the influence of nano nutrients on growth and yield of flower crops
- Standardized organic inputs for yield maximization in flower crops

- Standardized growing media and hydroponic nutrition composition for growing ornamental plants in vertical green wall module
- Standardized growing media composition and developed a do-it-yourself tray module for nursery production of lawn grass.
- Identified gladiolus varieties suitable for growing in coastal tract and standardized package of practices for quality improvement in spikes and combs
- Standardized production technologies for ornamental sunflower, African marigold and Gerbera
- Standardized production technologies for Nerium loose flower production
- Standardized production technologies for Crape Jasmine to bring the crop under commercial cultivation.

#### 6.4.9. ICT Application in Curricula Delivery

A smart class room facility, six computers with internet facility and two LCD projectors and smart TV help in making the teaching enabled with ICT in the Department. Video facilities available in Department help us to cast videos on precision farming practices pertaining to floriculture, nursery and post harvest value addition. Software's on Archi CAD (AUTO CAD/smart draw) and 3 D Land cad is used to demonstrate to the students for the Ornamental and Landscape Gardening course. PPTs are designed and updated regularly to teach the syllabus content in a way to make the students understand better. Mobile Apps for Landscape designing, sound pollution monitoring and Google class room are used and students are exposed to these Apps to keep them aware of the current trends. Site analysis and measuring tools available on Google Earth is exposed to the students for learning landscaping in a smart way.



NURSERY UNIT



MARIGOLD FIELD



### EDUCATIONAL TOUR



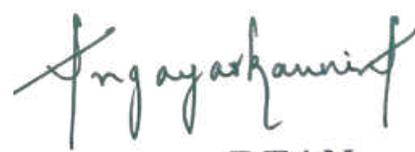
### FIELD VISIT

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented college-Wise.

6.4.11 Since the accreditation of Programmes is related to the all India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12 Certificate (Applicable when SSR is submitted for Programme)

I, the Dean, Faculty of Agriculture, Annamalai University hereby certify that the information contained in the section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
M.Sc. (Hort.) Plantation, Spices, Medicinal & Aromatic Crops

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)



**FACULTY OF AGRICULTURE**

**Department of Horticulture**

**SELF STUDY REPORT OF**

**M. Sc. (HORT.) PLANTATION, SPICES,  
MEDICINAL AND AROMATIC CROPS**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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6.4.9	ICT Application in Curricula Delivery	38
6.4.10	The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.	39
6.4.11	Since the accreditation of Programmes is related to the All-India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.	39
6.4.12	Certificate (Applicable when SSR is submitted for Programme)	39

## Self-Study Report

### 6.4. Name of the Programme M.Sc. (Hort.) Plantation, Spices, Medicinal and Aromatic crops

Offered by: Department of Horticulture

#### 6.4.1. Brief History

The Division of Horticulture came into existence in 1958 with an objective of offering horticultural subjects to B.Sc. (Ag.) graduates. In the early stages, the Division was attached with the Department of Agricultural Botany. Under the leadership of renowned Horticulturist of International repute, Dr. S. Krishnamoorthy, a pioneering post graduate course in Horticulture was introduced for the first time in South India in 1958-59. With further expansion, the erstwhile Division of Horticulture functioning from 1958-59 onwards was upgraded as a Department in 1991 with the revival of a full fledged post graduate programme - M.Sc. (Ag.) in Horticulture and later on it was renamed as M.Sc. (Hort.) in 2011. However, in tune with the guidelines of ICAR new regulations to offer specialized degrees *viz.*, Fruit Science, Vegetable Science, Floriculture and Landscape Gardening and Plantation, Spices, Medicinal and Aromatic Crops were introduced from the year 2012 onwards.

Historical Itinerary	Year/Period
Division of Horticulture	1958
First PG Programme in Horticulture	1958-59
Upgraded as a Department	1991
Post graduate Programme M.Sc. (Ag.) in Horticulture	1991
M.Sc. (Hort.) in Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2012 -2013
M.Sc. (Hort.) Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2022-2023 onwards

The M.Sc. (Hort.) Plantation, Spices, Medicinal and Aromatic cropshas 70 credits in four semesters which includes 20 credits for major courses, 08 credits for minor courses, 06 credits for supporting courses, 05 credits for common courses, 01 credit for seminar and 30 credits for master's thesis research. In addition to the 70 credits, 05 contact hours for non-credit compulsory courses has been included to improve the research acumen and employability of the students. Revision of the curricula was carried out in the academic year 2022 -2023 in concurrence with latest recommendations from BSMA and 5<sup>th</sup> Deans Committee of ICAR.

#### Distribution Pattern of Courses and Credit (For Research Program)

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	Research	Credit Load
I	8	-	6	2	-	2	18
II	12	-	-	2	-	6	20
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	12	14

Credit Load	20	8	6	5	1	30	70
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**Distribution Pattern of Courses and Credit (For IDEA Program)**

Semester	Major Courses	Minor Courses	Supporting Courses	Common Courses	Seminar	IDEA	Credit Load
I	8	-	6	2	-	-	16
II	12	-	-	2	-	-	14
III	-	6	-	1	1	10	18
IV	-	2	-	-	-	10 +10	22
Credit Load	20	8	6	5	1	30	70

**Distribution Pattern of Courses and Credit  
M.Sc. (Hort.) Plantation, Spices, Medicinal and Aromatic Crops**

S.no.	Course Code	Course Title	Credit Hours
<b>Major Courses</b>			
1	PSMA 501*	Production of Plantation Crops	2+1
2	PSMA 502*	Production of Spice Crops	2+1
3	PSMA 503*	Production of Medicinal and Aromatic Crops	2+1
4	PSMA 504*	Breeding of Plantation and Spice Crops	2+1
5	PSMA 505*	Breeding of Medicinal and Aromatic Crops	1+1
6	PSMA 506	Systematics of Plantation and Spice Crops	1+1
7	PSMA 507	Systematics of Medicinal and Aromatic Crops	1+1
8	PSMA 508	Underexploited Plantation, Spice, Medicinal and Aromatic Crops	2+0
9	PSMA 509	Growth and Development of Plantation, Spice, Medicinal and Aromatic crops	2+1
<b>Minor Courses</b>			
10	PSMA 510	Biochemistry of Plantation, Spices, Medicinal and Aromatic Crops	2+1
11	PSMA 511	Biodiversity and Conservation of Plantation, Spice, Medicinal and Aromatic crops	2+1
<b>Supporting Courses</b>			
12	STA 501	Statistical methods for Applied sciences	2+1
13	COM 501	Information technology in agriculture	2+1
<b>Common courses</b>			

14	PGS 501	Agricultural Research, Research Ethics and Rural Development Programmes	1+0
15	PGS 502	Technical Writing and Communications Skills	1+0
16	PGS 503	Basic Concepts in Laboratory Techniques	0+1
17	PGS 504	Library and Information Services	1+0
18	PGS 505	Intellectual Property and its Management in Agriculture	1+0
19	PSMA 591	Seminar	0+1
20	PSMA 599	Research	0+30

\*Compulsory courses

#### SEMESTER WISE DISTRIBUTION OF COURSES (RESEARCH/IDEA)

Sl. No.	Course Title	Credit hours
<b>I Semester</b>		
1.	Major Courses	8
2.	Supporting Courses	
	STA 501 - Statistical Methods for Applied Sciences	3
	COM 501 - Information Technology in Agriculture	3
3.	Common Courses	
	PGS 501 - Agricultural research, research ethics and rural development programmes	1
	PGS 502 - Technical writing and communications skills	1
4.	VSC 599 Research/IDEA	2/-
	<b>Total</b>	<b>18/16</b>
<b>II Semester</b>		
1.	Major Courses	12
2.	Common Courses	
	PGS 503 - Basic Concepts in Laboratory Techniques	1
	PGS 504 - Library and information services	1
3.	VSC 599 Research/IDEA	6/-
	<b>Total</b>	<b>20/14</b>
<b>III Semester</b>		
1.	Minor courses	6
2.	Common courses	
	PGS 505 - Intellectual property and its management in agriculture	1

3.	Disaster Management (1+ 0)	-
4.	Constitution of India (Contact hour 1+ 0)	-
5.	VSC 591Seminar	1
6.	VSC 599 Research/IDEA	10/10
7.	Value Added Courses (3+0) ( <a href="https://annamalaiuniversity.ac.in/studport/value_added_crs.php">https://annamalaiuniversity.ac.in/studport/value_added_crs.php</a> )	-
	<b>Total</b>	<b>18/18</b>
<b>IV Semester</b>		
1.	Minor courses	2
2.	VSC 599 Research/IDEA	12 (8+4)/20
	<b>Total</b>	<b>14/22</b>

### Vision

- Imparting quality education in Plantation, Spices, Medicinal and Aromatic crops degree programmes.
- Increasing employability of graduates in Plantation, Spices, Medicinal and Aromatic crops to meet the industrial demand and societal need by providing updated syllabus content on par with National and global standards.

### Strategic plan to achieve Vision and Goal

Goal	Programme Objectives	Implementation Plan	Performance Metrics /Timeline
Quality education	To prepare students to generate knowledge on management, production and strategies leading to the development of research philosophies, concepts and methodologies.	Classes are handled by experienced Faculty through class room teaching and practical demonstration.	Periodical class tests, practical assignments, quiz and end term exams are conducted to evaluate the performance of students.
Employability and National standards	To inculcate ability in students to critically analyze and comprehend the knowledge gained from a range of scientific data to	The students are guided to collect literature, identify gaps and propose research problem and conduct research on it.  Timely revision of	The advisory committee supervises and evaluates the students during end of every semester.

	approach cultivation problems and reach appropriate solutions in the area of their specialization.	curriculum according to BSMA and ICAR Deans committee.	
Professional ethics	To enhance capability of students to adhere to professional ethics and responsibilities related to horticultural practices.	The curriculum includes field / lab research activities making the students aware of professional norms and resource usage in cautious manner.	The student is continuously monitored by periodical review of work done in field, use of agricultural inputs, recording timely observations and verification of data by advisory committee.
Technology transfer	To facilitate exposure of students to function effectively as an individual and as a member or leader in diverse teams or interdisciplinary environment.	The interdisciplinary research approach is encouraged in making the students work in a diverse environment.	The activity of students in related research labs is evaluated by the major supervisor from time to time.
Lifelong learning	To engage the students in life-long learning and professional development through self- directed studies.	The programme includes compulsory courses along with research, seminars and publication of research work.	The continuous evaluation of courses is done through theory and practical exams while research is evaluated based on research progress in each semester and thesis submission at the end of the degree.

### Accomplishments

The Department of Horticulture is a pioneer institute which offered post graduate Horticultural programme in South India during 1958-59. The Horticulturists of international repute like Dr. S. Krishnamoorthy, Prof. P. Kalyanasundaram and Dr. L. R. Rajasekaran have

fuelled the growth of this Department in its early stage and formed the basis of its present state of existence. The Department has been imparting quality education by using updated technologies in the field of education with audio visual aids, method demonstrations and participatory approach and interactive practical experiments. **The Department was awarded with DST - FIST funds for infrastructure development. The syllabus content are updated as per suggestions by stake holders, lead organisations in agriculture and scientific experts. The students are given practical exposure in horticulture industries by hands- on - training and by study tours and industrial trainings.** The students are given counselling by the teachers for their academic improvement and future planning. Special coaching for ICAR JRF, SRF and NET examinations are provided.

The Department of Horticulture has contributed to the horticulture sector by researching upon the need based objectives in the coastal area. The location specific research outcomes are disseminated to the farmers in the coastal Tamil Nadu to propel horticultural crops in the coastal farming system. The department distributes certified seeds of "Annamalai brinjal" to the farmers. **The standardized package of practices developed for rice-fallow vegetable production, common tropical vegetables and introduction of nutritionally rich/economically feasible less known crops has been carried out. For the industrial sector stake holders, the Department is providing its research expertise by conducting product evaluation research.**

The Department is training the farmers in new technologies that are upcoming in the field of horticulture and creating awareness among the farmers about the new crops, varieties and techniques. Diagnostic services to the farmers are provided for various production problems. Demonstration of technologies through Rural Horticultural Work Experience is done every year. Periodically workshops and seminars are conducted for the benefit of industrial stake holders, scholars and scientist.

Category	Upto 2016	Last five year period (2017-2022)
Number of Publications (Journal articles)	724	338
Number of Books	13	20
Number of Book chapters	45	232
Number of Projects Handled	21	26
Grant mobilization (Rs. In lakh)	188.48	57.04
Number of Ph.D.s produced	43	8
Number of PGs produced	328	180
Number of Seminars/Conferences /Workshops/Webinar Organized	6	25
Number of Awards/recognition received by the Faculty	113	51
Countries visited by the Faculty. (Professional Visit)	9	9

#### 6.4.2. Faculty Strength

Presently 35 staff members are available in the Department specialized in different aspects of Horticulture

Sl.No.	Sanctioned posts	Sanctioned	Filled	vacant	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1	Professor*	6	6	-	1
2	Associate Professor*	5	5	-	1
3	Assistant Professor*	24	24	-	3
	<b>Total</b>	<b>35</b>	<b>35</b>	<b>-</b>	<b>5</b>

Number of Faculty designated for Plantation, Spices, Medicinal and Aromatic crops

Professor\* - 02

Associate Professor\* - 01

Assistant Professor\* - 07

\*Commonly engaged for other courses also

**Faculty engaged for common courses from the other department**

S.No	Common faculty engaged for supporting courses	Faculty	Vacant position	Faculty Recommended by other regulatory bodies
1.	Professor	1	-	-
2	Associate Professor	3	-	-
3	Assistant Professor	5	-	-

**Credentials of the Faculty**

Name & Designation	Total Service (Years)	Field of Interest/ Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others
Dr. K. Haripriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
Dr. Arumugam	30	Fruit Science	46	3	115	4	6

Shakila Professor							
Dr. A. Anburani Professor	28	Vegetable Science	28	3	61	14	10
Dr. P. Karuppaiah, Professor	28	Floriculture and Landscaping	26	7	110	15	8
Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11
Dr.S.Rameshkumar Professor	23	Fruit Science	14	6	52	20	16
Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
Dr. S. Kamalakannan Assoc. Professor	19	Vegetable Science	9	-	86	32	25
Dr. R. Sudhagar Associate professor	20	Floriculture and Landscaping	12	1	71	40	22
Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	37	22	9
Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	33	10	23
Dr. C.	20	Plantation,	10	1	41	17	16

Muruganandam Assistant Professor		Spices, Medicinal and Aromatic crops					
Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	6	-	54	18	-
Dr. R. Sendhilynathan, Assistant Professor	20	Floriculture and Landscaping	10	-	39	13	18
Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28
Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	37	11	23
Dr. K. Sha Assistant Professor	20	Vegetable Science	9	-	32	-	24
Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	9	-	16	13	11
Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10
Dr. T. Uma Maheswari Assistant Professor	19	Fruit Science	8	1	89	42	25
Dr. D. Dhanasekaran	19	Floriculture and	8	1	47	39	20

Assistant Professor		Landscaping					
Dr. A. R. Lenin Assistant Professor	18	Floriculture and Landscaping	5	-	14	4	6
Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22
Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
Mr.S.Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7
Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	13	12
Dr. G.Samlind Sujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	4	-	31	6	5
Dr. S. Sivasankar Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	20	4

#### Publication Details (2017-22)

S.No.	Title	Authors	Journal	Year
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1.	Influence of bulb size and growth regulators on the performance of English cape lily ( <i>Crinum sp.</i> )	Manimaran.P and R.Sendhilnathan,	Res. Environ. life sci. 10(4) 319 - 321.	2017
2.	Effect of organic, inorganic and biofertilizers on yield and quality of Thuduvalai ( <i>Solanum trilobatum L.</i> )	Suresh.V and R.Sendhilnathan	Journal on Medicinal Plants Studies. 5(4): 123-125.	2017
3.	Effect of integrated nutrient management on the growth and physiological parameters of Medicinal Solanum ( <i>Solanum viarum Dunal</i> ).	Venkatesan.S and Arumugam Shakila,	Int. Nat. J. Current Res. In life Sci. 6(11): 703 -707.	2017
4.	Effect of growth regulators on the yield, physiological and biochemical parameters of medicinal solanum ( <i>Solanum viarum Dunal</i> ).	Venkatesan.S and Arumugam Shakila,	J. Emerging Tech. Innovative Res. 4(6): 311 - 318.	2017
5.	Vase life extension on cut flowers of <i>Solidago canadensis</i> as influenced by different sucrose concentrations.	AjishMuraleedharan, J.L. Joshi, A. J. Nainu and P.K. karthikeyan	Journal of Emerging Technologies and Innovative Research. 4(2):320-326.	2017
6.	Influence of off season land management on maximizing yield and quality of turmeric cultivars ( <i>Curcuma longa L.</i> ) Under coastal regions of Tamil Nadu.	A.Anburani	The Journal of Phytology. (4) 01-03.	2018
7.	Effect of spacing and organic manures on the fresh herbage yield, dry matter production and leaf nutrient content of vallarai ( <i>Centella asiatica</i> ).	Rameshkumar. K and S. Venkatesan,	Pl. Archives. 18: 308 -310.	2018
8.	Effect of organic inputs on the yield, dry matter production ,solasodine content and Nutrient uptake of medicinal solanum ( <i>Solanum viarum Dunal</i> ).	Venkatesan.S and Arumugam Shakila,	J. Emerging Tech. Innovative Res. 5(5): 868 - 876.	2018

9.	studies on the effect of biofertilizers on growth, yield and alkaloid content of ashwagandha roots ( <i>Withania somnifera</i> Dunal.).	Barathkumar, T.R. and K. Manivannan.	J.Pharmacognosy and Phytochemistry. 3199-3201.	2018
10.	Studies on the effect of biofertilizers and plant growth regulators on growth, yield and alkaloid content of ashwagandha ( <i>Withania somnifera</i> Dunal.).	Barathkumar, T.R. and K. Manivannan.	J.Pharmacognosy and Phytochemistry. 3202-3205.	2018
11.	Influence of different levels of NPK on physiological and biochemical parameters of tuduvalai ( <i>Solanum trilobatum</i> L.).	Barathkumar, T.R.	Life Science Archives. 4(2):1329-1334.	2018
12.	Integrated Nutrient Management on growth and yield of Thuduvalai ( <i>Solanum trilobatum</i> L.)	Suresh.V and R. Sendhilnathan	Journal on Medicinal Plants Studies. 6(3):1-3.	2018
13.	Effect of sprigging density and foliar nitrogen on the growth of Berm	D. Dhanasekaran	J. Hortl. Sci. 13(2):43-48.	2018
14.	Effect of Integrated Nutrient Management on the Fresh herbage yield, Dry matter production, Physiological parameters, Nutrient uptake and Profitability of Mint ( <i>Mentha arvensis</i> L.).	Venkatesan. S and V. Rajamanickam,	Int. Nat. J. Adv. Innovative Res. 6(2): 166 -169.	2019
15.	Studies on the effect of storage temperature and duration of storage of tuber on sprouting, growth and yield of glory lily ( <i>Gloriosa superbal.</i> ).	Muruganandam.C., M.KaderMohideen and T.R. Barathkumar.	International journal of tropical agriculture. 37 (1-2)	2019
16.	Study on In-vitro Propagation in Glory lily ( <i>Gloriosasuperbal.</i> ).	Muruganandam.C., M.KaderMohideen and T.R. Barathkumar.	Annals of plant and Soil Research. 19: 2495-2500	2019
17.	Studies on the Effect of Certain Chemicals and	Muruganandam.C M.kaderMohideen	Plant Archives. 21: 2529-2531	2019

	Bio Regulators on Germination and Seedling Growth in Glory lily ( <i>Gloriosa superba</i> L.)	and T.R.Bharath Kumar		
18.	Effect of integrated nutrient management on growth and yield of thuduvalai ( <i>Solanum trilobatum</i> L.).	Suresh, V., Sendhilmathan, R., Jansirani, P., Sundharaiya, K., Palanisamy, A. and Subramani, P.	Acta Hortic. 1241, 343-348.	2019
19.	Utilization of spices as bio-mulches in intensive cropping system.	S.Mullaimaran., K,Haripriya, T.R.Barathkumar and Jaiganesh.V.	International Journal of Research and Analytical Reviews. 6(1):325z-328z.	2019
20.	Integrated nutrient management studies on biomass, dye yield and quality of indigo ( <i>indigofera tinctoria</i> L.)	Dhanasekaran, D and K.Sekar	Plant Archives. 20 (Supplement 2): 3899-3901.	2020
21.	Rapid multiplication of turmeric minisetts using different media in protray nursery.	V.Narendhiran and M.Gayathiri	International Journal of Agricultural Science and Research. 10(special issue): 22-25.	2020
22.	Effect of different presprouting treatments on turmeric rhizomes,	V.Narendhiran and M.Gayathiri,	International Journal of Agricultural Science and Research. 10(special issue): 13-15	2020
23.	Response of different organic media on growing turmeric minisetts in protray nursery,	M.Gayathiri and V.Narendhiran,	International Journal of emerging technologies and innovative research. 7(4): 1304-1307.	2020
24.	Best organic media for growing turmeric minisetts in protray nursery	M.Gayathiri and V.Narendhiran,	Plant archives. 20 (1): 3014-3016	2020

25.	Response of root parameters on the effect of plant growth regulators on rooting of semi hardwood cuttings in betel vine ( <i>Piper betel</i> cv. Vellaikodi,	M.Gayathiri, S.Madhavan and S.Sindhu,	International Journal of emerging technologies and innovative research. 7(12): 686-689.	2020
26.	Influence of shoot paramaters on the effect of plant growth regulators on rooting of semi hardwood cuttings in betel vine ( <i>Piper betel. l</i> ) cv. vellaikodi.	M.Gayathiri, S.Madhavan and S.Sindhu	International Journal of emerging technologies and innovative research. 7(12): 836-839.	2020
27.	Vetiver-a Blessing to Coastal ecosystem for an integral Prosperity and ecological stability	Babu, S; Rameshkumar, S; Prakash, M;	Coastal Agriculture and Climate Change. 94-106	2021
28.	Effect of PGR's on rooting of gymmnema cuttings ( <i>Gymmnemasylvestre</i> )	Dr.S.Madhavan	Research Journal of Agrl. Service. 12(3): 1111-1112	
29.	Effect of Integrated Nutrient Management on Yield Parameters of Medicinal Coleus ( <i>Coleus Forskohlii</i> Briq.)	C. Muruganandam, R. Ezhilnilavu and S. Sivasankar	Plant Archives. 21: 2529-2531	2021
30.	Effect of Media on Growth Parameters of Red Ginger ( <i>Alpinia purpurata</i> (Vieill.) K. Schum.).	Kumar, S., S. Ramya, AjishMuraleedharan and K. Sanjeev Kumar	Research Journal of Agricultural Sciences. 12(5): 1694-1696.	2021
31.	Effect of Media on Growth Parameters of Red Ginger ( <i>Alpiniapurpurata</i> (Vieill.) K. Schum.).	S. Kumar, S. Ramya, AjishMuraleedharan and K. Sanjeev Kumar	Res. Jr. of Agril. Sci. (5): 1694-1696.	2021

#### Workshop/Symposium/Webinars organised (2017-2022)

S.No	Title of the Programme	Name of the Faculty	Date
1.	Workshop on Roof Garden	Dr. R. Sudhagar	2 <sup>nd</sup> & 3 <sup>rd</sup> February

		Dr. S. Venkatesan Dr. T. Uma Maheswari	2018
2.	National workshop on BHUVAN Geo portal for Precision farming	Dr. S. Venkatesan Dr. R. Sudhagar	8 <sup>th</sup> & 9 <sup>th</sup> January 2019
3.	National symposium on Horticulture in the Vanguard of climate change and urban environment	Dr. R. Ramesh Kumar Dr. D. Dhanasekaran Dr. CT. Sathappan	7 <sup>th</sup> & 8 <sup>th</sup> February 2019
4.	Webinar on Recent advances in the improvement of cucurbitaceous vegetables and Bhendi	Dr. S. Kamalakannan	11 <sup>th</sup> & 16 <sup>th</sup> July 2020
5	Webinar on Emerging trends in temperate fruit production	Dr. CT. Sathappan	12 <sup>th</sup> & 13 <sup>th</sup> July 2020
6	Webinar on Strategies to combat recent challenges in Floriculture Industry	Dr. S. Rameshkumar Dr. D. Dhanasekaran	18 <sup>th</sup> July 2020
7	Webinar on Landscape tools for smart societies	Dr. S. Rameshkumar Dr. D. Dhanasekaran	19 <sup>th</sup> July 2020
8	Webinar on New normal in floriculture	Dr. S. Rameshkumar Dr. D. Dhanasekaran	23 <sup>rd</sup> July 2020
9	Webinar on Recent advances in strawberry production	Dr. CT. Sathappan Dr. D. Dhanasekaran	24 <sup>th</sup> July 2020
10	Webinar on Research Advances in kiwi production	Dr. CT. Sathappan Dr. D. Dhanasekaran	31 <sup>st</sup> July 2020
11	Webinar on Health foods from fruits and vegetables - An Imminent need	Dr. CT. Sathappan Dr. D. Dhanasekaran	1 <sup>st</sup> August 2020
12	Webinar on Banana - Fruit for Nutritional and livelihood security	Dr. R. Sendhilmathan Dr. S. Sivasankar	2 <sup>nd</sup> August 2020
13	Webinar on Annona - The super fruit of 21 <sup>st</sup> century	Dr. R. Kandasamy Dr. E. Arivazhagan	3 <sup>rd</sup> August 2020

14	Webinar on Nutraceuticals from flower crops	Dr. S. Rameshkumar Dr. N. Dhamodharan	4 <sup>th</sup> August 2020
15	Webinar on Flower seed production - challenges and opportunities	Dr. S. Rameshkumar Dr. D. Dhanasekaran Dr. CT. Sathappan	5 <sup>th</sup> August 2020
16	International workshop on Naunces in Floriculture industry ( <a href="#">Webinar 1.pdf</a> )	Dr. S. Sivasankar	6 <sup>th</sup> September 2021
17	International workshop on Naunces in landscape industry ( <a href="#">Webinar2.pdf</a> )	Dr. S. Rameshkumar Dr. CT. Sathappan Dr. D. Dhanasekaran	13 <sup>th</sup> September 2021
18	International workshop on Naunces in Post harvest horticulture ( <a href="#">Webinar 3.pdf</a> )	Dr. CT. Sathappan Dr. J. Padmanaban Dr. D. Dhanasekaran	20 <sup>th</sup> September 2021
19	National work shop - Emerging trends in production and processing of guava ( <a href="#">Webinar 4.pdf</a> )	Dr. S. Kamalakannan Dr. S. Kumar	25 <sup>th</sup> September 2021
20	International workshop - Opportunities and challenges in horticultural technologies ( <a href="#">Webinar 5.pdf</a> )	Dr. A. Anburani Dr. C. Muruganandam Mr. S. Elakkuvan Dr. R. Rajeswari	30 <sup>th</sup> September 2021
21	International Virtual conference - Startups in Horticulture Industry (SUHI - 21) ( <a href="#">Webinar 6.pdf</a> )	Dr.R.Sendhinathan Dr. M. Rajkumar Dr. P. Madhana Kumari	20 <sup>th</sup> October 2021
22	International Virtual Workshop - Scope and opportunities in plantation crops (SOPC - 21) ( <a href="#">Webinar 7.pdf</a> )	Dr.R.Kandasamy Dr. E. Arivazhagan Dr. A. R. Lenin	27 <sup>th</sup> October 2021
23	International Virtual conference - Innovative	Dr.R.Suresh Kumar	29 <sup>th</sup> October

	trends in horticulture production (ITHP - 21) ( <a href="#">Webinar 8.pdf</a> )	Dr. T.R. Barathkumar Dr. T. Uma Maheswari	2021
24	National Virtual workshop - Procurement, processing and product promotion in horticulture crops ( <a href="#">Webinar 9.pdf</a> )	Dr.R.Sudhagar Dr. S. Venkatesan Dr. M. Gayathiri	16 <sup>th</sup> November 2021
25	International Virtual conference - Healthy horticulture for wealthy environment (file:///H:/webinar/Webinar%2010.pdf)	Dr.S.Kamalakannan Dr. S. Kumar Dr. R. Rajeswari	18 <sup>th</sup> November 2021

#### Awards/Recognitions last five years

S. No	Name of the faculty	Awards
1.	Dr. K. Haripriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	1. Subject matter Specialist in selection committee, ICAR-National Research Centre for Banana Trichirapalli. 09.04.2021 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 22.06.2021 3. External expert member, expert committee for re-structuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021 4. Board of studies in Agriculture - (GRI), Gandhigram Rural Institute, Gandhigram, Dindigul. 2021-2024 5. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019
3	Dr. A. Anburani	1.APSI Honours award by Academy in Plant Sciences, India. 2. Best oral presentation award at international symposia, Hyderabad.
4	Dr. S. Anuja	1. Received best paper award, Annamalai University. 2. Received certificate of achievement award.
5	Dr. S. Rameshkumar	1. Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu

6	Dr. J. Samruban	1. 1 <sup>st</sup> poster presentation award in 9 <sup>th</sup> Indian Horticulture congress 2021, Kanpur
7	Dr.R.Kandasamy	1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry
8	Dr. CT. Sathappan	1. Fellow of National Gladiolus Trust.
9	Dr. S. Venkatesan	<p>1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019</p> <p>2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019.</p> <p>3. Best Horticulturalist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India.</p> <p>At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>4. Best oral presentation Award- 3<sup>rd</sup> National Conference on Promoting &amp; Reinvigorating Agri - Horti, Technological Innovations (24<sup>th</sup>&amp; 25<sup>th</sup> December, 2019) held at Danbad Jharkhand, India.</p> <p>5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment (VOICE) &amp; Pondicherry Institute of Agricultural Sciences ( PIAS ) in Association with Murray State University, USA. Supported by Centre for Environment &amp; Agricultural Development (CEAD)- 2020</p> <p>6. Excellence in Research award-3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>8. Best Horticulturist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun,</p>

		<p>Uttarakhand, India.</p> <p>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</p> <p>10. Best Poster Award- Two days DST PURSE - II Sponsored National conference on “Transforming Agricultural Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 &amp; 22, 2022.</p>
10	Dr. T. R. Barath Kumar	<p>1. PRAGATI, Organizing Committee, Dhanbad, Jharkhand, India. 2017</p> <p>2. TECHSEAR, Organizing Committee, ICAR-IIRR-Rajendranagar, Hyderabad, India. 2017</p> <p>3. Endling conferences society, ICFA-2018, Pune, Maharashtra, India. 2018</p> <p>4. NSPOFED, Organizing Committee, School of agriculture and animal sciences, Gandhigram rural institute-Deemed to be University, Gandhigram, Dindigul, Tamil Nadu, India. 2019.</p> <p>5. Astha foundation (Meerut,U.P) &amp; Organizing Committee GRISAAS, ICAR, NAARM, Rajendranagar, Hyderabad, Telangana, India. 2019.</p> <p>6. ICEACBS, Organizing Committee, VOICE, PIAS, Murray State University (USA) and CEAD Puducherry, India. 2020.</p> <p>7. “3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)” Ranchi, Jharkhand. 2022</p> <p>8. “3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)” Ranchi, Jharkhand. 2022</p>
11	Dr. R. Sendhilnathan	<p>1.Awarded Best poster presentation. in 21<sup>st</sup>century (NSPOFED -in 21<sup>st</sup>century. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of agriculture and animal sciences, Gandhigram Rural Institute, Dindigul.</p> <p>2.Excellence in Research award for outstanding</p>

		<p>contribution in the field of “Floriculture and landscape gardening” at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019</b> at ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India.</p> <p>3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.</p>
12	Dr. S. Madhavan	1. Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources
13	Dr. P.Madhana Kumari	<p>1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry</p> <p>2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.</p>
14	Dr. T. Uma Maheswari	<p>1. Best oral presentation award- AIASA, 2020</p> <p>2. Best women scientist award- ICEACBS, Puducherry, 2020</p>
15	Dr. D. Dhanasekarn	<p>1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018)</p> <p>2. Best Oral Presentation IIInd Prize, NABS Conference, Pondicherry (2019)</p> <p>3. Young Scientist Award, National Gladiolus Trust (2020)</p> <p>4. Best Oral Presentation, IIIrd Prize, First NABS (2021)</p> <p>5. Best Oral Presentation IIInd Prize, 7th National Youth Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA, TNAU &amp; ICAR, Coimbatore, 24-25 March, 2022</p>
16	Dr. S. Kumar	<p>1. Best oral presentation award- 3<sup>rd</sup> ICFAI, Jharkhand.</p> <p>2. Excellence in teaching award- ICEACBS, Puducherry, 2020</p>
17	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
18	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry

19	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy – 2019. Thangavur. 2. Best faculty award in horticulture – CNRTSPA 2019-William research award, Kanyakumari
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#### Abroad Visits

S. No	Name of the Faculty	Country visited&Year	Purpose of visit
1.	Dr. R. Suresh Kumar	Thailand (2019)	International Conference of Food Agriculture and Innovation (ICFAI)
2.	Dr. J. Padmanaban	Switzerland (2017) Italy (2018) France (2018)	To have academy collaboration with Tamil Education Development Council (TEDC)

#### Details of Project (2017-2022)

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Type	Funding Agency
1.	2019-2021	Dr. P. Karuppaiah (PI)	Doubling the farmers income through protected cultivation technology – An economic evaluation study in Tamil Nadu.	8.0	Govt.	Indian Council of Social Science Research
2.	2017-2018	Dr. S. Rameshkumar (PI)	As PI : Evaluation of Picoxystrobin 22.52% w/w SC against Powdery mildew and Downy mildew of Grapes	1.50	Non-Govt.	M/S. Bharat Rasayan
3.	2017-2019	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	4.42	Non-Govt.	M/S. T Stanes & Co
4.	2018-2020	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Effect of Active ORG on the nutrient availability, growth, metabolism and yield of <i>Lycopersicon esculentum</i> Mill.	1.36	Non-Govt.	M/S. T Stanes & Co

5.	2021-2022	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Evaluation of bio efficacy of Dr.ROOT on the yield of Onion –PI	1.56	Non-Govt	M/S. T Stanes & Co
6.	2021-2022	Dr. S. Rameshkumar (PI)	As PI : Technology Dissemination Project for “Tree transplantation in Thenkasi to Thirunelvel Highway Extension Site”	1.18	Non-Govt	P & C Projects (P) Ltd.
7.	2018-2019	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Bio – efficacy of Nano nutrients on growth and yield of capsicum	3.88	Co-op. Govt.	IFFCO, Chennai
8.	2020-2023	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Effect of Nano DAP on vegetable cowpea	4.88	Co-op. Govt.	IFFCO, Chennai
9.	2019-20	Dr. M. Rajkumar (PI) Dr. J. Sam Ruban (Co-PI)	Evaluation of bio-efficacy of crop tiger on Banana	2.50	Private	PEPTECH, Bioscience limited, New Delhi
10.	2022 onwards	<b>Dr. R. Kandasamy (PI), Dr. E. Arivazhagan (Co-PI) and Dr. C. Kathirvelu (Co-PI)</b>	Efficacy of Bio-stimulants, Zymgold Liquid, Armurox, Equilibrium, Terrasorb Complex and Zym gold Plus Granules with respect to yield, yield attributing factors and crop safety on tomato crop	8.82	Non-Govt	Godrej Agrovvet Ltd., Mumbai
11	2017-2019	Dr. RM. Kathiresan and Dr. CT. Sathappan	As Associating scientist in “Annamalai rice+fish+poultry farming system for improving nutrition and livelihoods of	120.00	Research and Extension	IKP-KP & USAID

			small farmers in Nepal			
12.	2018-2021	Dr.RM.Kathiresan and CT. Sathappan (Associating Scientist)	As an Associating Scientist In "Agronomic Integration of Technologies for Productivity Management and Optimal Water Use In Wetlands of Cauvery River Delta"	209.00	Govt.	DST- Mission mode
13.	2022-24	Dr. C. Kathirvelu (Principal investigator) Dr. S. Venkatesan and Dr. K. Suseendran (Co Principal investigator)	Bio- efficacy and Phytotoxicity and Compatibility of PIPL 100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crop on various growth parameters	5.52	<b>Non Govt</b>	M/S Parijat Industries Limited, New Delhi.
14.	2018-2020	<b>Dr.P.Sudhagar(PI)</b> <b>Dr.R.Sureshkumar(Co-PI)</b>	Efficacy of LAATU premium(Gibberellin acid 0.001%) as plant growth regulator and yield of Tomato(Co-PI)	3.00	Pvt.	Sumitomo Chemicals Pvt.Ltd, New Delhi
15.	01.07.2018 to 30.06.2020	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy and Phytotoxicity of homobrassinolide 0.04% EC in Paddy, Groundnut and Tomato	9.00	Non Govt.	m/s Godrej Agrovet Ltd, Mumbai.
16.	July 2018 to December 2019	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio-efficacy of new herbicide clethodim 12% EC for controlling grassy weeds in cotton, onion and soyabean	7.50	Non Govt.	Deccan fine (Chemicals) India Pvt. Ltd. Hyderabad, Telengana

			and its phytotoxicity effect on succeeding crops			
17.	December 2018 to December 2021	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy toxicity evaluation of Glutamate Ammonium 13.5% against weed flora in grapes and its effect on succeeding crops .	13.33	Non Govt.	M/S UPL.Pvt.ltd, Mumbai.
18.	January 2020 to June 2022	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio - efficacy and phytotoxicity of Flumioxazin 50 % SC against major weeds in tea and non- cropped area and its effect on succeeding crops for two seasons	5.46	Non Govt.	M/S. Sumitomo chemical India Ltd. Mumbai NON GOVT
19.	December 2019 to May 2020	Dr.M.Rajkumar - PI Dr. J. Samruban (Co-PI)	Evaluation of Bio - efficacy of growth enhance formulations and their effect on Onion, Rice and Chilli	2.27	Non Govt.	Agri solutions Pvt.Ltd. Nashik
20.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of studies on Bio- Efficacy of evaluation of the bio-stimulant- Gaxy on cotton and grape and opteine on soybean and ground nut and pilatus on tomato.	10.50	Non Govt.	M/S UPL.Pvt.Ltd. Mumbai.
21.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio- efficacy of evaluation of Bio- Stimulant macarena on soybean, tomato, cotton and Brique	10.50	Non Govt.	M/S.UPL.Pvt, Mumbai.

			on chilli and tomato.			
22.	February 2022 to February 2024	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy and phytotoxicity evaluation of SIAPTION 101 on growth, yield and quality of grapes for 2 season.	2.275	Non Govt.	M/s Jivagro Ltd.
23.	2018 - 2020	Prof.Rm.Kathiresan (PI) Dr.J.Padmanaban (Co-PI)	Agronomic Integration of Technologies for productivity management & Optimal Water Use in Wetland of Cauvery 35 River Delta	67.00	Govt.	DST, New Delhi
24.	2021-2022	Dr.J.Padmanaban (PI) Dr.S.Manimaran (Co-PI)	Evaluation of Bio-stimulants: Top-up Gold (Granules) / Enhancer (Liquid) in Paddy	3.75	Non Govt.	Plantgene Biological Pvt. Ltd., Trichy
25.	2021-2024	Dr.S,Kanagarajan (PI) Dr.J.Padmanaban(Co-PI)	Testing of new insecticide: Evicent 45 WG against Thrips and capsule borer in Cardamom	10.00	Non Govt.	Syngenta India Ltd., CBE
26.	October 2021 to September 2024	Dr. T. Uma Maheswari (Co-PI) Dr.R.Kanagarajan (PI)	Evaluation project: Testing of new insecticide SPID + ACET 54 WG against Tea pests	5.00	Non Govt.	M/S SYNGENTA India Ltd., Coimbatore
27.	February 2022 to July 2024	Dr. T. Uma Maheswari-PI Dr.R.Kanagarajan (Co-PI)	Effective utilization of agricultural green waste in biosolarization as an innovative approach for ecofriendly cultivation of tomato ( <i>Solanum lycopersicum</i> l)	10.13	Govt.	RUSA 2.0-R&I
28.	2022-24	Dr. S.Babu (PI)	Bioefficacy trail of	9.60		Crystal Crop

		Dr. D.Dhanasekaran (Co-PI)	Glyphosate 41 % SL IPA Salt as a post emergence herbicide against grassy weeds, broad leaf weeds and sedges existing in the trail lot of tomato and mango orchard		Trail	Protection Ltd., New Delhi
29.	2022-24	Dr. C.Kathirvelu (PI) Dr. D.Dhanasekaran (Co-PI)	Climate Resilience on Butterfly fauna of coastal areas of Tamilnadu and establishing Butterfly garden at Annamalai University Gardens	5.06	Govt.	RUSA 2.0 Research and Innovation- Health and Environment scheme
30.	2022-24	Dr. D.Dhanasekaran (PI) Dr. CT.Sathappan, Dr. M.Govindarajan and Dr. G.Senthilkumar	Phyto-remediationof Indoor pollution through ornamental plants with various horticultural modules for improving health and urban environment.	10.13	Govt.	RUSA 2.0 Research and Innovation- Health and Environment scheme
<b>Total Amount</b>				<b>57.04</b> <b>(Rupees</b> <b>in</b> <b>lakhs)</b>		

### 6.4.3. Technical and Supporting staff

The following technical and supporting staff members in the Department are helping in academic, research and administrative activities.

Sl.No.	Sanctioned posts	Staff in place	Responsibility
1	Secretarial staff (ASO-1, Helper-2)	3	Assisting administrative work Maintenance of office files and official records
2	Technical staff (Orchard manager-1, DGS-1, and DFS-2)	4	Assisting in orchard operations, field trials, farm record maintenance, sale proceeds, supervision of labourers, execution of purchase and settlement of bills and recording of trial observations. DTP works, data processing and documentation

3	Farm workers /Gardeners	22	Layout of field trials and farm operations.
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#### 6.4.4. Classrooms and Laboratories

#### I. PARTICULARS OF INSTRUCTIONAL UNITS IN THE DEPARTMENT

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)	SEATING CAPACITY
1.	HOD Room	320 sq.ft	1
2.	Office Room	240 sq.ft	4
3.	PG Class Room 1	320 sq.ft	15
4.	PG Class Room 2	640 sq.ft	40
5.	PG Class Room 3	720 sq.ft	40
6.	PG Class Room 4	420 sq.ft	15
7.	Ph.D Class Room 1	640 sq.ft	15
8.	Ph.D Class Room 2	320 sq.ft	15
9.	Laboratory (PG/Ph.D)	640 sq.ft	15
10.	Staff Room 1	320 sq.ft	4
11.	Staff Room 2	400 sq.ft	5
12.	Staff Room 3	640 sq.ft	12
13.	Staff Room 4	100 sq.ft	5
14.	Staff Room 5	120 sq.ft	5
15.	Staff Room 6	100 sq.ft	1

16.	Staff Room 7	320 sq.ft	1
17.	Staff Room 8	320 sq.ft	1
18.	Postharvest lab (UG) (Distillation unit, Dehydrator, Pulper, Sealer and Mixer machine)	1333 sq.ft	40

#### List of equipments available

S.No	Name of the Equipment	Equipment available in the department
1.	Weighing balance (0.001)	1
2.	Weighing balance (0.01)	3
3.	Weighing balance (200 g)	2
4.	Weighing balance 60 kg (30 kg)	1
5.	Distillation unit	2
6.	pH meter	4
7.	EC meter	2
8.	Hand refractometer	5
9.	Digital vernier calliper	2
10.	Deep freezer vertical (-20°C, 275 l)	1
11.	Thermocycler unit	1
12.	Gel documentation unit	1
13.	Stereo zoom microscope	1
14.	Compound microscope	4
15.	Hot air oven	1
16.	Dehydrator	2

17.	Magnetic stirrer (5 l)	3
18.	Micro wave oven (25 l)	2
19.	Refrigerator (320 l)	3
20.	Water bath with shaker (20 l)	1
21.	UV spectrophotometer	1
22.	Refrigerated centrifuge	1
23.	Vertical gel unit (dual unit max)	1
24.	Horizontal gel unit (medium)	1
25.	Power pack (small)	1
26.	Micropipette (10 $\mu^{-1}$ , 100 $\mu^{-1}$ , 200 $\mu^{-1}$ , 1000 $\mu^{-1}$ )	1
27.	Laminar air flow chamber	1
28.	Digital thermometer and hygrometer	5
29.	Autoclave (vertical) 250 l	1
30.	Nitrogen distillation unit	1
31.	Air conditioner (2 tonnes)	4
32.	Online UPS (10 volts)	1
33.	Digital camera (14 mph)	1
34.	Vortex	1
35.	Hot plate	2
36.	Soxhlet Apparatus	2

## II. PARTICULARS OF INSTRUCTIONAL UNITS IN ORCHARD

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
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III.	1	Orchard	5.66 hectare
	2	Shade house	1650 sq.ft
	3	Nursery	3634 sq.ft
	4	UG practical class Room-III	1196 sq.ft
	5	UG practical class Room-IV	1196 sq.ft
	6	Class Room 1 (UG)	560 sq.ft
	7	Field lab (PG/Ph.D)	380 sq.ft
	8	Display / UG class room-2	380 sq.ft
	9	Farm manager office	200 sq.ft
	10	Tractor Shed	380 sq.ft
	11	Store room	936 sq.ft
	12	Implement shed	216 sq.ft
	13	Threshing yard	900 sq.ft
	14	Seed processing and storage unit	125 sq.ft
	15	Farm fencing	1.05 km

PARTICULARS OF INSTRUCTIONAL UNITS IN FLORICULTURE AND  
MEDICINAL PLANTS AREA

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Floriculture and medicinal plants Unit	1.41 hectare
2	Vermicompost shed	450 sq.ft

3	NVP house 1	418 sq.ft
4	NVP house 2	418 sq.ft
5	NVP house 3	1071 sq.ft
6	Shade house	150 sq.ft
7	Mist chamber	216 sq.ft
8	Poly house	2640 sq.ft

#### 6.4.5. Conduct of Practicals and Hands-on-Training

Hands- on -training is given to students during classes:

- Identification, collection cataloguing of medicinal and aromatic plants.
- Training on propagation of endangered medicinal and aromatic plants.
- Processing and value addition of spice crops.
- Use of organic amendments for nursery development of PSMA

Field visits are arranged for the students to

- Identify value added byproducts of plantation crops
- Processing industries on beverages
- Extraction units for alkaloids
- Distillation units for essential oils
- Central institutes
- Herbal products units
- Value added by products units

#### 6.4.6. Supervision of students in PG programme

Each post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise of a Major Adviser (Chairman) and two members. Of the two members, one will be from the same Department and the other in the related field from the other Departments of the Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The Chairman in consultation with the Head of the Department will nominate the other two members. The duties of advisory committee are as follows:

1. Guiding students in drawing the outline of research work
2. Guidance throughout the programme of study of the students.

3. Evaluation of research and seminar credits.
4. Correction and finalization of thesis draft.
5. Conduct of qualifying and final Viva-Voce examination.
6. The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
7. Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.

#### Students Teacher Ratio

S.No	Number of recognized Teacher for PG guidance	Academic year	Intake of students	Students Teacher Ratio
1.	35	2017-18	5	1:7
2.	35	2018-19	5	1:7
3.	35	2019-20	3	1:11.6
4.	35	2020-21	9	1:3.8
5.	35	2021-22	9	1:3.8

#### 6.4.7. Feedback of stakeholders

Constant feedback is obtained from the stakeholders as given below.

**Students:** The feedback about the curriculum and teaching methodology are obtained from the students every semester after completing the course. These comments are reviewed and considered while revising the syllabus. Department uses the feedback for enhancing the audio-visual aids, advanced laboratory equipments, e- journals. Apart from this the mentor-mentee system enables the teachers to obtain constant feedback from students.

**Employers, those who come for campus placements:** Based on the feedback from employers, skill development and personality development programmes are conducted in addition to regular curriculum content.

**Farmers:** Feedback is regularly obtained from farmers during Farmers Day, field visits, and field trials.

**Industries:** Quality sustenance and quality enhancement measures in curriculum development process is done by restructuring the course contents based on requirement prescribed by the industry people during our industrial visits.

**Entrepreneurs:** Based on the feedback from entrepreneurs, the contents for skill development and personality development programmes and Experiential Learning Programmes are decided and implemented.

**Govt. officials:** Feedback obtained from Government officials are included during the revision of courses for PG research programmes.

**Action taken:**

- Soft skill development training is provided to students.
- Personality development courses and technical skill programmes are organised.
- Students are taught to prepare for competitive examinations like NET, ICAR-JRF and SRF.

**6.4.8. Student intake and attrition in the programme for last five years (M. Sc. in Plantation Spices, Medicinal and Aromatic crops)**

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
5	5	3	9	9	--	--	--	--	-

**List of M.Sc. (Hort.) Plantation, Spices, Medicinal and Aromatic crops theses - submitted from 2017 to 2022**

S.No	Name of the Guide	Name of the Student	Year of Submission	Title
1	Dr.C. Muruganandam	G.Thamizharasan	2019	Effect of organic inputs on growth and yield of <i>Aloe vera</i> .L

2	Dr.T.R.Barath Kumar	S.Sudhandiraselvan	2019	Studies on efficacy of organic nutrients and plant growth hormones on flowering and quality of cashew ( <i>Anacardium occidentale</i> )
3	Dr. S. Madhavan	M.Sathishkumar	2019	Effect of organic manures and bio-fertilizers on growth and leaf yield of <i>Gymnema</i> ( <i>Gymnemasylvestre</i> )
4	Dr. M. Gayathiri	V.Narendhiran	2019	Rapid multiplication of turmeric mini setts using different media in protray nursery
5	Dr.S. Sivasankar	K.Nadhiyadevi	2019	Effect of foliar organics on growth and herbage yield of Kalmegh( <i>Andrographis paniculata</i> )
6	Dr.C. Muruganandam	Ezhilnilavu, R.	2020	Effect of integrated nutrient management on growth, yield and quality of medicinal coleus ( <i>Coleus forskohlii</i> Briq)
7	Dr.T.R.Barathkumar	Prashath,V.	2020	Standardization of propagation techniques in Noni ( <i>Morindacitrifolia</i> L.)
8	Dr.S.Madhavan	Sangeeth, J.	2020	Effect of presowing treatment on seed germination and seedling vigour in arecanut( <i>Areca catechu</i> )
9	Dr. M. Gayathiri	Sindhu, S.	2020	Effect of plant growth regulators on rooting of semihard wood cuttings in betel vine ( <i>Piper betel</i> )

10	Dr.R.Rajeswari	Soundharya, S.	2020	Effect of organic inputs on growth and yield of sacred basil ( <i>Ocimumsanctum</i> ,L.)
11	Dr. C.Muruganandam	S.Kousika	2021	Effect of integrated nutrient management on growth, yield and quality of Senna ( <i>Cassia angustifolia Vahi</i> )
12	Dr. T.R.Barathkumar	J.PreethiFetricia	2021	Studies of seed dormancy breaking techniques and genetic variability in turkeys berry plant ( <i>Solanum toroumSw</i> )
13	Dr. S. Madhavan	P.Rosika	2021	Effect of Plant growth regulators on propagation of long pepper ( <i>Piper longum</i> L.)
14	Dr.C.Muruganandam	Dhesiyakumar,R	2022	Effect of organic manure on growth, yield, nutrient uptake of <i>Plectrathus vettiveroides</i>
15	Dr. T.R.Barathkumar	Elakkiya,E	2022	Standardization of propagation techniques and estimation of genetic diversity in kalmegh ( <i>Andrographis paniculate</i> Nees.)
16	Dr.S.Madhavan	Parkavi,S	2022	Effect of auxin on rooting of Malabar nut ( <i>Adhatoda vasica</i> )
17	M.Gayathiri	Prakash,M	2022	Influence of different micronutrients on growth and yield of Turmeric ( <i>Curcuma longa</i> )

18	R.Rajeshwari	PreetiAngelin,R	2022	Effect of integrated nutrient management on growth and yield of coriander ( <i>Coriandrumsativum</i> ) cv.Surabhi
19	Dr.S.Sivasankar	Ragul,P	2022	Effect of organic amendments with foliar application of organics on growth and yield of <i>Gymnema (Gymnema sylvestre R.Br.)</i>
20	Dr.S.Venkatesan	Sumiya,F	2022	Effect of biodynamized oil cake solution on the growth and herbage yield of <i>Centella asiatica</i>
21	Dr.J.Padmanaban	Varsha,D	2022	Effect of soilless growing media and nutrients on growth and establishment of Turmeric ( <i>Curcuma longa</i> ) mother rhizomes in Plug-tray
22	Dr.G.SamlindSujin	Vigneswari.D	2022	Effect of growth regulators on rooting and sprouting of bush pepper cuttings ( <i>Piper nigrum L.</i> ) cv. Panniyur-2

#### Employment Details in PG students

Name of the Student	Academic year of completion of degree	Name of the institute if joined in Ph.D.	Employment details			
			Central Govt.	State Govt.	Private	Entrepreneur
K.Nadhiyadevi	2019	-	-	-	Assistant Professor, Adi	-

					parasakthi Agricultural College, kalavai.	
Ms.P.Indhuja	2019	-	-	-	Assistant Professor Nammazhva r College of Agriculture and Technology, Kamudi, Tamil Nadu	-
Mr. Sathishkumar	2020	-	-	-	Assistant Professor,  Nalanda Agricultural college, Trichy	-
Ms.S.Sowndharya	2020	-	-	-	Assistant Professor Nalanda Agricultural college, Trichy	-

### Salient research achievements

- The Department of Horticulture has contributed to the Horticulture sector by researching upon the need based objectives in the coastal area.
- Plantation, Spices, Medicinal and Aromatic Crops are recently gaining more importance in the world market. Department of Horticulture, Faculty of Agriculture, Annamalai University. Conducting major research on crop improvement and crop management of Plantation, Spices, Medicinal and Aromatic Crops. The following salient research finding has been made during the period from 2017 to 2022.
- The propagation techniques like sett multiplication in turmeric, seed germination & seeding vigour in areca nut, rooting and semi hardwood cutting in betel vine, standardization of propagation techniques in long pepper, seed dormancy breaking

techniques in turkey berry plant, rooting medium in Malabar nut and rooting and sprouting in black pepper has been carried out and identified the best techniques for mass multiplication of the crops.

- The use of organic nutrients like FYM, Vermicompost, neem cake and biofertilizers and INM were documented to improve the vegetative growth, yield and quality in Aloe vera, Cashew, Gymnema, Kalmegh, Red ginger, Medicinal coleus, Sacred basil, Senna, Vettiver, Turmeric, Coriander, Centella and Ambrette.
- The crop improvement work on genetic variability of turkey berry, Kalmegh and near by state tamarind were undertaken. The genotypes were collected from different zones of Tamilnadu and in and around Tamilnadu. Totally 20 genotypes were collected and the major variability were identified on morphological, physiological, yield and quality parameters.
- In turkey berry plant, the prickle less genotype and in kalmegh, brown coloured stem genotype and in tamarind, best genotypes were identified for sodic soils.

#### 6.4.9. ICT Application in Curricula Delivery

A smart class room facility, six computers with internet facility and two LCD projectors and smart TV help in making the teaching enabled with ICT in the Department. Video facilities available in Department help us to cast videos on precision farming practices pertaining to crop production and value addition, of Plantation, Species, Medicinal and Aromatic crops. PPTs are designed and updated regularly to teach the syllabus content in a way to make the students understand better. Mobile Apps and Google class room are used and students are exposed to these Apps to keep them aware of the current trends.



HERBAL PLANTS COLLECTION



TURKEY BERRY FIELD



TURMERIC FIELD



KALMEGH FIELD

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented college-Wise.

6.4.11 Since the accreditation of Programmes is related to the all India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12 Certificate (Applicable when SSR is submitted for Programme)

I, the Dean, Faculty of Agriculture, Annamalai University hereby certify that the information contained in the section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

**DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY**

Signature of Dean of the College with Date & seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
Ph.D. Agronomy

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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## 6.4. Self Study Report for the Programme

Name of the Programme: Ph.D. in Agronomy

Offered by: Department of Agronomy

### 6.4.1. Brief History of Ph.D. in Agronomy Programme

The Department of Agronomy in the Faculty of Agriculture was started as a Division in 1958 to offer courses in B.Sc., (Ag.). Later on, it was upgraded as a Department in the year 1980. The Ph.D. programme in Agronomy was started in the year 1986.

Historical Itinerary	Year of Commencement
Division of Agronomy	1958
Department Status	1980
Ph.D. in Agronomy	1986

Ph.D. in Agronomy degree programme has a total of 100 credits. The revision of the curricula was carried out with effect from the academic year 2022 – 2023 based on the ICAR fifth Dean’s committee.

### SEMESTER WISE DISTRIBUTION OF CREDIT

Semester	Major Course	Minor Course	Supporting Course	Seminar	Research	Total credit	Non credit Compulsory course
I	6	4	2	1	2	15	-
II	6	2	3	1	10	22	-
III	-	-	-	-	16	16	Research and Public Ethics
IV	-	-	-	-	16	16	MOOC
V	-	-	-	-	16	16	-
VI	-	-	-	-	15	15	-
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>	<b>100</b>	<b>-</b>

Course Code	Course Title	Credit Hours
<b>Major Courses</b>		
AGR 601*	Current trends in Agronomy	3+0
AGR 602	Recent trends in crop growth and productivity	2+1
AGR 603	Soil Conservation and Watershed Management	2+1
AGR 604	Irrigation management	2+1
AGR 605	Advances in crop ecology	2+1
AGR 606	Organic farming and precision agriculture	2+1

<b>Minor Courses</b>		
AGR 607	Recent trends in weed management	2+0
AGR 608	Integrated farming systems for sustainable Agriculture	2+0
AGR 609	Stress Crop Production	2+0
AGR 610	Crop production and system modeling	2+0
<b>Supporting Courses</b>		
COM 601	Advances in Computer Application	2 (1 +1)
STA 601	Advances in Designs of Experiments	3 (2 + 1)
AGR 691	<b>Doctoral Seminar -I</b>	1 (1 +0)
AGR 692	<b>Doctoral Seminar - II</b>	1 (1 +0)
AGR 699	<b>Doctoral Research</b>	75 (0 + 75)
<b>Non credit compulsory courses</b>		
NGC 611	Research and Publication Ethics - Contact hours: 2	-
NGC 612	MOOC - contact hours: 2	-

### **Vision**

- To impart futuristic hi-tech agricultural education, install discipline and set global standards making agricultural graduates technologically sound and ethically strong, who inturn shall improve the livelihoods and quality of farmers life, food, nutritional and bio security.

### **Goals**

- To impart quality education by adopting the best practices to train students as per emerging trends in agriculture development.
- To educate the local farmers in their goal of achieving higher productivity by solving the field issues.
- To promote research and training on sustainable development of agricultural technologies.
- To encourage the youth on entrepreneurship and Agri-business

### **Objectives**

- To impart quality education for Post-graduate students.
- To undertake research on need based location specific problems for developing suitable technologies towards augmenting crop productivity.
- To create the state of the art of technology, development and transfer to the different stake holders in agriculture.
- To extend specific support to establish agri-business startups and consultancy service to the Agro-based industries.

### Strategic plan to achieve Vision and Goal

Goals	Objectives	Implementation plan	Performance Metrics / Timeline
To impart comprehensive education to the students	<b><u>Quality Education</u></b> To create improved environment to the students to achieve the best teaching- learning process	Classes are handled by experienced faculty through classroom teaching, practical demonstration, strict periodical evaluation process	Semester-wise having 105 days duration with a mid-semester examination
To solve productivity issues through scientific research	<b><u>Transfer of Technology</u></b> To undertake research on need based location specific problems and developing technologies for crop management for sustainable productivity of crops.	Ph.D scholars are taking up research problems as part of their course besides presenting credit seminars	Advisory committee review the research periodically as per the curriculum
To promote research and training on sustainable development	<b><u>Research Collaboration and Consultancy services</u></b> To undertake research projects for new agro-chemicals	Field trials, demonstrations, model plot etc. are carried out in our experimental farm	Updating knowledge through Periodical exposure to the latest development in the agriculture sector through various research projects
To encourage the youth on entrepreneurship and Agri-business	<b><u>Student support</u></b> To extend specific support to establish agri-business startups	Encouraging the students to be a job provider rather than job seeker	Motivating the students through periodical guest lectures by agri-technocrats and subject matter specialists

### Accomplishments of the Department

At early stages, the Department was staffed by a small group of enthusiastic Agronomists. Notable persons like Dr. K. Shiva Shankar, Prof. AR. Lakshmanan, Prof. Rm. Alagappan, Dr. P.Panneerselvam, Mr.E.Thiruvarasan, Dr. G. Kuppuswamy, Dr.RM.Kathiresan Dr K.Wahab, Dr.V. Vaiyapuri, Dr.K.Thanunathan and Dr. M. Ganapathy nurtured the department with all dedication. Since June 2021, the Department under the stewardship of Dr. V. Imayavaramban, is promoting the department with all commitment and support by 39 learned staff. The present devoted team is striving hard to make the Department has attain an excellence in academic and

research activities. The alumni of the Department occupied various important positions such as IAS officers, Deans and Professors in SAUs, Principal Scientist in ICAR and marketing managers in private agro-chemical companies in India and abroad. For the past six decades the department of Agronomy has effectively produced **643 M.Sc. (Ag), 77 Ph.D. and 1 D.Sc. students.**

The Department has effectively completed research projects in advanced science frontiers and received funding from UGC- SAP, DST- FIST, DBT, BIRAC, IKP, PCRA, MNES, Ministry of coal, ICAR, DST, Ministry of Environment and Forests, IRRI, TNSCST, DBT and also from various private companies generating research funds so far to a tune of **2739.41 lakh rupees.** The Department has **international Collaborations with FAO, IRRI, IACR, Rothamsted Experimental Station, U.K., Natural Product Research Centre, USDA, Ministry of Agriculture, Iraq, Charles Strut University, Australia** and national collaborations with National Institute of Technology (Trichy), International Institute of Bio-technology and Toxicology (Chennai), Dhan Foundation, Madurai, Vedhapuri KVK and BMT KVK of Tamil Nadu.

The department has linkage and MOU's with industrial partners for curriculum design, internship, industrial tie-up, student projects, training programme, campus placement and collaborative **R&D with IRRI, Philippines, NRCWS (Jabalpur), DBT - Govt. of India, IIBAT, Padappai, NIT-Trichy, Imtrade Commodities (India), Pvt. Ltd., Nagarjuna Fertilizer and Chemicals Pvt., Ltd., Hyderabad, Netafim, Coimbatore, Tamil Nadu, M/s. Dow Agro Science, Mumbai, M/s. Bayer crop Sciences, Mumbai, M/s. BASF, Mumbai, M/s. Coromandel International Ltd., Secunderabad, Godrej Agrovet Ltd., Mumbai, M/s. Sumitomo Chemicals India Pvt., Ltd., New Delhi, M/s. Ramicides Crop Science, M/s. Syngenta India Ltd., Coimbatore, M/s. Privi life Science Pvt., Ltd., Mumbai, Deccan Chemicals Pvt. Ltd., Hyderabad, Crystal Crop Protection Ltd., UPL, Indofil, Pioneer Miyagi Ltd., and JK Pharma chemical Ltd., Tamil Nadu, Gentech crop science Ltd., Pioneer Jellice Ltd and T- Stanes, Co. Ltd., Coimbatore.**

The **Agricultural Meteorology "B" Class Observatory** was established in the year 1958 in the Annamalai University Experimental Farm. The data collected from this observatory are shared with the Indian Meteorological Department, New Delhi, the Collector of Cuddalore District, and used for academic and research work. The data from the meteorological observatory strengthens the economic and social aspects of the population living in the locality viz., irrigation department for scheduling irrigation and warning of monsoons and cyclone for general preparedness of the community. The meteorological data is available for the post graduate students and the research scholars for better understanding of risk and uncertainties in weather aberrations for decision making and their interpretation. **Official from the IMD visit yearly and inspect the maintenance of data, also an automatic weather station is established in the same location by the IMD.**

Category	Period (Upto 2016)	Last five year period (2017-2022)
Number of publications (Journal articles)	475	466
Number of publications (Seminars/Conferences/Symposia)	1029	64
Number of Books and Book chapters	62	49
Number of Funded Projects	36	78
Grant mobilization (Rs. in Lakhs)	2077.13	662.28
Number of D.Sc., Produced	1	-
Number of Ph.Ds. Produced	74	04
Number of PGs. Produced	455	159
Number of Seminars/Conferences /Workshops/ trainings Organized	8	3
Number of Awards received by the Faculty	40	85
Number of Professional visits to abroad	26	8

#### 6.4.2. Faculty Strength

Sl. No.	Posts	Sanctioned	Faculty in place (as on July 2022)	Vacant Position	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1.	Professor*	6	6	0	1
2.	Associate Professor*	12	12	0	1
3.	Assistant Professor*	21	21	0	5
	<b>Total</b>	<b>39</b>	<b>39</b>	<b>0</b>	<b>7</b>

\* Engaged in UG and PG programmes

#### Faculty deputed from other Departments to handle Common, Supporting and Non-Gradual courses

Sl. No.	Posts	Sanctioned	Faculty in place (as on July 2022)	Vacant Position	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1.	Professor*	1	1 (Statistics)	0	-
2.	Associate Professor*	-	-	0	-
3.	Assistant Professor*	1	1 (Computer science)	0	-
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>-</b>

\*Assigned responsibilities for multiple programmes

### 6.4.3. Technical and supporting staff

Sl. No.	Posts	S	F	V	Recommended	Deviation from Recommendation (Sanctioned)	Responsibility
1.	Supporting staff (Liaison Officer & Special officer)	2	2	-	1	Nil	Establishment works, Purchase and issues, Dispatch of letters, circular maintenance and Maintenance of practical class
2.	Technical Staff (Deputy farm Supdt., Technical Officer, Technical Assistant)	12	12	-	3	Nil	Farm administrative works, Maintenance of library, Lab in charge and maintenance
3.	Field Staff* (Farm worker, Gardener & Helper)	77	77	-	2	Nil	Assisting routine activities of the department, Farm field activities, Research trials
<b>Total</b>		<b>91</b>	<b>91</b>	<b>-</b>	<b>6</b>		

\*(Permanent, NMR, Casual labour)

### Credentials of the Faculty members

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications		Number of Publications (2017-2022)	
				PG	Ph.D.	Journals	Others*	Journals	Others*
1.	Dr. V. Imayavaramban Professor & Head	29	Agroforestry, Oil Seeds	15	1	40	1	7	-
2.	Dr. RM. Kathiresan Professor (Retd. On 30.06.2021)	36	Weed Science, Farming System	30	10	102	40	07	01

3.	Dr. M. Ganapathy (Retd.) Professor	35	Climatology, Agroforestry	21	5	75	28	8	7
4.	Dr. S. Natarajan Professor	32	SRI, Organic Agriculture and Irrigation management	18	3	40	15	5	2
5.	Dr.(Mrs.) A. Sundari Professor	28	Weed management and Irrigation management	20	6	42	4	2	1
6.	Dr. R. Raman Professor	28	Post-harvest Technology, Organic farming, Pulses	5	-	25	18	6	2
7.	Dr. S. Kandasamy Professor	23	Post-Harvest Technology, Cropping System	11	-	24	8	4	-
8.	Dr. M. Meyyappan Associate Professor	22	Water management, Forestry, Weed management and Cropping system	9	-	22	19	11	10
9.	Dr. S. Manimaran Associate Professor	20	Nutrient management, Weed management, Sugarcane production	9	1	19	10	10	3
10.	Dr. M. Thiruppathi Associate Professor	20	Cropping system and Irrigation Agronomy	9	-	54	14	12	10
11.	Dr. P. Sudhakar Associate Professor	20	Soil fertility, Cropping system and	9	-	15	10	5	1

			Agri. Meteorology						
12.	Dr. C. Kalaiyaran Associate Professor	20	Nutrient management, Dry farming and weed management	8	-	65	18	33	11
13.	Dr. G. Baradhan Associate Professor	19	Nutrient management, Agro meteorology	7	1	64	22	17	7
14.	Dr. S. Babu Associate Professor	18	Soil fertility and Weed Management	9	1	32	6	9	-
15.	Dr. N. Ramesh Associate Professor	19	Agro meteorology and Irrigation management	7	0	27	21	5	1
16.	Dr. S. Ramesh Associate Professor	20	Cropping system, Soil fertility and Nutrient management	9	0	79	13	24	5
17.	Dr.S.M.Suresh Kumar Associate Professor	16	Weed management and Agricultural meteorology	6	1	60	20	9	5
18.	Dr. S. Elankavi Associate Professor	17	Agronomy- Nutrient Management	8	-	45	14	8	2
19.	Dr. J. Nambi Associate Professor	17	Weed science	6	-	13	2	8	-
20.	Dr.(Mrs.) D.KumariManimuthuV eeral Assistant Professor	20	Organic Agriculture, Nutrient management	9	1	59	21	21	5
21.	Dr. K. Suseendran Assistant Professor	20	Nutrient management	6	-	34	10	17	1

			and Integrated weed management						
22.	Dr. R. Krishnamoorthy Assistant Professor	20	Organic Agriculture, Commercial crop	5	-	10	-	1	1
23.	Dr. S. Krishna Prabu Assistant Professor	19	Nutrient management	6	-	84	10	52	9
24.	Dr. M. Saravana Perumal Assistant Professor	19	Irrigation management and crop production	8	-	21	2	8	-
25.	Mr. S.R. Vinod Kumar Assistant Professor	19	Soil fertility, Cropping system	7	-	18	-	6	-
26.	Dr. G. Murugan Assistant Professor	19	Weed science, Farm mechanization	7	-	16	2	11	1
27.	Dr. R. Rex Immanuel Assistant Professor	19	Natural resource management (degraded agro-eco system Rehabilitation), Farming systems research	7	-	42	14	30	2
28.	Dr. P. Stalin Assistant Professor	19	Cropping system and integrated nutrient management	7	-	34	6	2	1
29.	Dr. P. Anandan Assistant Professor	18	Nutrient management	8	-	20	7	2	2
30.	Mr. K.P. Senthilkumar Assistant Professor	18	System of Rice Intensification	9	-	-	2	-	-
31.	Dr. K. Arivukkarasu	17	Weed science	8	-	5	2	6	1

	Assistant Professor								
32.	Dr. C. Ravikumar Assistant Professor	16	Nutrient management	2	-	40	5	23	3
33.	Dr. S. Jawahar Assistant Professor	16	Nutrient management	8	-	146	21	28	6
34.	Dr. R. Gobi Assistant Professor	16	Crop production and Agricultural meteorology	9	-	23	3	13	-
35.	Dr.A.Balasubramanian Assistant Professor	16	Crop production, Nutrient management	8	-	22	3	13	-
36.	Dr.S.Kalaisudarson Assistant Professor	16	Weed management	6	-	12	-	13	2
37.	Dr. G. Sivakumar Assistant Professor	20	Dryland farming, Organic farming	8	-	13	2	11	3
38.	Dr.A.P.SrinivasaPeru mal Assistant Professor	16	Weed management, crop cultivation	7	-	12	3	10	-
39.	Dr. A. Karthikeyan Assistant Professor	14	Weed management, Nutrient Management, Sugarcane production technology	5	-	11	26	3	2
40.	Dr.G.B. Sudhagar Rao Assistant Professor	14	Nutrient Management, crop production	6	-	46	10	13	8

### Awards/ Recognitions & Abroad visits of the Faculty members (2017-2022)

Sl. No.	Name of the Faculty	Awards/Recognitions	Countries visited & purpose
1.	Dr.Rm.Kathiresan	Heroes of Indian Agriculture (MSIAA 2017) Award AIASA Harit Puraskar Award, 2018	Nepal (2018) - Project discussion
2.	Dr. R. Raman	Academic Excellence Awards 2021	Japan (2019) - International conference Srilanka (2019) – Expert member visit
3.	Dr.S.Manimaran	Outstanding Agronomist Award by Green Agri Professional Society, Dhanbad, 2019 Star performer, Career college, Bhopal,MP 2021 Best Researcher – Weed Management, 2021	Sri Lanka (2018) - International conference
4.	Dr.M.Thiruppathi	Young Scientist Award, 2019 Distinguished Scientist Award, 2021	Thailand (2019) - International conference
5.	Dr.P.Sudhakar	First price for Best poster presentation,2017 Excellence in research award by Green Agri Professional Society, Dhanbad, 2019 Recognition Award for the services rendered in release of AU1- GSR Variety, 2021 National Best Scientist Award 2021 in Agronomy M.S. Swaminathan Award, 2022 ICETMR, 2022	Sri Lanka (2018) - International conference
6.	Dr. C. Kalaiyaran	Best Teacher Award, 2022	
7.	Dr.G. Baradan	Best Scientist Award 2018 Distinguished Scientist Award, 2019 Best researcher award by ICEACBS-2020 Best oral presentation in international e-conference, 2021 National Best Researcher Award 2021 Catch of the Day Competition Winner, 2021 Dr. Rajendra Singh Paroda Award 2022	Sri Lanka (2018) - International conference
8.	Dr.S.Babu	Best oral presentation award, 2019 Best Paper Award, 2020 Best Paper Award, 2020	
9.	Dr.N. Ramesh	Best Scientist Award by PEARL foundation, 2020 Dr.AP.J. Abdul kalam Research excellence	

		Award, 2021	
10.	Dr. S. Ramesh	Outstanding Scientist award,2019 Best Researcher Award, 2021 National Best Researcher Award – 2021 Outstanding Agronomist Award, 2021 Best Scientist Award, 2022	
11.	Dr S. M. Suresh Kumar	Scientist of the year award, 2019 Best Scientist award, 2019 Best Scientist award, 2020 Best oral presentation award, 2021 Certificate of Star Performer, 2021 Best Researcher award, 2021 Best and Creativity Award, 2022	Sri Lanka (2018)- International conference
12.	Dr.S. Elankavi	Best Researcher Award, 2020	
13.	Dr. J.Nambi	Distinguished Scientist Award, 2018 Best Associate Professor Award, 2020 Award of Recognition, 2020 Scientist of the year Award, 2021 Best Oral Presentation Award, 2021	
14.	Dr. D.Kumari Manimuthu Veeral	Best researcher Award, 2018 Best scientist Award, 2019	
15.	Dr. K. Suseendran	Excellence in Research Award, 2019 Best Researcher Award, 2019. Special Recognition under Outstanding Scientist by AIRF, 2019	
16.	Dr.M. Saravanaperumal	Best Scientist Award, 2020	
17.	Dr. R. Rex Immanuel	Outstanding Agronomist Award by Green Agri Professional Society, Dhanbad, 2019 Excellence in Research Award, Puducherry, 2020	
18.	Dr. P.Stalin	Distinguished Scientist Award, 2019 Excellence in Teaching Award, 2019 Best Oral Presentation Award, 2019 Best Researcher Award, 2020	
19.	Dr. P.Anandan	Best mentor award, 2020 Best oral presentation, 2020	
20.	Dr. K. Arivukkarasu	Outstanding Scientist, 2019 Adarsh Vidya Saraswathi Rastriya Puraskar (National Award of Excellence 2019)	

		<p>Best scientist Award, 2020</p> <p>Young professional Award, 2020</p> <p>Best Young Scientist Award, 2021</p> <p>Best oral presentation award, 2021</p> <p>Nation Builder Award-2021</p> <p>National Education Excellence Acheivers Award 2022</p> <p>Fellow- Bose science society, 2022</p>	
21.	Dr. C. Ravikumar	<p>Best oral presentation, 2019</p> <p>Best Paper Award, 2021</p> <p>Best Faculty Award, 2022</p>	
22.	Dr.S.Jawahar	<p>Best Researcher Award, 2018</p> <p>Outstanding Scientist Award – Arunai International Research Foundation, 2019</p> <p>International Highest Publication for the year, 2020</p> <p>Dr. CV Raman International Innovative Research Award</p>	
23.	Dr.R.Gobi	<p>Young Scientist Award by Madhumitha foundation, 2019</p> <p>Excellent Paper Award, 2017</p>	
24.	Dr.A. Balasubramaniam	<p>Excellence research Award by Madhumitha foundation, 2019</p> <p>Best poster presentation Award, Annamalai University, 2020</p>	
25.	Dr. S. Kalaisudarson	<p>Best Researcher State Award, 2019</p> <p>Best researcher Award – Puducherry, 2020</p>	
26.	Dr. G. Siva Kumar	<p>Excellence in Teaching Award, 2019</p> <p>Best Researcher, 2021</p> <p>World book of records *Longest Intl. Conference of 150 hours non stop presentation, 2020</p>	
27.	Dr.AP. Srinivasa Perumal	<p>Excellence in teaching award by SIRI Society, 2019</p> <p>Best researcher state award by Bahujana Sahitya Academy, 2019</p> <p>Excellence in Research Award, Puducherry, 2020</p>	
28.	Dr. A. Karthikeyan	<p>Best oral presentation Award - Life Science Society of Hyderabad, 2019</p>	
29.	Dr. GB. Sudhagar Rao	<p>Best paper award, 2019</p> <p>Indo Asian best agronomist award, 2020</p>	

**List of funded projects (2017 to 2022)**

	Type of Projects	Total out lay (in Lakh Rupees)
A	Government funded projects	329.87
B	Industrial funded projects	332.41
	Grand Total	<b>662.28</b>

Sl. No.	Title of the Project	Name of the Principal Investigator/ Co-Investigator	Period	Sponsoring Agency	Amount Sanctioned (in Lakh Rupees)
1	Annamalai Rice + Fish + Poultry Farming System for Improving Nutrition and Livelihoods of Small farmers in Nepal	Dr. RM. Kathiresan & Mr. Badri Narayan Chaudri, CAA, Nepal (Along with Interdisciplinary a team of 13 scientists)	2017-2019	USAID & IKP	120.00
2	Agronomic Integration of Technologies for Productivity management and Optimal Water Use in Wetlands of Cauvery River Delta	Dr. RM. Kathiresan (With an Interdisciplinary Team of 13 Scientists & Dr. A. Ramesh, IIBAT and Dr. K. Revathi, Ethiraj College for Women, Chennai)	2018-2021	DST	209.87
<b>Total (A)</b>					<b>329.87</b>

Sl. No.	Title of the Project	Name of the Principal Investigator/ Co-Investigator	Period	Sponsoring Agency	Amount Sanctioned (in Lakh Rupees)
1	Bio-efficacy studies of new herbicides viz., Lumax and Atrazine in Maize, Basmati and Bensulfuran in Rice, Atrazine in Sugarcane and Diquat dibromide in Cotton for weed control	Dr. S.Manimaran / Dr. S.Ramesh	2014-2017	Syngenta India Ltd.	7.74
2	Bio-efficacy studies of new herbicides viz., Krismat 75 WG in sugarcane and Atrazine in Maize for weed control with succeeding crop.	Dr. S.Manimaran / Dr. S.Ramesh	2015-2017	Syngenta India Ltd.	3.35
3	Bio efficacy and Phytotoxicity studies of new herbicides viz., CMHH 142 on Rice and CMHH 135 on Soyabean including succeeding crops	Dr. S. Manimaran/ Mr. S.R.Vinodkumar	2015-2017	Coromandel International Ltd.	3.90
4	Evaluation of new herbicide	Dr. RM. Kathiresan	2015-2017	M/s. Anu products Limited	1.00
5	Soil fertility evaluation of bio - efficacy and phytotoxicity of coded herbicides in comparison to standard treatments on transplanted rice as pre- emergence	Dr. K.Thanunathan/ Dr. M.Thiruppathi	2016-2017	Crystal Crop Protection Pvt Ltd., New Delhi.	1.95
6	Bio efficacy trials of coded herbicides on transplanted rice as pre-emergence and late post emergence	Dr. K. Thanunathan/ Dr. M. Thiruppathi	2016-2018	Crystal Crop Protection Pvt Ltd., New Delhi	9.75
7	Bio - efficacy and Phyto toxicity of Flumioxazin 50 % SC against major weeds in sugarcane and its effect on succeeding crop	Dr. P.Sudhakar/ Dr.S.Ramesh	2016-2018	Sumitomo chemicals India Pvt Ltd., New Delhi.	3.90

8	Bio efficacy of Gibberellic acid 0.01% Gr (Progibb) for enhancement of growth & yield in Rice and its effect on succeeding crop	Dr. P. Sudhakar/ Dr. S. Elankavi	2016-2018	Sumitomo chemicals India Pvt Ltd., New Delhi.	3.64
9	Bio efficacy & phytotoxicity evaluation of Flumioxazin 50% SC against major broad leaf & Grassy weeds in groundnut & its effect on succeeding crop	Dr. P. Sudhakar / Dr. S. Ramesh	2016-2018	Sumitomo chemicals India Pvt. Ltd., New Delhi.	3.90
10	Bio-efficacy & phytotoxicity of Paraquat dichloride 24%SL against total weed control in Tea & Coffee	Dr. S.Manimaran, Dr. P.Sudhakar & Dr. N.Ramesh	2016-2019	Syngenta India Ltd.	5.20
11	Bio-efficacy and phytotoxicity of Paraquat dichloride 24%SL against total weed control in Sugarcane & Cotton and its effect on succeeding crop	Dr. S.Manimaran/ Dr.P.Sudhakar & Dr.N.Ramesh	2016-2019	Syngenta India Ltd.	6.80
12	Studies to determine the effect of CAM modulator on the expression, growth and development of field and vegetable crop	Dr.G.Baradhan, Dr.S.M.Suresh Kumar & Dr.S.Murugan	2017-2018	T Stanes & Co.	2.08
13	Evaluation of new herbicide	Dr. RM. Kathiresan	2017-2018	Bharat Rasayan Limited	6.50
14	Evaluation of Bio efficacy & Phytotoxicity of Carfentrazone-ethyl 40% DF against Ludiwigia Parviflora, Digeria arvensis, Phyllanthus niruri, Eclipta alba in Direct seeded rice	Dr. RM. Kathiresan	2017-2018	Bharat Rasayan Limited	1.50
15	Evaluation of Bio efficacy & Phytotoxicityof Topramezone 336 G IISC against the weed flora of Maize	Dr. RM. Kathiresan	2017-2018	Bharat Rasayan Limited	1.50

16	Bioefficacy, phytotoxicity and residue trials of Halosulfuron Methyl 75% WG against major weeds of Sugarcane	Dr. S.Manimaran/ Dr. S.Elankavi	2017 -2019	Coromandel International Ltd.	1.69
17	Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	Dr.G.Baradhan, Dr.S.M.Suresh Kumar & Dr.S.Ramesh Kumar	2017-2019	T Stanes & Co.	4.42
18	Bio efficacy studies of Pepto on the growth, metabolism and yield of field rice	Dr.G.Baradhan Dr.S.M.Suresh Kumar & Dr.S.Ramesh Kumar	2017-2019	T Stanes & Co.	1.10
19	“Bio –Efficacy and phyto toxicity evaluation of LAATU premium (Gibberellic Acid 0.001% Gr) as plant growth regulator on growth and yield of rice and its effect on succeeding crop” for two seasons	Dr.P.Sudhakar Dr.S.Ramesh & Dr. B.Sunil Kumar	2017-2019	Sumitomo chemicals India Pvt Ltd.	5.04
20	Bio efficacy and Phytotoxicity trials of Sodium Para-Nitrophenolate 0.3%SL (Plant Growth Regulator) in Rice	Dr.K.Suseendran& Dr.R.Kannan	2017 -2019	M/s NACL Industries Limited, Hyderabad.	2.99
21	Evaluation of bio efficacy of new herbicide Clethodim 12% EC for controlling of grassy weeds in cotton, onion & soybean and its phytotoxicity effect on succeeding crops	Dr. R. Raman	2018 -2019	Deccan fine Chemicals Pvt. Ltd.	7.50
22	Physico-chemical & biological analysis of soil samples of CCP 90072	Dr. M. Thiruppathi	2018-2019	UPL Pvt. Ltd.,	1.00

23	Studies on Bio-efficacy and phytotoxicity of Homobrossionloide 0.04% EC w/w in paddy, groundnut and tomato	Dr.R.Raman	2018 - 2020	Godrej Agrovvet Ltd.,	9.00
24	Bioefficacy and phyto toxicity studies of LATTO for enhancement of growth and yield in tomato and its effect on succeeding crop	Dr.P.Sudhakar& Dr.S.Elankavi	2018-2020	Sumitomo chemicals India Pvt Ltd., New Delhi.	3.90
25	Bio efficacy & phytotoxicity evaluation of LAATU (Gibberlic acid 0.001% Gr) as plant growth regulator on growth and yield of rice and its effect on succeeding crop	Dr. P. Sudhakar, Dr.S. Ramesh & Dr. B.Sunilkumar	2018-2020	Sumitomo chemicals India Pvt Ltd., New Delhi.	5.04
26	Bioefficacy & phytotoxicity of homobrossionloide 0.04% EC w/w inPaddy, Groundnut & Tomato	Dr. R. Raman & Dr.R.Krishnamoorthy	2018-2020	Godrej Agrovvet Ltd.	9.00
27	Bio efficacy & phytotoxicity evaluation of IHCO12 against major weeds in Maize and its effect on succeeding crop	Dr. P. Sudhakar & Dr. S. Elankavi	2018-2020	Indofil Chemicals Ltd, Mumbai.	4.94
28	Bioefficacy, phytotoxicity and residue of Ethalfluralin 36% EC on Cotton against monocot and dicot weeds	Dr. S.Manimaran & Dr. P.Sudhakar	2018-2020	Saraswati Agro Chemicals (India) Pvt. Ltd & Gowan India Ltd.	3.50
29	Studies on bio efficacy on Non crop area & residue effects of GOD-H007 43% SG	Dr. R. Raman & Dr. S. Babu	2018-2020	Godrej Agrovvet Ltd.,	3.00
30	Effect of Active ORG on the nutrient availability, growth, metabolism and yield of Tomato	Dr.G.Baradhan Dr.S.M.Suresh Kumar & Dr.S.Ramesh Kumar	2018-2020	T Stanes & Co.	1.36

31	Effect of WAKS-16 on the nutrient availability, growth, metabolism, and yield in tomato/rice	Dr.G.Baradhan Dr.S.M.Suresh Kumar & Dr.S.Ramesh Kumar	2018-2020	T Stanes & Co.	2.73
32	Bio – efficacy and phytotoxicity evaluation of coded herbicide “CCP – 90072” in comparision to standard treatment on transplanted rice as pre – emergence.	Dr. M. Thiruppathi	2018-2020	Crystal Crop Protection Ltd., Delhi	5.05
33	Evaluation of Bio-efficacy, Phytotoxicity and effect on succeeding crops of Council prime (Triafamone 200 SC) in direct seeded rice	Dr. R.Gobi & Dr.A. Balasubramanian	2018-2020	Bayer CropScience, Trichy	5.07
34	Bio-efficacy and Phytotoxicity evaluation of Ingrain (Abscisic Acid) for enhancement of grain filling and yield in Rice and its effect on succeeding crop	Dr. P.Sudhakar	2018-2020	Sumitomo chemicals India Pvt Ltd., New Delhi	5.07
35	Bio efficacy toxicity evaluation of Glufosinate Ammonium 13.5% SC against weed flora in Grapes & its effect on succeeding crop	Dr. P. Sudhakar	2018-2021	UPL Pvt. Ltd.,	4.44
36	Bio -efficacy and phyto toxicity evaluation of Flumioxazin 50 % SC against major broad leaved and grassy weeds in gram (Chickpea) and its effect on succeeding crops	Dr. P.Sudhakar	2018-2021	Sumitomo chemicals India Pvt Ltd., New Delhi	5.07
37	Evaluation of bio efficacy of silica granules and silixol rice on productivity of rice	S.Jawahar	Jan – June, 2019	Privi Life Sciences Pvt.Ltd., Navi Mumbai	2.25
38	Bio efficacy trials on Orthosulfamuron 50% WG on transplanted rice	Dr. S. Elankavi &	2019-2020	Nichino chemical	2.34

		Dr. P. Sudhakar		India Pvt. Ltd.,	
39	Bio efficacy and phytotoxicity evaluation of Orthosulfamuron 0.6% + Pretilachlor 6% GR on transplanted rice and its effect on succeeding crops	Dr. P. Sudhakar & Dr. SM. Suresh Kumar	2019-2021	Nichino chemical India Pvt. Ltd.	4.68
40	Evaluation of bio efficacy of PIX 10006 43% WG against major weeds in transplanted rice and its effect on succeeding crop	Dr. S. Ramesh & Dr. P. Sudhakar	2019-2021	PI industries Ltd, Mumbai	4.00
41	Evaluation of silica-based formulation for their efficacy & phytotoxicity on sugarcane	Dr. S. Babu & Dr. A.Karthikeyan	2019-2021	Advance pesticides, Nashik	1.95
42	Evaluation of silica-based formulation (liquid) and bactericide for their efficacy & Phytotoxicity on (1. Direct seeded rice plus fallow crop of black gram & 2. Transplanted rice plus fallow crop of green gram)	Dr. S. Babu & Dr. A. Karthikeyan	2019-2021	Advance pesticides, Nashik	5.20
43	Evaluation of Bio-efficacy of crop tiger on paddy and sugarcane	Dr.R.Raman	2019-2021	Peptech Bio Science	3.50
44	Bio efficacy & Phytotoxicity of Rinscor + Sofit 310 Ec (Pretilachlor 300 + Flopyrauxifen benzyl 10) against total weed control in wet direct sown rice and its effect on succeeding crop	Dr.S. Manimaran & Dr. G. Baradhan	2019-2021	Syngenta India Ltd.	2.95
45	Bio-efficacy and phyto toxicity of Rinskor+Sofit 310 EC (Pretilachlor 30% w/v +Florpyrauxifen-benzyl 1% w/v) against total weed control in Transplanted Rice	Dr. S.Manimaran / Dr. N.Ramesh	2019-2021	Syngenta India Ltd.,	5.05

46	Evaluating of bio-efficacy of Pix 10006 43% Wg against major weeds in transplanted rice and its effect on succeeding crop	Dr. P.Sudhakar	2019-2021	PI Industries Ltd. Gurgaon	4.00
47	Evaluation of Physico-Chemical and biological analysis of soil samples	Dr. M. Thiruppathi & Dr. R. Rex Immanuel	2020-2021	Crystal crop protection Ltd.	1.00
48	Evaluation of studies on bioefficacy of CROP TIGER on paddy & sugarcane	Dr. R. Raman & Dr.R.Krishnamoorthy	2020-2021	Petech bio science	7.00
49	Bio-efficacy and Phytotoxicity evaluation of flumioxazin 50% SC against mixed weed flora in Tea and non-cropped area	Dr. P.Sudhakar	2020-2022	Sumitomo chemicals India Pvt Ltd., New Delhi	5.46
50	Bio-efficacy trial Carfentrazone ethyl 40% DF against major weeds of Direct seeded of Paddy crop	Dr. M. Thiruppathi	2020-2022	Crystal Crop Protection Ltd., New Delhi	1.65
51	Bio-efficacy trial Bensulfuron methyl 60% DF as post-emergence herbicide against major weeds of transplanted Rice crop	Dr. M. Thiruppathi	2020-2022	Crystal Crop Protectio n Ltd., New Delhi	1.65
52	Bio-efficacy trial Bensulfuron methyl 60% DF as pre-emergence herbicide against major weeds of transplanted Rice crop	Dr. M. Thiruppathi	2020-2022	Crystal Crop Protection Ltd., New Delhi	1.65
53	Studies on Bio Efficacy and photo toxicity of Direct Seed Rice and carry over and residue effects GOD H008	Dr. R. Raman	2020-2022	Godre Agrovet Ltd.	4.0

54	“Effect of Sea weed and humic acid extract (Talwar Gold) on the growth and yield of black gram	Dr.G.Baradhan & Dr.S.M.Suresh Kumar	2021-2022	M/s. Gentech Crop Sciences Private Limited, Hyderabad	1.05
55	Bio efficacy evaluation of Bio stimulant Macarena on Soybean, Tomato & Cotton and Brique on Chilli and Tomato	Dr. R. Raman	2021-2022	UPL Ltd.	10.5
56	Bio efficacy evaluation of Bio stimulant Gaxy on Cotton & Grapes and Opteine on Soybean, Groundnut and Pilantus on Tomato	Dr. R. Raman	2021-2022	UPL Ltd.	10.5
57	Phytotoxicity Evaluation of herbicides GPH 1521 and GPH 1621 on Soybean	Dr. R. Raman	2021-2022	UPL Ltd.	15
58	Bio efficacy evaluation of Bio stimulant Biosurge on Paddy, Soybean and Cotton	Dr. R. Raman	2021-2022	UPL Ltd.	6.3
59	Bio efficacy and phytotoxicity evaluation of herbicide GPH 1821 on Onion	Dr. R. Raman	2021-2022	UPL Ltd.	7.5
60	Bio efficacy evaluation of Bio stimulant – Bioclassic on Chilli and Soybean	Dr. R. Raman	2021-2022	UPL Ltd.	4.2
61	Standardization of bone sludge compost for maximizing the yield of field crops	Dr. G.Sivakumar	2021-2022	Pioneer Jellice India Pvt. Ltd, Cuddalore	5.46
62	“Bio - efficacy and phyto toxicity evaluation of Imazosulfuron 1% + Pretilachlor 8% GR against grassy weeds, sedges and broad-leaved weed prevalent in rice crop and its effect on succeeding crop for two seasons”	Dr. P.Sudhakar	2021-2023	Sumitomo chemicals India Pvt Ltd., New Delhi	5.33

63	Bio-efficacy and Phytotoxicity Evaluation of coded Herbicide CCP-8175 on Onion as Post-emergence (25-30 days after transplanting) in Onion zones of Tamil Nadu	Dr. M. Thiruppathi	2021-2023	Crystal Crop Protection Ltd., New Delhi	4.0
64	Bio-efficacy and phtotoxicityevaluation of “Mesotrione solo (Callisto)” against total weed control in sugarcane and its effect on succeeding crop”	S.Manimaran C.Ravikumar	2021-2024	Syngenta India Ltd.,	5.00
65	Evaluation Bio-efficacy and Phytotoxicity evaluation of Glyphosate 41% SL IPA Salt Herbicide in comparison to standard treatment on tomato and Mango Orchard	S. Babu	2021-2024	Crystal crop protection	9.60
66	Evaluation of Soil Physico-Chemical study for Carfentazone ethyl 40% DF.	Dr. M. Thiruppathi	2022-2023	Crystal Crop Protection Ltd., New Delhi	1.20
67	Evaluation of the bioefficacy of Dr.ROOT on the yield of onion	Dr.G.Baradhan & Dr.S.M.Suresh Kumar	2022-2023	T Stanes & Co Ltd.	1.56
68	Bio-efficacy and phytotoxicity evaluation of BiovitaX (Granule) on growth, yield and quality of rice” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s PI Industries Ltd. Gurgaon	2.275
69	Bio-efficacy and phytotoxicity evaluation of BiovitaX (Liquid) on growth, yield, and quality of rice” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s PI Industries Ltd. Gurgaon	2.275
70	Bio-efficacy and phytotoxicity evaluation of Humisol on growth, yield, and quality of rice” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s PI Industries Ltd. Gurgaon	2.275
71	Bio-efficacy and phytotoxicity evaluation of SIAPTON 10L on growth, yield, and quality of Grapes” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s Jivagro Ltd. Mumbai	2.275

72	Bio-efficacy and phytotoxicity evaluation of SIAPTON 10L on growth, yield, and quality of rice” for two seasons	PI - Dr. P.Sudhakar	2022-2024	M/s Jivagro Ltd. Mumbai	2.34
73	Evaluation of Bio efficacy for a post emergence herbicide 2,4-D Sodium Salt 95% against weed flora in Sugarcane	S.R. Vinod Kumar	2022-2024	Atul India Ltd., Gujarat	6.5
74	Testing new herbicide in rice for its Bio-efficacy, phytotoxicity and residue analysis	S.R. Vinod Kumar	2022-2024	Atul India Ltd., Gujarat	2.0
75	Bio-efficacy, phytotoxicityand residue studies of CMHH 142 against weeds in Paddy in Transplanted and Direct seeded rice and its effect on succeeding crop	S.Manimaran / G.Baradhan	2022-2025	Coromandel International Ltd.,	6.66
76	Bio-efficacy, phytotoxicityand residue studies of CIX – 4001 against weeds in Paddy in Transplanted and Direct seeded rice and its effect on succeeding crop	S.Manimaran / S.M.Sureshkumar	2022-2025	Coromandel International Ltd.,	6.66
<b>Total (B)</b>					<b>332.41</b>

#### 6.4.4. Classrooms and Laboratories

The Department has well equipped high-tech classroom and Instrument laboratories with wide range of instruments and provide hassle free experience in learning and research. Nine staff rooms and a separate storeroom is available in addition to the facilities furnished.

Sl. No.	Facility	No.	Area (sq. ft)	Description
1.	Prof. G Kuppusamy PG hall	1	625	A fully air-conditioned classroom with smart TV (android) along with the high-tech hall with 50 numbers of seating capacity.
2.	PG - Analytical Lab (Capacity - 20)	1	800	Laboratory with all basic instrumentation facilities viz., Micro-kjeldahl, 3 Macro- kjeldahl, 3 Soxhlet apparatus, 1 Automatic nitrogen/ Protein estimation system. 1 Centrifuge 1
3.	PG - Instrumentation Lab (Capacity - 15)	1	300	pH meter, 1 EC meter, 1 Atomic Adsorption Spectrophotometer, 1



PG - Analytical Lab

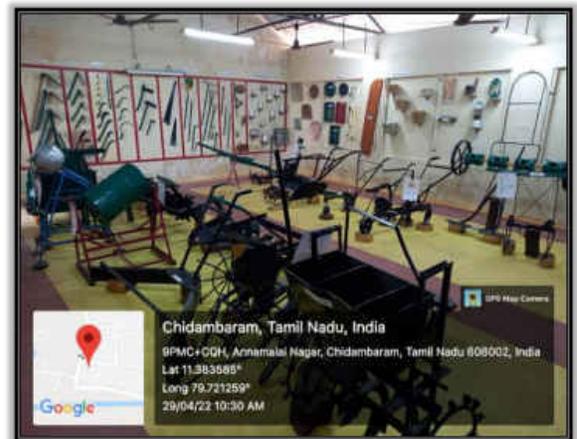


PG - Instrumentation Lab

Sl. No.	Facility	Number	Area (sq. ft)	Description
4.	Meteorology Observatory Museum Observatory	1	252	Climatological atlas, Maximum and minimum thermometer 3 Wet and dry thermometer 2 Soil thermometer 3 Grass minimum thermometer 1 Whirling psychrometer 1 Dew Gauge 1 USWB open pan evaporimeter 1 Hygrometer 1 Thermo hygrograph 1 Sunshine recorder 1 Wind vane 1 Anemometer and Model observatory 1
5.	Farm machinery lab	1	600	To identify different tools and implement models.
6.	Weed Science & Irrigation Lab	1	600	To identify different Weeds, Herbicides, Sprayers, Irrigation models, Soil moisture measuring devices etc.,
7.	Agri-input Museum	1	800	Exhibits of seeds of important field crops, fertilizers, manures and other inputs



Meteorology Observatory Lab



Farm tools and implements Lab

Sl. No.	Facility	Number	Area (sq. ft)	Description
1.	Prof. Rm Alagappan Department Library	1	625	The Department Library is provided with 1477 text and reference books, 614 PG, 74 Ph.D. and 1 D.Sc thesis, more than 12 national and 15 international journals with 100 bound back volumes, journals, UG project report 400. E-Journals – 226, Complimentary annual report 37, Complimentary journal 40, CD- 91.
2.	Prof. A R Laxmanan farmers Training Hall	1	450	Conducting training to the Government Agricultural Officers and farmers. (Seating capacity – 60)
3.	Prof. Rm Kathiresan Conference Hall	1	495	Conducting meeting with faculty, dignitaries & progressive farmers. (Seating capacity – 25)



Prof. Rm Kathiresan Conference Hall



Prof. Rm Alagappan Department Library

#### 6.4.5. Conduct of Practical and Hands-On-Training

Students are engaged directly in the different field work *viz.*, methods of ploughing, sowing, transplanting, fertilizer application, pressurized irrigation systems, handling laboratory equipment, mechanized agriculture and using meteorological instruments for observation and recording. Models on farming systems, agro-forestry, watershed and irrigation methods are

developed by the students for their course curriculum. Herbarium collection on crop and weed samples are done for the respective courses. Term papers and assignments are periodically given and evaluated. Field and industrial visits are regularly scheduled for every semester as part of the curriculum.

#### 6.4.6. Supervision of students in Ph.D programme

During their research, each Ph.D student shall have an advisory committee which is formed before end of the first semester to help the student in carrying out the assigned thesis research program. The advisory committee shall comprise of a chairman and two members, of which one member shall be from the major Discipline and another from any other Discipline in the related field of thesis research. The advisory committee will counsel the student in the selection of minor courses and seminar topics. The research student is continuously monitored by periodical review of work done and verification of data. At the end of each semester the evaluation of research is done by the advisory committee members.

Sl. No.	No. of PG recognized teachers	Academic year	Intake of students	Students-Teacher ratio
1	36	2017-2018	5	1:7.2
2	36	2018-2019	5	1:7.2
3	37	2019-2020	14	1:2.6
4	37	2020-2021	10	1:3.7
5	37	2021-2022	4	1:9.3

#### Ph.D. in Agronomy Dissertations

Sl.No.	Name of the guide	Name of the student	Title of the thesis	Year of Submission
1	Dr. M. Ganapathy	C. Ravikumar	Effect of integrated nutrient management on CO <sub>2</sub> and CH <sub>4</sub> Fluxes in rice, sunflower production system	2019
2	Dr. S. Manimaran	V. Prakash	Nutrient management strategy on maize, Pulses intercropping system	2021
3	Dr. G. Baradhan	M.S. Bagavathy	Influence of different rice establishment methods and weed management practices on growth, yield and weed dynamics of rice	2022

#### 6.4.7. Feedback of stakeholders (Students, farmers, company, parents etc.)

An effective Mentor – mentee system is functioning at department level to get feedback from the students regarding curricula and extracurricular activities. Individual staff members obtained feedback from the students regarding content delivery, addition and deletion etc., at the end of each semester. The feedback obtained is discussed in the Department staff meeting for necessary improvement. Feedback from nearby farming communities is regularly obtained by field visits and farmers meetings and from government department of agriculture. The farmer’s feedback is used for undertaking need based research to solve the issues. Informal feedback from entrepreneurs and agro industries are obtained during reunion meet and visit of industrialist to the campus. Based on the input, structural modifications in the syllabus, importance, distribution and multi-disciplinary courses are structured.

#### Action Taken Report (ATR)

1. As per the request of students Ph.D Scholars waiting hall was arranged
2. Special lectures on various fields of knowledge and skills organized, through AAA (Annamalai Agronomic Association)
3. As per the request, Agricultural periodicals and daily and weekly news magazines were arranged to be available in the department library.
4. Lecture hall was equipped with ICT facilities for efficient learning
5. QR code was developed to know real time weather data for efficient learning
6. Demonstration unit for pressured irrigation system was established
7. Number of field visits in the practical classes were increased

#### 6.4.8. Student intake and attrition in the programme for the last five years

Name of the programme	Actual students admitted in the last five years						Attrition (%)					
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Ph.D. Agronomy	5	5	5	14	10	04	0	0	0	0	0	0

### List of students qualified in ICAR NET Exam

Sl. No.	Name of the Students	Roll Number	Year of Passing
1	Ms. Suganya. R	4094332529	2021
2	Ms. Elakkiya Priya. P	4094332700	2021
3	Ms. Vishudevi. S	4094336849	2021
4	Ms. Guda Bhargavi	4094333163	2021
5	Ms. Mege Duchok	4094335806	2021
6	Mr. Anbarasan. S	4114336542	2021
7	Mr. Bada Maheswara Reddy	4094336722	2021
8	Mr. Prakash V	4094334319	2021

### PLACEMENT DETAILS

S.No.	Student Name	Enrolment Number	Cell Number	Current Position	Year of Joining
.	V. Prakash	1650030001	8148310890	Associate Professor, Bharat Institute of Higher Education and Research, Chennai	2021

### 6.4.9. ICT application in curricular delivery

ICT tools viz., computer, Internet, Google forms, WhatsApp messenger, You Tube, Google drive, Google classroom, cloud sharing is some of the methods employed in handling classes for the students within a given time frame. Students' dissertation materials are shared by the cloud drive and with the teachers for further modification. As for as possible, out of office timing, students are communicated and interacted through ICT practical instructions for the next class are being shared via internet. PowerPoint presentation of a teacher is shared with the students well in advance, so that it would be very easy in the classroom to follow it. ICT is fast replacing the traditional methods. Apart from the above; college is provided with PG computer lab. The Ph.D students are utilizing the facility.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean .....**A.Angayarkanni**..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
Ph.D. Agri-Business Management

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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#### 6.4. Self Study Report for the Programme

Name of the Programme: Ph.D Agri -Business Management

Offered by: Department of Agricultural Economics

##### 6.4.1. Brief History of Ph.D Agri -Business Management Programme

The Department of Agricultural Economics was established in 1993 which had its beginning as Division of Agricultural Economics in 1987 with an aim to develop a strong programme in agricultural and rural development with emphasis on teaching, research and extension. Ph.D Agri -Business Management programme was started during 2007.

Historical Itinerary	Year of Commencement
Division of Economics	1987
Department Status	1993
Post Graduate Programme in Agri Business Management	2007
Ph.D. (Agri Business Management ) Programme	2007

For the Ph.D Agri -Business Management degree programme, a total of 100 credits are offered which includes 12 credits for major courses, 6 credits for minor courses, 5 credits for supporting courses, 2 credits for seminar and 75 credits for doctoral research. The latest revision of the curriculum was carried out in the academic year 2021-22, which would be effected from academic year 2022-23.

### Distribution Pattern of Courses and Credit

<b>Semester</b>	<b>Major Courses</b>	<b>Minor Courses</b>	<b>Supporting Courses</b>	<b>Seminar</b>	<b>Research</b>	<b>Total Credits</b>	<b>Non Credit Compulsory Courses</b>
<b>I</b>	6	4	2	1	2	<b>15</b>	-
<b>II</b>	6	2	3	1	10	<b>22</b>	-
<b>III</b>	-	-	-	-	15	<b>15</b>	Research and Publications Ethics
<b>IV</b>	-	-	-	-	16	<b>16</b>	MOOC
<b>V</b>	-	-	-	-	16	<b>16</b>	-
<b>VI</b>	-	-	-	-	16	<b>16</b>	-
<b>Total Credits</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>	<b>100</b>	-

## Ph. D. Agri Business Management

### Distribution of Courses

Sl. No.	Course Code	Course Title	Credit Hours
<b>Compulsory Major Courses</b>			<b>12</b>
1	ABM 601	Econometrics for Agri Business	2+1
2	ABM 602	Research Methods- I	2+1
3	ABM 603	Research Methods-II	2+1
<b>Optional Major Courses</b>			
4	ABM 604	Agri Input and Output Marketing	2+1
5	ABM 605	Advances in Business Economics	2+1
<b>Minor Courses</b>			<b>6</b>
1	ABM 606	Advanced Applications in Marketing Management	2+0
2	ABM 607	Rural Marketing and Consumer Behaviour	2+0
3	ABM 608	Advances in Financial Management	2+0
4	ABM 609	Value Chain Management in Agribusiness	2+0
5	ABM 610	Agri-Entrepreneurship and Corporate Governance	2+0
6	ABM 611	International Food and Agri Business	2+0
7	ABM 612	Natural Resource Management	2+0
8	ABM 613	Knowledge Management	2+0
9	ABM 614	Communication for Management Teachers	2+0
<b>Supporting Courses</b>			<b>5</b>
1	COM 601	Advances in Computer Applications	1+1
2	ABM 615	Advanced Operations Research	2+1
<b>Seminar</b>			<b>2</b>
1	ABM 691	Doctoral Seminar I	0+1
2	ABM 692	Doctoral Seminar II	0+1
<b>Research</b>			<b>75</b>
1	ABM 699	Doctoral Research	0+75
<b>Non Credit Compulsory Courses</b>			
	RPE	Research and Publication Ethics (2+0)	2+0
		MOOC (2+0)	2+0
<b>Grand Total</b>			<b>100</b>

## Vision

- To establish a Centre for Entrepreneurship Development
- To establish a Centre for Agri-Business Incubation

## Goals

- To foster the spirit of entrepreneurship and provide training for enriching entrepreneurial skills.
- To provide training programmes to agri-entrepreneurs to start up various agri-business ventures for self employment

## Objectives

- To motivate the young Agricultural graduates to venture into new agri-business projects and impart the entrepreneurial skills.
- To create awareness and expose agri-preneurs to innovative and market based agri-business ventures.

### Strategic plan to achieve Vision and Goal - Ph.D Agri-Business Management

Goal	Objectives	Implementation plan	Performance Metrics/Timeline	Out come
To foster the spirit of entrepreneurship and provide training for enriching entrepreneurial skills.	To motivate the young agrl. graduates to venture into new agri-business projects and impart the entrepreneurial skills.	One week Motivational programme will be conducted involving academicians, experts and practitioners with successful experience,	2024	Creating self employment opportunities
Providing training programmes to agri-entrepreneurs to start up various agri- business ventures for self employment	To create awareness and expose agri-preneurs to innovative and market based agri- business ventures	In plant training on agribusiness will be given to the graduates	Every Year	Improving efficiency and profitability of agri-preneurs

## Accomplishments

Division of Agril. Economics was established by the dedicated efforts taken by the former Head of the Department Dr. P.Zeaudeen. The Ph.D. Agri- Business Management programme was started during 2007 under the headship of Dr.K.R.Sundaravaradarajan, Department of Agril. Economics has successfully produced 48 MBA (Agri Business Management) graduates, and one Ph.D Agri- Business Management since its inception.

Research is the other major focus of the Department besides teaching. The staff members of the Department are working in various fields of their specialization and periodically submitting research proposals on thrust areas viz., agricultural marketing, agri-business management, entrepreneurship development and finance for funding from national and international agencies. The expertise of the staff members in the specialized fields caters to the needs of the present day education systems and the research works relevant to the rapidly changing socio - economic environment. The Research Projects have been funded by various agencies viz., DBT, UGC, NMPB, ICSSR, ICAR-NATP, SANEI, DST-NIMAT, NABARD, REPCO, MHRD, MOFPI, TNSCHE, TNSCST, NGO, etc.. PG and Ph.D scholars are using available learning resources 311 text and reference books, 201 PG and 19 Ph.D. theses, four national journals with 10 bound back volumes for their research.

Two staff members of the Department have completed MBA course. They are handling Ph.D.Agril Business Management classes along with the faculty members from the Department of Business Administration, Annamalai University. Three Endowments viz., Srilochani Varadarajulu Prize, Vallalar endowment and GVR Kodialam Trust Prize are constituted for the first rank holders in Agri- Business Management programme every year.

The Department has mobilized research funds to the tune of Rs 33.74 lakhs from various funding agencies, Rs. 8 lakhs from IMPRESS-ICSSR, Rs. 3.74 lakhs from State Planning Commission, Rs. 22 lakhs from Tamil Nadu State Council for Higher Education, during the period 2017-2022.

Category	Total Period (Upto 2016)	Last five year period (2017-2022)
Number of Publications (Journal articles)	212	101
Number of Publications (Seminars/Conferences/Symposia)	92	40
Number of Books & Book chapters	12	15
Number of Projects obtained	11	5
Grant mobilization (Lakh rupees)	54	35
Number of Ph.D.s produced	11	08
Number of PGs produced	119	82
Number of Seminars/Conferences/Workshops organized	17	8
Number of Awards received by the Faculty	4	3
Number of professional visits of the faculty to abroad	10	-

### Salient research achievements of the Department

1. Agricultural Market Intelligence Cell (AMIC) is functioning in the Department to equip the Ph.D scholars in the art of using various software packages in price forecasting of various agricultural commodities in Cuddalore district. In future, it would be transformed into a farmer centric cell in updating market information on agricultural commodities to farmers of Cuddalore District.
2. The modalities of social and economic and entrepreneurial empowerment of fisherwomen (SHGs) identified by the Department research would be helpful for the upliftment of fisherwomen in the coastal areas of Cuddalore district.
3. The research on “Labour scarcity and its impact on agriculture” has suggested that community level approach needs to be encouraged among the farmer for adopting very high expensive labour saving technologies and implements.

#### 6.4.2. Faculty Strength

Presently the Department’s teaching, research and extension mandates are well taken care of with thirteen faculty members who have specialized in various fields of Agri Economics and agri-business management.

Sl. No.	Cadre	Faculty in place (as on August 2022)	Vacant Position	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	5	-	-
2	Associate Professor*	5	-	1
3	Assistant Professor*	3	-	5
<b>Total</b>		<b>13</b>	<b>-</b>	<b>6</b>

\*Assigned Responsibilities for Multiple Programmes

Sl. No.	Cadre	Faculty in place (as on August 2022)	Other Department
1	Professor**	1	1. Statistics
2	Associate Professor**	-	
3	Assistant Professor**	2	2. Computer Science

\*\* The services of staff from Department of Statistics and Department of Computer and Information Science are availed.

### Credentials of the Faculty

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided (2017-2022)		Total number of publications (Till Date)	Total number of Publications (2017 to 2022)
				PG	Ph.D.		
1.	Dr. G. Ramanathan, M.Sc. (Ag.), Ph.D. Professor & Head	28	Production Economics and Econometrics	6	-	12	2
2.	Dr.K.R.Sundaravaradarajan, M.Sc. (Ag.), M.B.A., Ph.D. Professor	35	Natural Resource Economics, Agri business Management & Trade	6	1	47	3
3.	Dr. K. Sita Devi, M.Sc. (Ag.), Ph.D. Professor	30	Development and Policy & Women Studies	6	1	58	24
4.	Dr. V. Banumathy, M.Sc. (Ag.), Ph.D. Professor	29	Agricultural Marketing & Supply Chain Management	4	1	26	5
5.	Dr. R. Venkataraman, M.Sc. (Ag.), Ph.D. Professor	28	Natural Resource and Environmental Economics	6	3	24	6
6.	Dr. S. Ravichandran, M.Sc. (Ag.), Ph.D. Associate Professor	22	Agricultural Marketing and Resource Economics	5	-	17	6
7.	Dr. G. Srinivasan, M.Sc. (Ag.), M.B.A., Ph.D. Associate Professor	20	Agricultural Finance and Agribusiness Management	5	-	15	5
8.	Dr. T. Ponnarasi, M.Sc.	21	Development and Policy &	5	-	30	16

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided (2017-2022)		Total number of publications (Till Date)	Total number of Publications (2017 to 2022)
				PG	Ph.D.		
	(Ag.), Ph.D. Associate Professor		Women Studies				
9.	Dr. C. Prabakar, M.Sc. (Ag.), Ph.D. Associate Professor	19	Macro Economics	7	2	30	20
10.	Dr. D. Velmurugan, M.Sc. (Ag.), Ph.D. Associate Professor	18	Environmental Economics	7	-	12	4
11.	Dr. R. Rengaraju, M.Sc. (Ag.), Ph.D. Assistant Professor	21	Agricultural Marketing	3	-	12	2
12.	Dr. L.K. Velayutham, M.Sc. (Ag.), Ph.D. Assistant Professor	18	Production Economics	6	-	14	4
13.	Dr.R.Selvakumar, M.Sc. (Ag.), Ph.D. Assistant Professor	15	Natural Resource and Environmental Economics	7	-	16	4

**Awards/ Recognitions & Abroad visits of the Faculty**

Sl. No.	Name of the Faculty	Awards / Recognitions	Countries visited & purpose
1.	Dr. K.R. Sundaravardarajan	Best Agricultural Trainer, 2019	
2.	Dr. K.R. Sundaravardarajan	Doctor Issac Award, 2019	
3.	Dr. C. Prabakar	World Intellectual Property Accreditation Ingenious Award, 2021	

## List of funded Projects (2017 to 2022)

Sl. No.	Title of the Project	Name of the Principal Investigator/ Co-Investigator	Period	Sponsoring Agency	Amount Sanctioned (in lakh Rupees)
1.	Constraint Analysis on Getting Land Availability in Coastal Areas of Tamil Nadu.	Dr.K.R. Sundaravaradarajan	2017-19	State Planning Commission	2.99
2.	Tree Farming as a Choice for Land Use Pattern in Coastal Areas of Northern Tamil Nadu.	Dr.K.R. Sundaravaradarajan	2021-22	State Planning Commission	0.75
3.	Doubling the Farmers Income Through Protected Cultivation Technology – An Economic Evaluation Study in Tamil Nadu	Dr. S. Ravichandran Dr. R. Venkataraman	2019-21	IMPRESS, ICSSR	8.00
4.	Remodeling of Existing Farming System Towards Risk Optimization in Cauvery Delta Zone of Tamil Nadu	Dr. C. Prabakar Dr. K. Sita Devi Dr. R. Selvakumar	2021-24	Tamil Nadu State Council for Higher Education, Chennai	22.00
				<b>Total</b>	<b>33.74</b>



### 6.4.3 Technical and Supporting staff

Four technical and supporting staff members in the Department are helping in academic, research and administrative activities (as on August 2022).

Sl. No.	Sanctioned Posts	Staff in place	Responsibilities
1.	Assistant (Helper)	1	Office file maintenance, department stock maintenance, assisting in the preparation of department level academic and administration reports and leave register maintenance. Preparation of work load, time table preparation, helping in the PG and Ph.D admission process.
2.	Lab Assistant (Programmer, Asst. section officer, Helper)	3	Assists and guides students in computer lab during practical classes.

### 6.4.4. Classrooms and Laboratories

The Department (Computer Science + Statistics) has 30 computers, one camera and one interactive smart class room for conducting UG and PG programmes. The software SPSS, STRATA, R-Programming and E-views are available in the Department for the use of students to pursue their research and data analysis.

Sl. No.	Facility	Number	Area (Sq.ft)	Description
1.	Computer room (at Agrl. Economics)	1	285	Wi-Fi enabled with computer lab with 5 PCs.
2.	Library	1	266	311 - Text and Reference Books 201 - PG Theses, 19 Ph.D thesis
3.	Ph.D. Class room (Hi-Tech Hall)	1	551	Interactive smart class room with LED TV and e-Podium
4.	PG Class room	1	551	LCD projector enabled class room
5.	UG Lab (New Block)	1	1218	Class room with necessary e-teaching aids.
	<b>Common facility</b>			
6.	Statistics & Computer Lab	1	1139	Wi-Fi enabled with computer lab with 30 PCs.

7.	Software			Software -SPSS, STRATA, R-Programming and E-Views
7.	Digital Still Camera	1		Sony Cyber-shot(DSC-H70)
8.	Handy cam 50X	1		Sony (DCR-SR20)

#### 6.4.5. Conduct of Practical and Hands-on-Training

The strength of 10 students of Ph.D (Agri Business Management) will be treated as one batch for the regular practical class. Teacher student ratio is 1:1. The focus is given on imparting knowledge of the basic concepts related to particular topic and case analysis will be given to the students. Outdoor visits are arranged to have a practical knowledge of different aspects related to agri business management. The students are placed in different agro industries as a part of their curriculum and a short trip of 7 to 10 days is arranged with an objective to expose the students to the various business activities of agri business units. Term papers are assigned to the students for subjects with theory and practical. The topic of term paper are different from that of the credit seminar. Student has to collect and submit the term paper before final practical examination and the same will be evaluated by the teacher during the practical examination. Besides, class assignments are also given to motivate the students to improve their skill in presentation.

#### 6.4.6 Supervision of Scholars in Ph.D (Agri Business Management) programme

A Research Advisory Committee shall be constituted with the approval of the University for each candidate separately, immediately after his/her admission. The purpose of the RAC is to provide expert opinion on frontline research. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester

Only those students who successfully completed the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of only Viva-voce examination. The RAC shall conduct the qualifying viva-voce examination with one external member, who shall be a specialist in the subject from outside the university. The Head of the Department will monitor and coordinate the conduct of the qualifying viva.

After assigning the research problem, for each semester, the student has to submit a detailed programme of work to be carried out by him/her during the semester in the prescribed proforma.

After scrutiny and approval, a copy of the research programme has to be given to the student for carrying out the work during that semester.

Attendance register must be maintained in the department by HOD for all the students to monitor whether the student has 80% of attendance in research. The student has to submit his/her research observation note book to the Research Supervisor, who will scrutinize the progress and sign the note book with remarks as frequently as possible. This note book will form the basis for evaluation of research progress.

After completion of 80% attendance for research and on or before the last day of the semester, the research scholars, shall submit Progress Reports in the prescribed format duly endorsed by the Research Advisory Committee to the Director, DARE until they submit their synopsis.

All students shall abide by the rules for evaluating the course work under the semester system of education, as prescribed from time to time by the University. There will be two examinations *viz.*, first test and final examination. The duration of first test will be of one and a half an hour and final examinations in theory and practical will be conducted for three hours each.

The first test will be conducted by course teachers during the ninth week of the semester as per the scheme drawn by HOD, evaluate and send the marks obtained by the students to the Director, DARE through HOD within seven working days.

The question paper for the final examination will be set as per Bloom's taxonomy by the concerned course teacher in consultation with the Head of the Department.

There will be final examination separately for theory and practical which will be conducted by the University. Each final theory and practical examinations will be evaluated by two examiners (one will be the course teacher and another will be the senior faculty of the Department).

#### Ph.D Agri Business Management

Name of the Faculty	Name of the Students Guided	Year of Submission	Title of thesis
Dr. G. Srinivasan	A.MEHAZABEEN	2021	A Study on Supply Chain and Price Behavior of Banana from Andhra Pradesh - An Agri Business Approach

#### 6.4.7 Feedback of Stakeholders (Scholars, farmers, company, parents etc.,)

An effective Mentor – mentee system is functioning at the Department level to get the feedback from the scholars. The institution evaluates the teachers on their teaching and research performance periodically by way of getting students’ feedback and self appraisal of teachers which will be reviewed by the Head of the Department. The results of the critical review and evaluation of the feedback will be incorporated accordingly in refining the teaching skills of the faculty. The young teachers are assigned to deliver special lectures in the department to elicit constructive criticism for improvement. Parents are regularly informed about the progress of the scholars by the Mentor and in-turn the feedback is also received from them. Based on the feedback, necessary actions are taken by the mentor of concerned scholar to improve his/her progress in studies and advice him/her to develop their personality.

#### Action Taken Report

- 1.As per request of the students, Special lectures on new topics related to agri-business entrepreneurship are organised at regular intervals to develop their skills.
- 2.Coaching classes for competitive examinations like for UPSC, TNPSC, Banks and Higher education programmes are also being conducted to enable the students for their career development and employability.

#### 6.4.8 Scholars intake and attrition in the programme for the last five years

Name of the programme	Actual students admitted in the last five years					Attrition (%)				
	2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
Ph.D (Agri Business Management)	1	-	2	6	-	-	-	-	-	-

### Employment Details of Ph.D. Scholars

Academic Year	Number of students graduated (Ph.D)		Employed in					Total	Percent employed
			Central	State	Bank	Private	Entrepreneur		
	M	F							
2017-18	-	-				-	-	-	-
2018-19	-	-				-	-	-	-
2019-20	-	-				-	-	-	-
2020-21	-	1				1	-	-	100
2021-22	-	-				-	-	-	-

### Employment Details

#### - Alumni List

Name of the Students	Year of Completion	Contact Number	Present Position
A.MEHAZABEEN	2021	8500402083	RVS Agricultural College Thanjavur

### 6.4.9 ICT Application in Curricular Delivery

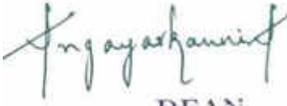
Scholars are motivated and encouraged to participate actively in the class room and to have interaction with teachers using ICT tools. Scholars are familiar with apps and online resources related to their subjects and they learn their subjects in speedy manner. Using ICT tools, Scholars gain skills to solve complex problems through critical thinking. To enhance the quality in research, Scholars are encouraged to access relevant literatures from various e-websites. Scholars are motivated to present recent topics of relevant subjects with the use of ICT tools. Department staff members are using ICT tools for class room teaching and seminar purposes.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean .....**A.Angayarkanni**..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
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6.4.10	The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.	17
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6.4.12	Certificate (Applicable when SSR is submitted for Programme)	18

#### 6.4. Self Study Report for the Programme

Name of the Programme: Doctor of Philosophy in Agricultural Economics

Offered by: Department of Agricultural Economics

##### 6.4.1. Brief History of Doctor of Philosophy in Agricultural Economics Programme

The Department of Agricultural Economics was established in 1993 which had its beginning as Division of Agricultural Economics in 1987 with an aim to develop a strong programme in agricultural and rural development with emphasis on teaching, research and extension. The Ph. D. Agricultural Economics degree programme in Agricultural Economics was started during 1987.

Historical Itinerary	Year of commencement
Division of Economics	1987
Post Graduate Programme in Agricultural Economics	1987
Ph.D. Programme	1987
Department Status	1993

For the Ph.D Agricultural Economics degree programme, a total of 100 credits are offered which includes 12 credits for major courses, 6 credits for minor courses, 5 credits for supporting courses, 02 credit for seminar and 75 credits for doctoral research. Based on the ICAR V<sup>th</sup> Deans committee recommendations, the latest revision of the curriculum was carried out in the academic year 2022-23.

### Distribution Pattern of Courses and Credit

<b>Semester</b>	<b>Major Courses</b>	<b>Minor Courses</b>	<b>Supporting Courses</b>	<b>Seminar</b>	<b>Research</b>	<b>Total Credits</b>	<b>Non Credit Compulsory Courses</b>
<b>I</b>	6	4	2	1	2	<b>15</b>	-
<b>II</b>	6	2	3	1	10	<b>22</b>	-
<b>III</b>	-	-	-	-	15	<b>15</b>	Research and Publications Ethics
<b>IV</b>	-	-	-	-	16	<b>16</b>	MOOC
<b>V</b>	-	-	-	-	16	<b>16</b>	-
<b>VI</b>	-	-	-	-	16	<b>16</b>	-
<b>Total Credits</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>	<b>100</b>	-

**Ph. D. in Agricultural Economics**  
**Distribution of Courses**

Sl. No.	Course Code	Course Title	Credit Hours
<b>Compulsory Major Courses</b>			<b>12</b>
1	AEC 601	Advanced Micro Economic Analysis	1+1
2	AEC 602	Advanced Macro Economic Analysis	2+0
3	AEC 603	Advanced Econometrics	2+1
4	AEC 604	Advanced Production Economics	2+1
<b>Optional Major Courses</b>			
5	AEC 605	Advanced Agricultural Marketing and Price Analysis	1+1
6	AEC 606	Quantitative Development Policy Analysis	1+1
<b>Minor Courses</b>			<b>6</b>
1	AEC 607	Advanced Agricultural Project Analysis	1+1
2	AEC 608	Advanced Agricultural Finance and Insurance	1+1
3	AEC 609	Natural Resource Economics	1+1
4	AEC 610	Environmental Economics	1+1
5	AEC 611	International Trade Theories and Policy Applications	1+1
6	AEC 612	Advances in Price Forecasting and Time Series Analysis	1+1
7	AEC 613	Impact Evaluation of Development Projects	1+1
8	AEC 614	Commodity Markets and its Derivatives	2+0
9	AEC 615	Advances in Applications of Intellectual Property Rights	2+0
10	AEC 616	Advanced Theories of Growth and Development	2+0
<b>Supporting Courses</b>			<b>5</b>
1	COM 601	Advances in Computer Applications	1+1
2	AEC 617	Advanced Operations Research	2+1
<b>Seminar</b>			<b>2</b>
1	AEC 691	Doctoral Seminar I	0+1
2	AEC 692	Doctoral Seminar II	0+1
<b>Research</b>			<b>75</b>
1	AEC 699	Doctoral Research	0+75
<b>Non Credit Compulsory Courses</b>			
1	RPE	Research and Publication Ethics	2+0

2		MOOC	2+0
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### **Vision**

- To establish a Centre for Agricultural Development Policy
- To establish a Centre for Agricultural Resource Management

### **Goals**

- To identify and diagnose regional specific problems and evolve development policy with micro approach
- To carry out empirical research for improving agricultural resource productivity matching with the existing market conditions with the long term goal of ensuring conservation and sustainable use of resource endowments.

### **Objectives**

- To study the socio economic problems of agricultural labourers and the need for intervention with partial farm mechanisation.
- To undertake research on improving the economic efficiency and its optimization of resources like water and other capital inputs.

### Strategic plan to achieve Vision and Goal (Ph.D Agricultural Economics)

Goal	Objectives	Implementation plan	Performance Metrics/Timeline	Out come
Identify and diagnose regional specific problems and evolve development policy with micro approach	To Study The Socio Economic Problems of Agrl Labour and the Need For Intervention With Partial Farm Mechanisation.	Base line survey for assessing the socio economic status exploring the farm mechanisation opportunities assessing the economic feasibility of labour substitution	2023	accommodating the labour shift and ensuring their livelihood security
To carry out empirical research for improving agricultural resource productivity matching with the existing market conditions with the long term goal of ensuring conservation and sustainable use of resource endowments.	to undertake research on improving the economic efficiency and its optimization of resources like water and other capital inputs.	- collect primary data for specific objectives set forth  - developing models for resource optimization	2023	reduce the cost of resource use, conserving the resources and ensuring its sustainability.

#### Accomplishments

- The Division of Agricultural Economics was established by the dedicated efforts taken by the first and former Head of the Department Dr.P.Zeaudeen. Subsequently, the Department was headed by Dr.K.R.Sundaravaradarajan (2004-2015), by Dr.K.Sita Devi (2015-2018), by Dr. V. Banumathy (2018-2021) and presently by Dr.G.Ramanathan.The Department has produced 6 Ph.D scholars in Agricultural Economics.
- Alumni of this Department occupied various positions in State Planning Commission, Nationalized banks, Coconut board and state universities. Research is the other major focus of the Department besides teaching.
- The staff members of the Department are working in various fields of their specialization and periodically submitting research proposals on thrust areas viz., natural resource economics, environmental economics and trade, agricultural finance, women studies, agricultural marketing, and fisheries economics for funding from national and international agencies.

- The expertise of the staff members in the specialized fields caters to the needs of the present day education systems and the research works relevant to the rapidly changing socio – economic environment.
- The Research Projects are funded by various agencies viz., DBT, UGC, NMPB, ICSSR, ICAR-NATP, SANEI, DST-NIMAT, NABARD, REPCO, MHRD, MOFPI, TNSCHE, TNSCST, NGO, etc,. Three Endowments viz., Srilochani Varadarajulu Prize, Vallalar endowment and GVR Kodialam Trust Prize are constituted for the first rank holders in Agrl. Economics.
- PG and Ph.D. scholars are using available learning resources such as 311 text and reference books, 201 PG and 19 Ph.D. theses, four national journals with 10 bound back volumes for their research.
- Agricultural Marketing Intelligence Cell was established in the year 2013 with the objective to cater to the needs of the farmers regarding the market prices of agricultural commodities in Cuddalore district and the neighbouring districts.
- The Department has mobilized research funds to the tune of Rs 33.74 lakhs from various funding agencies, Rs 8 lakhs from IMPRESS-ICSSR, Rs. 3.74 lakhs from State Planning Commission, Rs. 22 Lakhs from Tamil Nadu State Council for Higher Education.

Category	Total Period (Upto 2016)	Last five year period (2017-2022)
Number of Publications (Journal articles)	212	101
Number of Publications (Seminars/Conferences/Symposia)	92	40
Number of Books & Book chapters	12	15
Number of Projects obtained	11	5
Grant mobilization (Lakh rupees)	54	35
Number of Ph.D.s produced	11	08
Number of PGs produced	119	82
Number of Seminars/Conferences/Workshops organized	17	8
Number of Awards received by the Faculty	4	3
Number of professional visits of the faculty to abroad	10	-

### Salient research achievements of the Department

1. Agricultural Market Intelligence Cell (AMIC) is functioning in the Department to equip the Ph.D students in the art of using various software packages in price forecasting of various agricultural commodities in Cuddalore district. In future, it would be extended to benefit the farmers of Cuddalore and neighbouring districts in updating market information on agricultural commodities.
2. The policies recommended by the department from its research output will help in implementing the modalities for socio-economic empowerment of fisher women SHGs.
3. The research findings for the study in "Labour Scarcity and its impact on Agriculture" will help in evolving cost effective technological intervention strategies to solve the problems of labour scarcity in agriculture.

#### 6.4.2. Faculty Strength

Presently the Department's teaching, research and extension mandates are well taken care of with thirteen faculty members who have specialized in various fields of Agricultural Economics.

Sl. No.	Cadre	Faculty in place (as on August 2022)	Vacant Position	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	5	-	-
2	Associate Professor*	5	-	1
3	Assistant Professor*	3	-	5
	<b>Total</b>	<b>13</b>	<b>-</b>	<b>6</b>

\*Assigned Responsibilities for Multiple Programmes

#### Faculties from other Department to undertake classes for the Ph.D students

Sl. No.	Cadre	Faculty in place (as on August 2022)	Other Department	
1	Professor**	1	1. Statistics	
2	Associate Professor**	-		
3	Assistant Professor**	2	2. Computer Science	

\*\* The services of staff from Department of Statistics and Department of Computer and Information Science are availed.



### Credentials of the Faculty

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided (2017-2022)		Total number of publications (Till Date)	Total number of Publications (2017 to 2022)
				PG	Ph.D.		
1.	Dr. G. Ramanathan, M.Sc. (Ag.), Ph.D. Professor & Head	28	Production Economics and Econometrics	6	-	12	2
2.	Dr.K.R.Sundaravaradarajan, M.Sc. (Ag.), M.B.A., Ph.D. Professor	35	Natural Resource Economics, Agri business Management & Trade	6	1	47	3
3.	Dr. K. Sita Devi, M.Sc. (Ag.), Ph.D. Professor	30	Development and Policy & Women Studies	6	1	58	24
4.	Dr. V. Banumathy, M.Sc. (Ag.), Ph.D. Professor	29	Agricultural Marketing & Supply Chain Management	4	1	26	5
5.	Dr. R. Venkataraman, M.Sc. (Ag.), Ph.D. Professor	28	Natural Resource and Environmental Economics	6	3	24	6
6.	Dr. S. Ravichandran, M.Sc. (Ag.), Ph.D. Associate Professor	22	Agricultural Marketing and Resource Economics	5	-	17	6
7.	Dr. G. Srinivasan, M.Sc. (Ag.), M.B.A., Ph.D. Associate Professor	20	Agricultural Finance and Agribusiness Management	5	-	15	5
8.	Dr. T. Ponnarasi, M.Sc.	21	Development and Policy &	5	-	30	16

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided (2017-2022)		Total number of publications (Till Date)	Total number of Publications (2017 to 2022)
				PG	Ph.D.		
	(Ag.), Ph.D. Associate Professor		Women Studies				
9.	Dr. C. Prabakar, M.Sc. (Ag.), Ph.D. Associate Professor	19	Macro Economics	7	2	30	20
10.	Dr. D. Velmurugan, M.Sc. (Ag.), Ph.D. Associate Professor	18	Environmental Economics	7	-	12	4
11.	Dr. R. Rengaraju, M.Sc. (Ag.), Ph.D. Assistant Professor	21	Agricultural Marketing	3	-	12	2
12.	Dr. L.K. Velayutham, M.Sc. (Ag.), Ph.D. Assistant Professor	18	Production Economics	6	-	14	4
13.	Dr.R.Selvakumar, M.Sc. (Ag.), Ph.D. Assistant Professor	15	Natural Resource and Environmental Economics	7	-	16	4

#### Awards/ Recognitions & Abroad visits of the Faculty

Sl. No.	Name of the Faculty	Awards / Recognitions	Countries visited & purpose
1.	Dr. K.R. Sundaravardarajan	Best Agricultural Trainer, 2019	
2.	Dr. K.R. Sundaravardarajan	Doctor Issac Award, 2019	
3.	Dr. C. Prabakar	World Intellectual Property Accreditation Ingenious Award, 2021	

## List of funded Projects (2017 to 2022)

Sl. No.	Title of the Project	Name of the Principal Investigator/ Co-Investigator	Period	Sponsoring Agency	Amount Sanctioned (in lakh Rupees)
1.	Constraint Analysis on Getting Land Availability in Coastal Areas of Tamil Nadu.	Dr.K.R. Sundaravaradarajan	2017-19	State Planning Commission	2.99
2.	Tree Farming as a Choice for Land Use Pattern in Coastal Areas of Northern Tamil Nadu.	Dr.K.R. Sundaravaradarajan	2021-22	State Planning Commission	0.75
3.	Doubling the Farmers Income Through Protected Cultivation Technology – An Economic Evaluation Study in Tamil Nadu	Dr. S. Ravichandran Dr. R. Venkataraman	2019-21	IMPRESS, ICSSR	8.00
4.	Remodeling of Existing Farming System Towards Risk Optimization in Cauvery Delta Zone of Tamil Nadu	Dr. C. Prabakar Dr. K. Sita Devi Dr. R. Selvakumar	2021-24	Tamil Nadu State Council for Higher Education, Chennai	22.00
				<b>Total</b>	<b>33.74</b>

### 6.4.3. Technical and Supporting Staff

Four technical and supporting staff members in the Department are helping in academic, research and administrative activities (as on August 2022).

Sl. No.	Sanctioned Posts	Staff in place	Responsibilities
1.	Assistant (Helper)	1	Office file maintenance, department stock maintenance, assisting in the preparation of department level academic and administration reports and leave register maintenance. Preparation of work load, time table preparation, helping in the PG and Ph.D admission process.
2.	Lab Assistant (Programmer, Asst. section officer, Helper)	3	Assists and guides students in computer lab during practical classes.

### 6.4.4. Classrooms and Laboratories

The Department (Computer Science + Statistics) has 30 computers, one camera and one interactive smart class room for conducting UG and PG programmes. The software SPSS, STRATA, R-Programming and E-views are available in the Department for the use of students to pursue their research and data analysis.

Sl. No.	Facility	Number	Area (Sq.ft)	Description
1.	Computer room (at Agrl. Economics)	1	285	Wi-Fi enabled with computer lab with 5 PCs.
2.	Library	1	266	311 - Text and Reference Books 201 - PG Theses, 19 Ph.D thesis
3.	Ph.D. Class room (Hi-Tech Hall)	1	551	Interactive smart class room with LED TV and e-Podium
4.	PG Class room	1	551	LCD projector enabled class room
5.	UG Lab (New Block)	1	1218	Class room with necessary e-teaching aids.
	<b>Common facility</b>			
6.	Statistics & Computer Lab	1	1139	Wi-Fi enabled with computer lab with 30 PCs.
7.	Software			Software -SPSS, STRATA, R-Programming and E-Views
7.	Digital Still Camera	1		Sony Cyber-shot(DSC-H70)
8.	Handy cam 50X	1		Sony (DCR-SR20)

#### **6.4.5. Conduct of Practical and Hands-on-Training**

For PhD practical class, total strength of 10 students will be treated as one batch. Teacher student ratio is 1:4. Practical classes are handled to expose the students to practical utility of agricultural economics principles by explaining them and solving the example problems using hypothetical data. Field visits are arranged to collect the actual data from farmers regarding cost of cultivation, cropping pattern, production details to understand production economics and farm management techniques. Visits also arranged to various marketing and financial institutions to know the objectives, function and role of these institutions in agricultural development. Term papers are assigned to the students by the teacher for subjects with theory and practical. Term papers should cover a wide range of topics within the subject limits. The topic should be different from that of the credit seminar. Term paper will be evaluated during practical examination. Class assignments have also given to the students and asked them to present during class hours.

#### **6.4.6. Supervision of Scholars in Ph.D. (Ag.) Agricultural Economics Programme**

A Research Advisory Committee shall be constituted with the approval of the University for each candidate separately, immediately after his/her admission. The purpose of the RAC is to provide expert opinion on frontline research. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester

Only those students who successfully completed the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of only Viva-voce examination. The RAC shall conduct the qualifying viva-voce examination with one external member, who shall be a specialist in the subject from outside the university. The Head of the Department will monitor and coordinate the conduct of the qualifying viva.

After assigning the research problem, for each semester, the student has to submit a detailed programme of work to be carried out by him/her during the semester in the prescribed proforma. After scrutiny and approval, a copy of the research programme has to be given to the student for carrying out the work during that semester.

Attendance register must be maintained in the department by HOD for all the students to monitor whether the student has 80% of attendance in research. The student has to submit his/her research observation note book to the Research Supervisor, who will scrutinize the progress and sign the note book with remarks as frequently as possible. This note book will form the basis for evaluation of research progress.

After completion of 80% attendance for research and on or before the last day of the semester, the research scholars, shall submit Progress Reports in the prescribed format duly endorsed by the Research Advisory Committee to the Director, DARE until they submit their synopsis.

All students shall abide by the rules for evaluating the course work under the semester system of education, as prescribed from time to time by the University. There will be two examinations *viz.*, first test and final examination. The duration of first test will be of one and a half an hour and final examinations in theory and practical will be conducted for three hours each.

The first test will be conducted by course teachers during the ninth week of the semester as per the scheme drawn by HOD, evaluate and send the marks obtained by the students to the Director, DARE through HOD within seven working days.

The question paper for the final examination will be set as per Bloom's taxonomy by the concerned course teacher in consultation with the Head of the Department.

There will be final examination separately for theory and practical which will be conducted by the University. Each final theory and practical examinations will be evaluated by two examiners (one will be the course teacher and another will be the senior faculty of the Department).

Name of the Faculty	Name of the Students Guided	Year of Submission	Title of thesis
Dr.K. Sita Devi	N. Amirthalingam	2018	Dynamics of Rural Agrarian Transformation in the Post Liberalization Period in Tamil Nadu.
Dr.R.Venkataraman	D. Velmurugan	2018	An economic study of managing water scarcity and seasonal water crisis in Agriculture under Different Ground Water Regimes in the coastal region of Tamil Nadu.
Dr.R.Venkataraman	R. Selva Kumar	2018	Vulnerability of agriculture and farm level adaptations to climatic variations in different irrigation regimes-An economic study in coastal Tamil Nadu.
Dr.K.R.Sundaravaradarajan	K.Pugazhendhi	2020	Economic Usage of Bio-Input in Agriculture
Dr.V. Banumathy	R. Sathiya	2021	An Economic analysis of production and marketing of Minor Millets in Tamil Nadu.
Dr.R. Venkataraman	M. Priyanga	2021	Economics of energy irrigation linkages and groundwater management in Cuddalore District of Tamil Nadu.
Dr. C. Prabakar	I.Chandrakanth Reddy	2021	An Economic Analysis on the Agrarian Concerns in the Cyclone Prone Coromandel Agro Ecosystem

Dr. C. Prabakar	Y. Shelton Peter	2021	Alternative Cropping System for Cauvery Delta Region in Tamil Nadu – A Socio Economic Analysis
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**6.4.7. Feedback of stakeholders (Scholars, farmers, company, parents etc.)** An effective Mentor - mentee system is functioning at Department level to get feedback from the scholars. The institution evaluates the teachers on their teaching and research performance periodically by way of getting scholars' feedback and self appraisal of teachers which will be reviewed by the Head of the Department. The results of the critical review and evaluation of the feedback will be incorporated accordingly in refining the teaching skills of the faculty. The young teachers are assigned to deliver special lectures in the department to elicit constructive criticism for improvement. Parents are regularly informed about the progress of the scholars by the Mentor and in-turn the feedback is also received from them. Based on the feedback, necessary actions are taken by the mentor of concerned scholars to improve his/her progress in studies and advice him/her to develop their personality.

**Action Taken Report**

- 1.As per request of the students , Special lectures on new topics were organised to develop their skills.
- 2.Coaching classes were conducted for UPSC, TNPSC, Banks and Higher studies to improve their personality development skills, analytical , reasoning ability etc.,

**6.4.8. Scholars intake and attrition in the programme for the last five years**

Name of the programme	Actual students admitted in the last five years					Attrition (%)					
	2017-18	2018-19	2019-20	2020-21	2021-22	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Ph.D (Ag) Agricultural Economics	01	04	11	05	07	-	-	-	9	-	-

### Student Progression

Academic year	Name of the Scholars
	<b>NET/ARS qualified</b>
2017-18	R.Santhakumar
2020-21	G. Arun prasanth S. Sanjeevkumar

### Employment Details of Ph.D. Scholar

Academic Year	Number of scholars graduated (Ph.D)		Employed in					Total	Percent employed
			Central	State	Bank	Private	Entrepreneur		
	M	F	-	-	-	-	-	-	-
2017-18	-	-	-	-	-	-	-	-	-
2018-19	-	-	-	-	-	-	-	-	-
2019-20	1	-	-	-	-	1	-	1	100
2020-21	2	2	-	-	-	3	1	4	100
2021-22	1	-	-	-	-	1	-	1	100

#### 6.4.9. ICT Application in Curricular Delivery

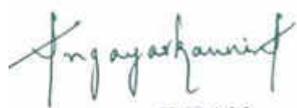
Scholars are motivated and encouraged to participate actively in the class room and to have interaction with teachers using ICT tools. Scholars are familiar with apps and online resources related to their subjects and they learn their subjects in speedy manner. Using ICT tools, scholars gain skills to solve complex problems through critical thinking. To enhance the quality in research, Scholars are encouraged to access relevant literatures from various e-websites. Scholars are motivated to present recent topics of relevant subjects with the use of ICT tools. Department staff members are using ICT tools for class room teaching and seminar.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean .....**Dr.A.Angayarkanni**..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

**Self Study Report (2017 to 2022) for  
Ph.D. Agricultural Extension Education**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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**6.4. SELF STUDY REPORT**  
**Ph.D Agricultural Extension Education**

**Offered by: Department of Agricultural Extension**

**6.4.1 BRIEF HISTORY OF PROGRAMMES OFFERED**

The Division of Agricultural Extension was established in 1958 and it was uplifted as a department in 1994.

Historical Itinerary	Year of Commencement
Division of Agricultural Extension	1958
Department of Agricultural Extension	1994
Ph.D Agricultural Extension	1994-2021
Ph.D Agricultural Extension Education	2022

The Department of Agricultural Extension is offering Ph.D. Agricultural Extension Education degree programme as per the 5<sup>th</sup> Deans committee recommendations and ICAR-BSMA recommendations 2021.

**Semester Wise Distribution of Credits**

Semester	Major Course	Minor Course	Supporting Course	Seminar	Research	Total credit	Non credit Compulsory course
I	6	3	2	1	2	14	-
II	6	3	3	1	10	23	-
III	-	-	-	-	16	16	Research and Publication Ethics
IV	-	-	-	-	16	16	MOOC
V	-	-	-	-	16	16	-
VI	-	-	-	-	15	15	-
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>	<b>100</b>	<b>-</b>

**Distribution Pattern of Courses and Credits**

Course Code	Course Title	Credit Hours
	<b>Major Courses (Any four out of six major courses)</b>	
EXT 601	Policy Engagement and Extension	3(2+1)
EXT 602	Methodologies for Social and Behavioural Research	3(2+1)
EXT 603	Technology Commercialization And Incubation	3(2+1)
EXT 604	Educational Technology and Instructional Design	3(2+1)
EXT 608	Trends in E-extension for Agricultural Development (2+1)	3(2+1)
EXT 609	Advanced Management Techniques	3(2+1)
	<b>Minor Courses (Any two out of three major courses)</b>	

EXT 605	Risk Management and Climate Change Adaptation	3(2+1)
EXT 606	Livelihood Development	3(2+1)
EXT 607	Facilitation for People-Centric Development	3(2+1)
<b>Supporting courses</b>		
STA 602	Multivariate Statistical Methods for Extension Research	3 (2+1)
COM 601	Advances in Computer Applications	2 (1+1)
<b>Seminar</b>		
EXT 691	Doctoral Seminar - I	1(1+0)
EXT 692	Doctoral Seminar - II	1 (1 +0)
<b>Research</b>		
EXT 699	Doctoral Research	75 (0+75)
<b>Non-credit compulsory course</b>		
NGC 611	Research and Publication Ethics – <b>Contact hours: 2</b>	2(2+0)
NGC 612	<b>MOOC – Contact hours: 2</b>	2(2+0)

### Vision

- To train students in the process of transfer of technology and to conduct research for evolving efficient methods of transfer of technology.
- To organize seminars and conferences and bring out research publications.
- Organizing and conducting research on extension aspects.
- To train the Ph.D scholars to become good leaders and motivators.
- To train the Ph.D scholars to become good administrators with social responsibility.

### Goals

- To train the students keeping in mind the guidelines of ICAR.
- To provide hands on training to the students on the extension aspects.
- To enhance the field knowledge and instructive skills of the students
- To motivate the students to develop new extension technologies and publish in high impact journals.
- To encourage the scholars to take agro based industries.
- To promote research on sustainable agricultural development

### Objectives

- To teach various extension techniques.
- To teach the principles and steps in programme planning and about development programmes for rural development
- To teach the various concepts related to diffusion and adoption of agricultural innovations.
- To train the students to gain knowledge and skills in understanding the concepts of Information and communication technologies.
- To impart quality education to Ph.D scholars

### Strategic plan to achieve Vision and Goals

Goals	Objectives	Implementation plan	Performance Metrics/Timeline	Outcomes
Providing quality education with instructional capacity and inculcating new approach and skills in the field of Extension with a wide range of learning experiences.	To provide advanced education in the field of Agricultural Extension.	Regular upgradation of course content.	Once in three years.	A regularly updated curriculum adds up to the domain knowledge of the students. They are well trained as future ambassadors of Extension equipped with better communication and soft skills
	To inculcate instructional capacity and problem-solving skills through intensive seminars and group discussions with stake holders.	Definitive implementation of class seminars & credit seminar to impart interactive ability among students	Once in a year	
	To guide post graduates in identifying professional and research career opportunities	Acquainting the students for E - access bay	Once in a year	

### Accomplishments

At the early stage, the department had enthusiastic heads of the departments like Prof. S.V Pandurangan, Dr.J.Vasanthakumar, Dr.Santha Govind and Dr.K.Kanagasabapathi, who nurtured the department. Since January 2020, the department is functioning under the stewardship of Dr.M.Vetriselvan with the committed support of 24 staff members. The staff strive hard to make the department to excel in research and academic activities. Imparting effective self-learning process including skill oriented training is regularly done.

- The Department has organizes coaching classes for ICAR and other competitive examinations.

- The department has conducted research on the diffusion and adoption patterns of various crops growers regarding the latest recommended technologies. Research is being focused on the impact of various agricultural and rural development programmes of both central and state governments.
- The effectiveness of various extension and training organizations which are involved in the agricultural development are also studied.
- The department is training B.Sc (Ag.) students on practical extension strategies during their village stay programme for the course RAWE (Rural Agricultural Work Experience).
- The department has been entrusted with the responsibility of final year UG students and PG students for arranging all india educational tour for the students for the past 25 years.
- The department also has organized two National Conferences, one e-workshop and five International Virtual Conferences.
- The department is conducting demonstrations, campaigns, meetings etc to maintain relationship with the farming community of the Cuddalore and Nagapattinam districts.
- The department also organized Agricultural Extension Conference for farmers and farmers day.
- The department is imparting extension skills among the B.Sc (Ag.)/ (Hort.) and M.Sc(Agri) Agricultural Extension Education students.
- The department is associating itself with state Department of Agriculture in conducting extension events and other transfer of technology activities.
- The alumni of department are occupying remarkable positions in several reputed national/international organizations across the globe. Many of them serve as distinguished academicians and administrators in several institutions and agencies

Category	Total	Last five year period (2017-2022)
Number of Publications (Journal articles)	972	219
Number of Publications (Seminars/Conferences/ Symposia)	290	168
Number of Books & Book chapters	15	12
Number of Projects obtained	5	1
Grant mobilization (rupees in Lakh)	92.50 lakhs	77.35 lakhs
Number of Ph.Ds produced	39	9
Number of Seminars/ Conferences/Workshops Organized	3	8
Number of Awards received by the Faculty	80	73
Number of countries visited by the Faculty (Professional visits)	6	-

## II. Salient Research Achievements of the Department

- Identified traditional farming practices
- Identified the constraints in the adoption of recommended farming practices

- Identified the training needs of farmers on various cultivation aspect
- Identified the entrepreneurial performance of the farmers
- Identified the extent of adoption of recommended farming practices
- Identified the communication and Information Management behaviour of various farming communities
- Identified ICT based attitude, perception, knowledge and utilization among the farmer
- Identified Climate change adaptation and Nutrition extension

#### 6.4.2. FACULTY STRENGTH

Sl. No.	Posts	Sanctioned	Filled	Vacant	Faculty in place	Faculty Recommended by ICA/UGC/VCI other regulatory bodies
1.	Professor*	3	3	-	3	-
2.	Associate Professor*	9	9	-	9	1
3.	Assistant Professor*	11	11	-	11	3
4.	Assistant Professor/ Programmer	1	1	-	1	-
<b>Total</b>					<b>24</b>	<b>4</b>

\* Engaged in UG, PG and Ph.D. Programme

#### Services of Faculty Other Department

Sl. No.	Posts	Faculty in place	Vacancy position	Faculty Recommended by ICA/UGC/VCI other regulatory bodies
1.	Professor*	-	-	
2.	Associate Professor*	-	-	
3.	Assistant Professor*	2	-	

**Credentials of the Faculty (2017-2022)**

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
1.	Dr. Santha Govind (Retired on 30.06.2020)	35	Gender studies, ICT, Rural Development	28	8	140	2	5
2.	Dr. K. Kanagasabapathi*, Professor	33	Indigenous knowledge system and climate change	25	9	117	13	19
3.	Dr.M.Vetriselvan, Professor & Head	29	Agricultural Training , HRD	15	2	12	1	1
4.	Dr.G.Tamilselvi, Professor	27	Entrepreneurship development, ICT	13	-	22	5	-
5.	Dr.P.Jeyaseelan, Professor	28	Human Resource Management, ICT & Cyber Extension	14	-	31	-	-
6.	Dr.J.Meenambigai, Associate Professor	20	ICT, HRD, Nutrition Extension	9	1	69	15	16
7.	Dr.D.Vengatesan, Associate Professor	20	Women studies, Technological Development	7	1	65	3	1
8.	Dr.P.Shanmugaraja, Associate Professor	19	Communication behavior, ITK.	6	1	58	36	7
9.	Dr.V.Sakthivel, Associate Professor	18	Training and Adoption studies	5	-	86	36	27

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
10.	Dr.M.Kavaskar, Associate Professor	18	ICT, Media Studies, Transfer of Technology , Climate Change	6	3	109	11	21
11.	Dr.T.Kalidasan, Associate Professor	20	Communication, Information Management, Learning Experience	5	--	30	6	5
12.	Dr.R.Jayasankar, Associate Professor	19	Information Technology	5	-	64	-	15
13.	Dr.T.Raj Pravin, Associate Professor	16	Transfer of Technology, Farm Journalism, ICT	4	-	-	3	2
14.	Dr.R.Jeya, Associate Professor	20	Yiled Gap	6	-	30	6	6
15.	Mr.S.Durairaj, Assistant Professor	21	Transfer of Agricultural Technology	2	-	10	-	-
16.	Dr.V.Balamurugan, Assistant Professor	20	Communication, Information Management, Learning Experience	6	-	40	17	20
17.	Dr.M.Natarajan, Assistant Professor	20	ITK, Gender Analysis, ICT, Adoption Behaviour, Training & Impact Studies.	8	-	45	1	4
18.	Dr.I.Isaac Devanand, Assistant Professor	19	Indigenous Knowledge and Farming Practices	4	-	-	-	-
19.	Dr. T. Balakrishnan,	19	Agricultural Training	4	-	45	8	16

Sl. No.	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journals	Others
	Assistant Professor							
20.	Dr.P.Ramesh, Assistant Professor	19	Transfer of Sustainable Technologies	5	-	40	4	1
21.	Dr.B.Sudhakar, Assistant Professor	19	Yield Gap Analysis	5	-	20	0	4
22.	Dr.R.Muthukumar, Assistant Professor	19	Agricultural Training, Marketing Behaviour	5	-	40	0	5
23.	Dr.V.Kalirajan, Assistant Professor	18	Organic Farming, Indigenous Agricultural Practices & Eco Friendly Technologies.	5	-	15	2	5
24.	Dr.T.Sujavelu, Assistant Professor	17	Marketing Behaviour, Value Adoption	4	-	18	3	4
25.	Dr. Darling B. Suji, Assistant Professor	17	Adoption Studies	4	-	46	6	23

S.No	Name of the author(s)	Title of paper	Name of the Journal	National/ International	Year of publication	ISSN
1	Kanagasabapathi,K and V.Sakthivel	Communication behaviour of Cashew cultivators	Journal of Extension Education	National	2017	29 (3): 5917-5920. ISSN:0971-3123
2	Santha Govind, M.Kavaskar and Ajoickam Christina	Perception of Farmers on usefulness of Mobile Service in Manipur	Journal of Extension Education (Special Issue: Agrl. Communication),	National	2017	29(2):5850-5856 . ISSN:2456-1282.
3	Dr.J.Meenambigai C. Thatchinamoorthy	Customer Relationship Management and Retention in Street Food Sector	Food & Nutrition Journal	National	2017	2575-7091
4	Sharmila. S and M. Kavaskar. 2017	Knowledge level of Extension Personnel on Information and communication Technology (ICT)	Journal of global communication	International	2017	10(2): 91-95 ISSN:0974-0600
5	Sharmila. A and M.Kavaskar	Attitude of Extension Personnel towards Information and communication Technology (ICT)	Research Journal of Agricultural Sciences	International	2017	8 (6):1455-1457 ISSN:0976-1675
6	Meenambigai, J.D.Prathapsingh and C.Thatchinamoorthy	Communication behaviour of banana growers in Delta region of Tamil Nadu.	Agriculture Update	International	2017	ISSN: 0973- 1520, Vol:12(1) P.166-168. NASS Rating 4.39.
7	Meenambigai, J.Siddam Siva Ganga Yeswanth and C.Thatchinamoorthy.	Attitude, Knowledge and Extent of Utilization of ICT Tools among the staff and students of Faculty of Agriculture.	Journal of Global Communication	International	2017	10 (1) 26-28. 0976-2442
8	Merlin Kamala, I., J. S. Kennedy and I. I. Devanand. 2017	Technology gaps analysis in Integrated Management of Jasmine's leaf webworm (Nausinoe geometralis) in Tamil Nadu.	Asian Journal of Agricultural Extension, Economics & Sociology.	International	2017	19(2): 1-8. ISSN:2320-7021

9	Loganathan, B. and T. Kalidasan	Technological Gap Analysis of Cotton Growers	International Journal of Management and social science Research Review	International	2017	1(39):125 2349-6746
10	Darling B. Suji , M. Kavaskar and A.M. Sathish Kumar	Knowledge level of the farmers on eco-friendly agricultural technologies in paddy cultivation	International Journal of economic and business review	International	2017	5(5): 57-61 2349-0187
11	V. Balamurugan and M. Vetrivelan	Learning experience of big farmers in sugarcane cultivation	International Journal of Computationally Research and Development	International	2017	2(1) pp. 37-43 2456-3137
12	Tamilselvi.G. and T Balakrishnan	Entrepreneurial performance of women SHG members in Perambalur District of Tamilnadu	International Journal Of Global Economic Light	International	2017	vol. 4(1) 68-74 2250-2017
13	Loganathan, B. and T. Kalidasan	Yield Gap Analysis of Cotton Growers	Ahead International Journal of Recent Research Review	International	2017	1(15):21-23 2456-205X
14	Isaac Devanand, I., and I. Merlin Kamala	Indigenous traditional knowledge on crop protection practices	International Journal of Agricultural Science and Research	International	2017	7(5): 345-352 2321-0087
15	Kasidurai,S. and D.Vengatesan	Information Management Behaviour of Maize Growers of Perambalur District	International Journal of combined Research & Development (IJCRD)	International	2017	6(7):871-880. 2321-225X
16	Kavaskar,M ., SanthaGovind and A. Sharmila.	Awareness of information and Communication Technologies among Extension Personnel of State Department of Agriculture in Tamil Nadu	Progressive Research – An International Journal	International	2017	12 (Special-Part-I) : 1047-1049 0973-6417

17	Raj Pravin. T	Future trading in floriculture sector: Issues and opportunities for sustainable farm development	International Journal of Innovation in Agriculture Sciences	International	2017	1(2): 91-93 2456-7353
18	Dr.J.Meenambigai& C. Thachinamoorthy	Socio-Economic Development of Rural Women in Tamil Nadu: Empowerment through Agriculture. Emperor.	International Journal of Finance and Management Research, volume - III, special issue -1, March 2017.	International	2017	2395-5929 VOL.III
19	Dr. Isaac Devanand	Indigenous traditional knowledge on crop protection practices.	International journal of Agricultural Science and Research.,	International	2017	7(5):345-352.
20	Sujaively T, V. Kalirajan v, R. Muthukumar and M. Saravanan	Factors influencing the characteristics of the respondents with their extent of adoption of groundnut cultivation technologies	International Journal of Progressive Research	International	2017	Vol 12 0973-6417
21	Balamurugan .v Dhivya . A	Adoption behaviour of tapioca growers in namakkal district of tamilnadu	International journal of emerging technologies	international	2017	2349-5162
22	Balamurugan .v Sridharan . S	Information management behaviour of maize growers of salem district in Tamilnadu	International journal of emerging technologies	international	2017	2349-5162
23	Balamurugan .V Rajasekaran . R	A study on knowledge level of paddy farmers on system of rice intensification in krishnagiri district of tamilnadu	International journal of emerging technologies	international	2017	2349-5162

24	Natarajan M, T. Sujavelu and R. Jeya	Assessing the adoption level of indigenous practices among tribal women of kalrayan hills	EDU World	National	2018	2319-7129
25	SanthaGovind, Chigasil. M. Sangma and M.Kavaskar	Adoption of Indigenous Paddy Cultivation Practices among Tribal Farm Women of West Garo Hills District of Meghalaya	Mysore Journal of Agricultural Sciences	National	2018	52(3):613-620(ISSN- 0047-8539)
26	NirubanChakkaravarthy. D and T. Balakrishnan	Impact of Krishivijyan Kendra on knowledge f Integrated crop management practices	Journal of Agro ecology and Natural Resources Management	National	2018	5(1) : 47-52 e-ISSN:2394-0791
27	Meenambigai, J. and Thatchinamoorthy,C.	A Study on Socio Personal and Psychological Characteristics of Banana Growers in Thanjavur District	Innovare Journal of Agricultural Science	National	2018	6(1):20-22 ISSN-2321-6832
28	Meenambigai, J.	Extent of utilization of ICT tools among the staff and students of Faculty of Agriculture.AU.	International journal of Agricultural Science and Research,	National	2018	6(20): 7402- 7404. 0975-3710
29	Thatchinamoorthy,C. and J. Meenambigai.	Entrepreneurial Stress Management of Women Entrepreneurs	Pramana Research Journal.	National	2018	8(11):284-291. 2249-2973
30	Merlin Kamala, I., J.S. Kennedy and I. I. Devanand	Technology gaps analysis and prominence of two spotted mite, Tetranychusurticae of Jasmine in Tamil Nadu	Indian Research Journal of Extension Education	National	2018	18(1): 88-93
31	Darling B Suji, Kavaskar, M and A M Sathish Kumar.	A Study on Adoption of Eco-friendly Practices in Rice”	Research Journal of Agricultural Sciences	National	2018	9 (Spl):154-156 0976-1675
32	Suriyapriya.E.,Kavaskar,M and SanthaGovind	Effectiveness of Mobile Agro Advisory Service as Perceived by	Bulletin of Environment,	National	2018	7(7):32-36.

		the Members of Farmer Producer Organization	Pharmacology and Life Sciences			
33	Balamurugan,V	A study in constraints Experienced by the Big farmers in Sugarcane cultivation	Multilogic in science	National	2018	8 : 209-210 2277-7601
34	Sakthivel, V. and K. Kanagasabapathi	Crop Protection Technologies in Tapioca Cultivation-An Adoption Study	Mutilogic in Science	National	2018	8:277-278 SP:2277-7601
35	P.Shanmugaraja, K. Kanagasabapathi and V.Prabudoss,	Factor influencing the characteristics of tribal farmers and their communication behaviour in Pachaimalai Hills	Multilogic in Science	National	2018	2277 - 7601
36	P. Shanmugaraja, R. Neelamegam and V. Prabudoss	Constraints expressed by the Tapioca farmers in Salem District	Multilogic in Science	National	2018	2277 - 7601
37	V. Prabudoss, R. Praveenkumar and P.Shanmugaraja	Siderophore synthesizing bacterial organisms from the Rhizosphere of Rice	Multilogic in Science	National	2018	2277 - 7601
38	Vengatesan, D and SanthaGovind.	Suitability Analysis of Farm Technologies are Perceived by Farm Women	The Mysore Journal of Agricultural Sciences	National	2018	52(5): 431-435. ISSN-0047-8539.
39	Kanimozhi. R and T.Kalidasan.	Extent of participation of the Mahatma Gandhi National Rural Employment Gurantee Act (MGNREGA) Beneficiaries in Salem District. EPRA	International Journal of economic and Business Review	International	2018	6 (5): 83-85 2349-0187
40	Balamurugan, V and R. Rajasekaran.	A study on knowledge level of paddy farmers on system of Rice Intensification in Krishnagiri District of Tamil Nadu.	Journal of emerging Technologies and Innovative Research,	International	2018	5(9): 523-526 2349-5162

41	Balamurugan, V and A. Dhivya.	Adoption Behavior of Tapioca Growers in Namakkal District of Tamil Nadu	Journal of Emerging Technologies and Innovative Research	International	2018	5(8): 1336-1339
42	Balamurugan, V and S. Sridharan	Information Management Behavior of Maize Growers of Salem District of Tamil Nadu	Journal of emerging Technologies and Innovative Research	International	2018	5 (9):195-197 2349-5162
43	JenilaStephency, T. and D. Vengatesan	Entrepreneurial Behaviour of Coconut Growers in Kanyakumari District	EPRA - International Journal of Economic and Business Review	International	2018	6(5): 99-104 2347-9671
44	Kanimozhi, R. and T. Kalidasan	Socio- Economic Impact of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) Beneficiaries in Salem District of Tamil Nadu	International Journal of Applied and Advance Scientific Research	International	2018	3:298-301 2456-3080
45	JenilaStephency, T. and D. Vengatesan	Marketing Behaviour of Coconut Growers in Kanyakumari District	International Journal of Applied and Advanced Scintific Research	International	2018	3(1) : 273-276 2456-3080
46	Sakthivel, V. and M.Manoharan	Knowledge and Adoption Levels of Tapioca : An Analysis of Technology wise Differences	International Journal of Agriculture Sciences	International	2018	10 (14): 6738-6739 0975-3710
47	Ramesh,P. and K.Poovarasana	Knowledge level of indigenous cultivation practices among tribal farmers in kolli hills	International journal of applied and advanced scientific research	International	2018	3(1):268-272 2456-3080
48	Thatchinamoorthy,C and Meenambigai,J	Customer Relationship Management and Retention in Street Food Sector	International Journal of Food and Nutritional Science	International	2018	DOI: 10.15436/ 2377-0619
49	V. Balamurugan and T. Balakrishnan	Constraints Experienced by the small farmers in sugarcane cultivation	International Journal of Agriculture Sciences	International	2018	10(14) 6694-6695

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50	K.Poovarasam and Ramesh,P	Extent of adoption on indigenous cultivation practices among tribal farmers in kolli hills	International journal of Economic and business review	International	2018	6(5):94-98 2347-9671
51	Ramesh P, SanthaGovind	Adoption of sugarcane growers on transfer of technologies by quasi government and private extension service	International journal of Multi logic in Science	International	2018	2277-7601
52	Balamurugan . V	Learning experience of marginal farmers in sugarcane cultivation	Agriculture update	International	2018	Vol -13 376-378
53	Tamilselvi,G, Eswaran,P. and T.Balakrishnan	Entrepreneurial performance of farmers practicing mixed cropping in Salem district of Tamil Nadu	Pramana Research Journal	National	2019.	Vol.9(3):122-127
54	Tamilselvi,G, Balakrishnan,T and M.Vetriselvan	Knowledge level of Betel vine growers on recommended Betel vine technologies	Journal of Emerging Technologies and Innovative research	National	2019	6(6):351-355
55	Meenambigai. J and Thatchinamoorthy. C	Training need Assessment of Extension personnel in ICT and Transfer of Technology	Pramana Research Journal	National	2019	9 (5) : 1360-1367
56	Sakthivel, V. and K. Kanagasabapathi	Training Needs of Tapioca Growers on Value Added Products of Tapioca	Journal of Pharmacognosy and Photochemistry	National	2019	8(2): 359-361 sp:2278-4136
57	Sakthivel, V	Marketing Behaviour of Tapioca Growers	Journal of Emerging Technologies and Innovative Research	National	2019	6(1): 1-6 ISSN:2349-5162
58	Sakthivel, V. and M. Manoharan	Attitude of Tapioca Growers Towards Value Added Products of Tapioca	Think India Journal	National	2019	Volume 22 (10): 7021-7024. ISSN: 0971-1260

59	Sakthivel, V., Sakthiganesh, M. and K. Kanagasabapathi	Knowledge Level of Sugarcane Gowers about Recommended practices in Sugarcane Cultivation,	Think India Journal	National	2019	Volume 22 (14): 11091-11098. ISSN: 0971-1260.
60	T. Sujavelu& M. saravanan	Extent of knowledge level of groundnut growers on recommended groundnut cultivation technologies in salem district	Journal of Pharmacognosy and Phytochemistry	National	2019	SP 352-355 2349-8234
61	Dr.V. Balamurugan	Research paper title on “Social Participation and Extension Agency Contact of tapioca growers in Namakkal District of Tamil Nadu”.	pramana research journal	National	2019	2249-2976.
62	Dr. M. Kavaskar&S.Sharmila	Factors influencing awareness level of extension personnel regarding information and communication technologies	Think India Journal	National	2019	Vol. 22 Issue:10, ISSN: 0971-1260
63	Blau.D, M. Kavaskar	Relationship of characteristics of the respondents with the extent of utilization pattern of ICT tools	Think India Journal	National	2019	Vol. 22 Issue:10, ISSN: 0971-1260
64	V.Balamurugan P.Shanmugaraja T.Balakrishnan	Adoption of paddy farmers on eco friendly pest management practices for sustainable agriculture	Journal of pharmacognosy and phytochemistry	National	2019	E-2278-4136 P-2349-8234
65	V.Balamurugan T.Balakrishnan J U . Janusia	Social participation and extension agency contact of cocoinut growers in tiruppur district of tamilnadu	Journal of pharmacognosy and phytochemistry	national	2019	E-2278-4136 P-2349-8234
66	T.Balakrishnan V.Balamurugan	A study on knowledge level of trainees of recommended technologies given by PKKVK,	Journal of pharmacognosy and phytochemistry	national	2019	E-2278-4136 P-2349-8234

	P.Shanmugaraja	Pondicherry				
67	P.Shanmugaraja V.Balamurugan N.Senthilkumar T.Balakrishnan	Identification of traditional tribal agricultural practices in pachaimalai hills of tamilnadu	Journal of pharmacognosy and phytochemistry	national	2019	E-2278-4136 P-2349-8234
68	V.Balamurugan T.Balakrishnan A.P.Srinivasaperumal J.u.Janusia	Market orientation and market perception of coconut growers of tiruppur district of tamilnadu	Journal of pharmacognosy and phytochemistry	national	2019	2249-2976
69	V.Mangaiyarkarasi V.Balamurugan K.Sauseendran	Information management behaviour of sugarcane growers in cuddalore district	Pramana research journal	national	2019	2249-2976
70	Balamurugan. V and J. Manikandan	Constraints experienced by the paddy farmers in extent of adoption of cultivation practices	Plant Archives	International	2019	19 (1): 1125-1126
71	Kanagasabapathi, K. and V. Sakthivel	An analysis of Adoption of Organic Farming Practices of Tribal Farmers of Kolli Hills	Plant Archives	International	2019	19(2): 3533-3534. ISSN:0972-5210
72	Balamurugan,V. and J. Manikandan	Practice-Wise Adoption of Paddy Technology by Farmers in Ariyalore District of Tamil Nadu	Plant Archives	International	2019	19(2): 3338-3340
73	Balamurugan, V. and R. Rajaseharan	A Study on Constraints Experienced by the Farmers in	Plant Archives	International	2019	19(1): 1902-1904

		Adoption of System of Rice Intensification (SRI) Technologies				
74	Balamurugan, V. and M. Vetriselvan.	Farming Experience and Experience in Sugarcane Cultivation of Different Categories of Sugarcane Growers	Plant Archives	International	2019	19(1): 593-594.
75	Sakthivel, V. and K. Kanagasabapathi	A Diagnostic Study on Training Needs of Plant Protection in Tapioca in Tamil Nadu	Plant Archives	International	2019	19(2): 3197-3200 ISSN: 0972-5210
76	Thatchinamoorthy, C and J. Meenambigai	Role of Information Communication technology in Dissemination Agricultural Technologies analysis based on the secondary Data	International Journal of Advance and Innovative Research,	International	2019	6 (2): 62-65
77	T. Balakrishnan& K. Aitochopi, Balamurugan.V	Knowledge level of Respondents about the recommended rubber cultivation practices	International Journal of Research and Analytical Reviews	International	2019	(2): 558-561
78	J. Meenambigai	Factors Influencing perceived organizational climate of the Extension personnel in the state Department of Agriculture	International Journal of Advance and Innovative Research	International	2019	6 (2): 46-49
79	Darling B. Suji, M. Tamilselvan and C. Praveen Sampath Kumar	A study on the utilization behaviour of eco-friendly agricultural practices and their relationship with the characteristics of the respondents in erode district	Plant Archives	International	2019	19(2): ISSN: 2088-2092
80	T. Sujavelu	Marketing behaviour of mango growers in value addition	International Journal of Advance and Innovative Research	International	2019	Vol;6, ISSN: 2394-7780

81	T. Sujaivelu & Dr. K. Kanagasabapathi	Adoption of sustainable mango production technology and value addition by mango growers	International Journal of Emerging Technologies and innovation research	International	2019	Vol;6, ISSN: 2394-5162
82	Sakthivel, V. and K. Kanagasabapathi.	"Adoption of Tapioca Growers on value Added Products",	Review of Research	International	2019	Volume 4, Special issue: 105-107. ISSN: 2249-894X.
83	Kalirajan V & T. Sujaivelu	Promoting & Reinvigorating Agri-Horti Technological Innovations	International journal of Chemical Studies	International	2019	SP6:53-54 2349-3528
84	Dr.V. Balamurugan	Research paper title on "Social Participation and Extension Agency contact of Coconut Growers in Tiruppur District of Tamil Nadu".	International journal of Research and analytical review	International	2019	Vol. 6, pp. 898-901, May 2019.
85	Suriyapriya E & M. Kavaskar	Knowledge level of the members of farmer producer organization on mobile agro advisory service	Plant Archives	International	2019	Vol. 19, pp. 2955-2958, 2019.
86	Kavaskar, M and SanthaGovind. 2019.	"Sustainable Environment Management through Eco-friendly Agricultural Practices",	International Journal of Emerging Technologies and Innovative Research,	International	2019	6(2):24-28.
87	Dr. M. Kavaskar and A. Sharmila	Utilization of ICT Tools by the Extension personnel for effective delivery of farm information	IJITEE	International	2019	ISSN: 2278-3075
88	E.Suriyaproya, m. Kavaskar, Santhagovind	Association and contribution characteristics of the farmers with the utilization pattern of mobile	International Journal of Advance and Innovative Research	International	2019	ISSN: 2394-7780

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89	V.Balamurugan M.Vetriselvan	Massmedia exposure and information source utilization of different categories of sugarcane growers	International journal of tropical agriculture	international	2019	0254-8755
90	V.Balamurugan M.Vetriselvan	Socio economic and psychological characteristics with extent of adoption of different categories of sugarcane growers	Multilogic in science	international	2019	2277-7601
91	V.Balamurugan J.Manikandan	Constraints experienced by paddy farmers in learning experience	International journal of research and analytiucal reviews	International	2019	2349-5138
92	Balamurugan, V. and R. Rajaseharan	Association and contribution of socio economic and psychological characteristics of paddy farmers with their skills needs on SRI technologies	International journal of research and analytiucal reviews	International	2019	P-2349-5138 E-2348-1269
93	V.Balamurugan P.Ramesh S.Durairaj T.Balakrishnan	Annual income of different categories of sugarcane growers in cuddalore district of tamilnadu	International online multidisciplinary journal	International	2019	2249-894X
94	V.Balamurugan T.Balakrishnan A.P.Srinivasaperumal S.Kalaisudarason	Association and contribution of socio economic and psychological characteristics of paddy farmers with their learning experience and extent of adoption of technologies	IJRAR	International	2019	E-2348-1269 P-2349-5138

	J.Manikandan					
95	T.Balakrishnan V.Balamurugan K.Aito chopi	Knowledge level of respondents about the recommendeds rubber cultivation practices	IJRAR	International	2019	E-2348-1269 P-2349-5138
96	V.Balamurugan A.P.Srinivasaperumal R.Muthukumar J.U.Janusia	A study on farm size and farmiung experience of coconut growers in tiruppur district of tamilnadu	Plant archives	international	2019	0972-5210
97	Deepthy, R., Kanagasabapathi, K and V. Sakthivel.	“Constraints Encountered in Participation of Women in KudumbashreeActivities”,	Journal of Extension Education	National	2020	32 (3): 6572-6575. ISSN: 0971-3123.
98	Raj Pravin. T & S. Kathiresan	Digital Economy : Challenges and Opportunities	UGC care Journal	National	2020	40(3): 410:4193
99	Thatchinamoorthy. C and J. Meenambigai	Covid 19 Impact promoting Agriculture and Rural Economy	Research Explorer	National	2020	8 (29): 123-126
100	Kalidoss, B. and T. Raj Pravin	Corporate Social Responsibility Initiatives towards attainment Sustainable Development Goals	UGC Care Journal	National	2020	68(1):6-10
101	Raj Pravin, T	Case Study on Cyber Extension Initiatives towards Transfer of New Farm Technologies among Coastal Farming Communities of Cuddalore District	UGC Care Journal	National	2020	40(3):4184-4198
102	Sujaivelu T, E. Devadharshini and M. Natarajan	Role performance of Farm Women in Turmeric Cultivation Practices at Salem District	Info Kara Research	National	2020	Vol 9,

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103	V. Sakthivel and Jeremy Konsam	Adoption of Recommended Technologies in Paddy Cultivation by the Paddy Growers	Our Heritage	International	2020	Volume 68- ISSN: 0474-9030
104	Balamurugan,V. and T. Balakrishnan	A study on Educational Status of different categories of Sugarcane Growers in Cuddalore District of Tamil Nadu	Plant Archives	International	2020	20(1): 3050-3051
105	Thatchinamoorthy, C and J. Meenambigai	Formulation and validation of a Nutritional Knowledge Test Items for Street food Vendors and Consumers	Journal of Xidian University	National	2020	14(5): 5815-5821
106	Sakthivel, V. and A. Srikanth	Factors Influencing Marketing Behavior of Tapioca Growers	Plant Archives	International	2020	20(1): 2494-2496 SP:0972-5210
107	Jeremy Konsam and V. Sakthivel	Knowledge Level of Paddy Growers about Recommended Technologies in Paddy Cultivation	Plant Archives	International	2020	20(1): 2489-2493 SP:0972-5210
108	Kathiresan, M. and M. Vetrivelvan	Training Needs of Malayali Tribal Farmers of Kolli Hills in Tapioca Cultivation	Plant Archives	International	2020	20(1): 1773-1776
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163	M. Kathiresan& M. Vetrivelvan	Training needs of Malayali Tribal Farmers of Kolli hills in Tapioca Cultivation	Plant Archives	International	2020	0972-5210
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189	Sathishwaran. R, T. Kalidasan and M. Kavaskar	Constrains faced by Mango Growers in Krishnagiri District	DogoRangsang Research Journal	National	2021	ISSN: 2347-7180.
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**BOOKS (AUTHORED / EDITED) 12**

S.No	Author(s)	Title of the book	National / International	Year of publication	ISBN number	Name of the publisher & address
1	Meenambigai, J	Advances in Communication and Extension Management	National	2018	ISBN:978-93-87756-35-9	Maya publication, New Delhi
2	Meenambigai, J.and C.Thatchinamoorthy	Text book of Extension communication and information technology	National	2018	ISBN: 978-81-8321-468-	Agro tech Publishing Academy, Udaipur
3	Meenambigai J	.e-book on e-Extension Kindle Unlimited	National	2019	ASIN:B07MZRN7KW	Amazon Publishers
4	SanthaGovind, Kavaskar, M. and D.Vengatesan	Sustainable Agriculture and Rural Livelihoods	International	2019	ISBN 978-0-359-58134-4	published by Lu Lu.com,3101, Hillsborough St. Raleigh , NC 27607,United States:50-54
5	Vengatesan,D., Kavaskar,M., Ramesh,P., Selvamuthukumar,T., Arivudainambi, S and Santha Govind	Recent Trends in Agriculture towards Food Security & Rural Livelihood (Volume I)	International	2020	978-81-947065-2-6	Archers & Elevators Publishing house, Bangalore
6	Vengatesan,D., Kavaskar,M., Ramesh,P., Selvamuthukumar,T., Arivudainambi, S and Santha Govind	Recent Trends in Agriculture towards Food Security & Rural Livelihood (Volume II)	International	2020	978-81-949889-3-9.	Archers & Elevators Publishing house, Bangalore
7	Santha Govind., Arivudainambi, S., Selvamuthukumar,T., Vengatesan,D Kavaskar,M., and D.Balu.	Edited Book on Recent Trends in Agriculture towards Food Security & Rural Livelihood (Volume III).	International	Jan 2022	9789391131524	Royal Book Publishing House, Salem - 636103. India.
8	Santha Govind., Arivudainambi, S.,	Recent Trends in Agriculture towards Food Security & Rural	International	Jan 2022	9789391131593	Royal Book Publishing House, Salem - 636103. India.

	Selvamuthuk umaran,T., Vengatesan,D ., Kavaskar,M., and D.Balu.	Livelihood (Volume IV).				
9	Kalirajan.V., Kavaskar.M., Vengatesan.D ., D.Balu and V.Sakthivel	Transforming Agricultural Extension Systems towards Achieving Food and Nutritional Security (Volume I).	International	March 2022	9789391 131265	Royal Book Publishing House, Salem - 636103. India.
10	Kalirajan.V., Kavaskar.M., Vengatesan.D ., D.Balu and V.Sakthivel	Transforming Agricultural Extension Systems towards Achieving food and nutritional Security (Volume II).	International	March 2022	9789391 131326	Royal Book Publishing House, Salem - 636103. India.
11	Meenambigai. J. and Siddam siva ganga yeshwanth	Attitude knowledge and utilization of ICT tools among the staff and students	International	Februa ry 2021	ISBN: 978-93- 90996- 91-9	Archers & Elevators publishing house N0.54,MM layout, Hesaragatta Main road, Banglore- 560090
12	Meenambigai, J.and C.Thatchinamo orthy	Extension Methodologies and Transfer of Agricultural Technology	National	May 2022	ISBN:97 8-93- 91373- 51-1	Shanlax Publications, Madurai.

### Awards and Recognitions by the Faculty

S.No	Year of Award	Name of the Faculty	Awards/Recognitions
1	2017	Dr.P.Shanmugaraja	Best Doctoral Thesis Award
2	2017	Dr.T. Raj Pravin	Best Paper Presentation Award
3	2017	Dr.T.Raj Pravin	First prize in the state level seminar or recent trends in microbial technology
4	2017	Dr.V. Balamurugan	Best YRC Programme Office Award
5	2017	Dr.V.Balamurugan	Best YRC Programme Officer Award
6	2017	Dr.R.Muthukumar	Popular Extension Worker Award
7	2018	Dr.Santha Govind	Out Standing Achievement Award
8	2018	Dr.D.Vengatesan	Excellence in Extension Award
9	2018	Dr.P. Shanmugaraja	Best Researcher Award
10	2018	Dr.V.Sakthivel	Popular Extension Worker
11	2018	Dr.V. Sakthivel	Best Poster Award
12	2018	Dr.M. Kavaskar	Best Young scientist Award
13	2018	Dr.M.Kavaskar	Best Young scientist Award
14	2018	Dr.T. Kalidasan	Dr.Sir.C.V Raman Best Scientist Award
15	2018	Dr.R.Jayasankar	Best Oral Presentation Award
16	2018	Dr.R.Jayasankar	Best Oral Presentation Award
17	2018	Dr.R.Jayasankar	Excellence in Teaching Award
18	2018	Dr.R.Jayasankar	Excellence in Extension Award
19	2018	Dr.T. RajPravin	Best Oral Presentation
20	2018	Dr.T.RajPravin	Best Oral Paper Presentation Award
21	2018	Dr.V. Balamurugan	Scientist of the Year Award

22	2018	Dr.V. Balamurugan	Best Researcher Award
23	2018	Dr.V.Balamurugan	Scientist of the Year Award
24	2018	Dr. P. Ramesh	Best Teacher Award
25	2018	Dr.R.Muthukumar	Best Young Scientist Award
26	2018	Dr.R.Muthukumar	Best Poster Presentation Award
27	2018	Dr.R.Muthukumar	Excellence in Extension Award
28	2018	Dr.V.Kalirajan	Best Young Extension worker
29	2019	Dr. J. Meenambigai	Outstanding Women Scientist Award
30	2019	Dr.D. Vengatesan	Best Oral Presentation Award
31	2019	Dr.D.Vengatesan	Young Scientist Award
32	2019	Dr.P.Shanmugaraja	Best Oral Presentation
33	2019	Dr.P.Shanmugaraja	Excellence in Teaching Award
34	2019	Dr.V.Sakthivel	Excellence in Teaching Award
35	2019	Dr.M.Kavaskar	Outstanding Extension Worker Award
36	2019	Dr. T. Kalidasan	Excellence in Research Award
37	2019	Dr. T. Kalidasan	Dr. A.P.J. Abdul Kalam National Award
38	2019	Dr.R.Jayasankar	Outstanding Extension Worker Award
39	2019	Dr.R.Jayasankar	Best Oral Presentation
40	2019	Dr.R.Jayasankar	Best Oral Presentation
41	2019	Dr.R.Jayasankar	Outstanding Faculty in Agricultural Sciences
42	2019	Dr.V.Balamurugan	Best Researcher National Award
43	2019	Dr.V.Balamurugan	Excellence in Teaching Award
44	2019	Dr. T. Balakrishnan	Best Young Scientist Award

45	2019	Dr. P. Ramesh	Popular Extension Worker
46	2019	Dr. P. Ramesh	Excellence in Extension Award
47	2019	Dr. P. Ramesh	Dr.B.R.Ambedkar National
48	2019	Dr. B. Sudhakar	Best Paper Award
49	2019	Dr. B. Sudhakar	Excellence in Teaching Award
50	2019	Dr.R.Muthukumar	Popular Extension Worker Award
51	2019	Dr.R.Muthukumar	Best Poster Presentation Award
52	2019	Dr.R.Muthukumar	Popular Extension Worker Award
53	2019	Dr.V.Kalirajan	Excellence in Teaching Award
54	2019	Dr.V.Kalirajan	Young Scientist Award
55	2019	Dr. T. Sujaivelu	Excellence in Extension Award
56	2019	Dr.Darling B. Suji	Best Oral Presentation Award
57	2019	Dr. Darling B.Suji	Popular Extension Worker Award
58	2020	Dr. J. Meenambigai	Distinguished Women in Agricultural Sciences
59	2020	Dr.T. Kalidasan	Best Oral Presentation Award
60	2020	Dr.Darling B. Suji	Best Young Scientist Award
61	2021	Dr.V.Sakthivel	Best Extension Scientist Award
62	2021	Dr.V.Sakthivel	Dr. APJ. Abdul Kalam Research Excellence Award
63	2021	Dr.M.Kavaskar	Dr. M.S. Swaminathan Research Excellence Award
64	2021	Dr.M.Kavaskar	Distinguished Scientist Award
65	2021	Dr.M.Kavaskar	Publication of Proceedings
66	2021	Dr.R. Jayasankar	Best Oral Paper

67	2021	Dr.V. Balamurugan	Dr. M.S. Swaminathan Research Excellence Award
68	2021	Dr.V. Balamurugan	Best Teacher Award
69	2021	Dr.DarlingB.Suji	Young scientist
70	2022	Dr. J. Meenambigai	Best Oral Presentation Award
71	2022	Dr. J. Meenambigai	Best Women Academician of the Year Award
72	2022	Dr.V.Sakthivel	Best Paper Award
73	2022	Dr.V. Balamurugan	Best Oral Presentation Award

### Seminars/Conferences/Workshops organized

Date	Topics	No. of Participants
01.11.2018 & 01.11.2018	National Seminar on Extension Strategies and Technologies for Sustainable Agricultural Development	255
26.04.2019 & 27.04.2019	National conference on Sustainable Agriculture and Rural Livelihood (SARL)	214
03.01.2020 & 04.01.2022	International Conference on Recent Agricultural Programmes to improve the Livelihood of farmers in Asian and African countries	232
12.09.2021	International Virtual Conference on Recent Agricultural Programmes to Improve the Livelihood of Farmers in Asian and African Countries	232
16.09.2021	International Virtual Conference on Advances in Information and Communication Technology	235
18.09.2021	International Virtual Conference on Nutritional Security for 21 <sup>st</sup> Century	242
21.09.2021	International Virtual Conference on Extension Management Strategies for Sustainable Agriculture	227
29.09.2021	IQUART Virtual Workshop on Skill Development of Youth for Self Employment Opportunities in Agriculture	230
01.10.2021	International Virtual Conference on Improving Rural Economy Through Innovative Extension Approaches	258
21.03.2022 & 22.03.2022	National Conference on Transforming Agricultural Extension Systems towards achieving Food and Nutritional Security	110

### List of funded Projects (2017-2022)

Sl. No.	Title of the project	Name of Principal & Co Principal investigator	Period	Sponsoring agency	Out lay (in lakh rupees)
1	Rural Urban Connectivity Centers for Technology Dissemination Research and Livelihood Sustainability	Dr. M. Kavaskar (Project Co-Ordinator)	11.06.2019 to Till date	TNSCST - Chennai	77.35
<b>Total</b>					<b>77.35</b>

### Extension Activities

#### Extension and Farm Advisory Services /Technology Dissemination initiatives

As a extension service the staff members of the Agricultural Extension have well established contacts with farming community in and around the surrounding of Cuddalore district through RAWE programme. They also have well established link with the various stakeholders like State Department of Agriculture, Panchayatraj Institutions, KVK, Regional Research Stations and NGO's. During RAWE programme, the staff members facilitated the students to organize and conduct various commendable extension activities like meeting, demonstrations, campaigns and exhibitions in the villages.

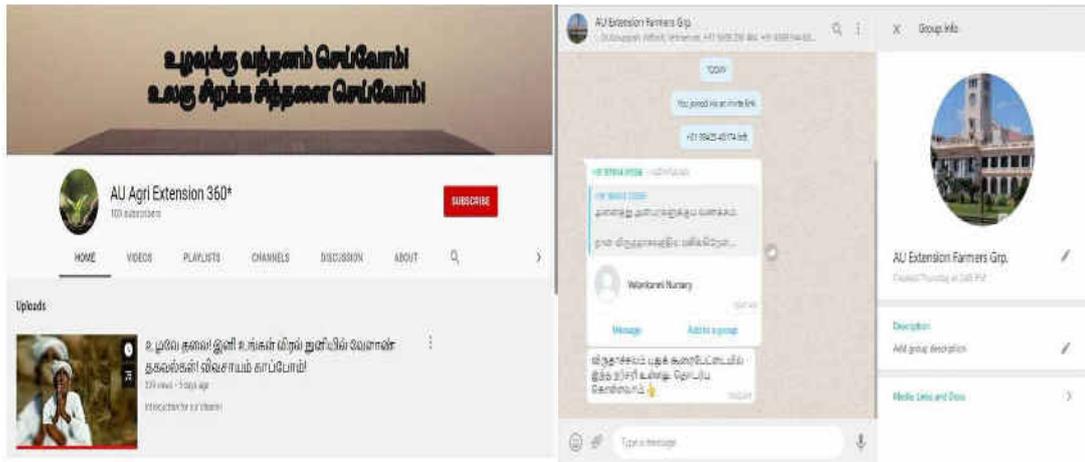
Due to Covid 19 lockdown the staff members of the department rendered online farm advisory services to the farmers in and around Cuddalore district, by sharing information to their whatsapp. Whatsapp group was also started in the name of AU Extension Farmers Group. A total number of 208 farmers joined this link. Extension scientists, TNAU KVK Scientists and State Agriculture Department Officials have also joined as members of this group and shared useful farm information through text, voice messages and videos.

A You Tube channel **AU Agri Extension 360'** has been initiated. So far 19 videos have been uploaded on various agricultural technologies.

<https://youtube.com/channel/UCPINaWNVVEAT25B-mArNXVw>

Link: <https://youtu.be/Z2uK-o0dQKs>

Link: <https://chat.whatsapp.com/FBIv9Mvo0y6G6HFPSkObmr>



### Farmers Agricultural Technology Information Cell (FATIC)

Considering the information needs of the farming community, a separate cell FATIC (Farmers Agricultural Technology Information Cell) was initiated on 14.02.2022 with the following objectives:

1. To satisfy the information needs of farming community
2. To clarify doubts and offer solutions in Agriculture and Animal Husbandry areas.
3. To organize demonstrations and trainings to farmers, Self Help Group members, Farmers producer Organizations, Extension Professionals and Researchers.
4. To disseminate new and latest farm technologies and also to organize awareness campaigns about welfare programmes of central and state governments.

### Farmers Agricultural Technology Information Cell



### Agriculture Museum

The Agriculture Museum, Annamalai University is the epitome of Excellency in the field of agriculture. The museum exhibits genesis of Faculty of Agriculture over the past decades. With its commitment towards Excellency in agriculture, it has manifested

indigenous technical knowledge in costal farming system of Tamil Nadu. The museum displays various blocks representing technologies used in the farming. The museum houses different models containing evolution of agriculture models, automatic weather station, models of agricultural implements models of soil profile, traditional storage of seeds. The models of termite colony and models of glass house & poly house used for growing of vegetables under controlled conditions, models for crop training and food security, models for rearing of honeybees and silkworm rearing also models of animal husbandry, models being displayed and other useful information being displayed about the diseases, pest, cultivation practices etc., along with various activities carried out by various departments, and various information of all the agriculture departments are displayed.

<https://youtube.com/watch?v=ShSGGDSbjDU&feature=share>



### **Agricultural Museum**

The Department of Agricultural Extension regularly organizes farmers day to introduce new agricultural technologies and innovations to the farming community. On the occasion of farmers day, meetings and demonstrations are also organized to enhance knowledge and skill among the farmers, farm women and rural youth. To enhance capacity building, EDP vocational skill oriented training programmes are also organized by the department of agricultural extension. As a recent initiative agricultural extension conference was also organized on 23.12.2021. Farmers Day was conducted on 28.03.2022 and invited lectures were delivered by the Subject Matter Specialist (SMS) of Faculty of Agriculture, Annamalai University.

### **Farmers Day 2022**



**Agricultural Extension Conference for Farmers**



**Village Extension Activities - Nakranvanthankudi  
Demonstration on Panchakavya Preparation**



**Awareness Programme on Use of Computers and Mobile Phones in Agriculture for Woman Self- Help Groups in Kumaramangalam Village**



**Interaction with Farmers on Crop Protection at Chitthalapadi**



**Discussion about Eco-friendly Technologies of Paddy for Sustainable Agricultural Development -Kumaramangalam**



### 6.4.3. TECHNICAL AND SUPPORTING STAFF

Sl. No.	Posts	Sanctioned	Filled	Vacant	Faculty in place	Responsibilities
1.	Secretarial Staff	1	1		1	<ul style="list-style-type: none"> <li>➤ Teaching staff and students incoming and outgoing circular maintenance.</li> <li>➤ RAWE Programme &amp; Rural development file. Visitors service &amp; visitors file.</li> <li>➤ Issue of all Examination timetable.</li> <li>➤ Audio, video aids stock maintenance.</li> <li>➤ UG, PG, PhD - Mid-Semester Marks, attendance and practical exam answer papers collection and maintenance,</li> <li>➤ Budget Allotment.</li> <li>➤ Arranging All India Educational Tour.</li> </ul>
2.	Ministerial Staff	2	2		2	<ul style="list-style-type: none"> <li>➤ All File maintenance,</li> <li>➤ leave Register maintenance,</li> <li>➤ Imprest maintenance.</li> <li>➤ Teaching and Non teaching staff attendance maintenance.</li> <li>➤ Purchase &amp; bill passing.</li> <li>➤ To Prepare TA/DA Bill for external,</li> <li>➤ Board of studies - PG Board of Examination</li> <li>➤ PG Endowment Functions /Seminars related works.</li> </ul>
	<b>Total</b>				<b>3</b>	

### 6.4.4. CLASSROOMS AND LABORATORIES

Classrooms and laboratories available in the Department of Agricultural Extension

Sl. No.	Name of the instructional unit	Size (sq. ft)	Seating Capacity
1.	Agricultural Extension (Sociology & Psychology) Lab	1260 sq. ft (42' x 30')	30
2.	Ph.D. Class room	228 Sq.ft (19' x 12')	10
3	Library	600 sq .ft (30 x 20)	20



### Agricultural Extension (Sociology & Psychology) Audio Visual Lab

Particulars	Number
LCD- Epson Multimedia LCD Projector	5
Camera (SLR) with zoom, wide angle,tele-photo lens	2
Video camera with tripod and lighting accessories	2
Computer Work Station with Editing Software	2
Digital Voice recorders	7
Audio -recording mixing console	2
Computer software for statistics	2
Laptop	1
Smart TV	1
Interactive Smart Boards for class room	2

### Common Facilities available from Faculty of Agriculture

#### Dr. S. Chandrasekaran Hi-Tech Hall

Apart from the above, college is provided with Hi-Tech Hall with Video Conferencing facility with an area of 1,840 Sq. Ft. The Ph.D students are utilising the facility. The details of the Hi-Tech Hall are given below.

Particulars	Number
Computer	4
Laptop	2
LCD- Epson Multimedia LCD Projector	5
Smart TV	1
Interactive Smart Boards for class room	2
Video camera	1

### Common Facilities available from Annamalai University

#### 1. Info-Lab

A separate computer lab with internet connectivity (Info - Lab) is also available for the students use.

#### 2. Educational Multimedia Centre (EMMC)

The Educational Multimedia Centre (EMMC), Annamalai University extends its support for creating multimedia content.

The EMMC is equipped with high-end professional cameras, editing software, and other technological gadgets to produce digital Teaching and Learning contents. The centre is equipped with latest Audio - Visual gadgets for recording, editing and live streaming of high-quality multimedia educational programs.

The Centre caters to various Departments of study and wings of Directorate of Distance Education to produce teaching assistive multimedia content. Live interactive programs with eminent experts of National repute also can be conducted by this centre.

S.No.	Equipment and Software	Specifications
1.	Video Camera with Tripod	✓ 4k Handheld Camcorder with Camera mounted wireless lavalier microphone system
2.	Video camera - PTZ camera	✓ 1/2.5 Inch based 4K CMOS Color video camera
3.	Handycam	✓ 10 MP video Handheld camcorder
4.	Wireless Microphone, Wireless Hand-Held Microphone & Wired Hand-Held Microphone	✓ Camera mounted wired/wireless lavalier microphone system with adjustable in 25 kHz steps 20 frequency banks, each with up to 12 factory-present channels
5.	i-Mac system with acquisition cards	✓ 27-inch iMac with retina 5k display 3.8ghz 8 core 10 <sup>th</sup> generation intel core i7 processor ✓ Multi I/O Docking Station
6.	Final Cut Pro	✓ Professional post production software
7.	Audio - Video workstation	✓ CPU AMD Ryzon 9 3900X ✓ WINDOWS 10 Professional 64bit ✓ Graphics card NVIDIA GTX 1660 super ✓ Video editing software- Adobe premiere ✓ Audio recording and editing software - Adobe audition
8.	Desktop Computers and Laptop	✓ Intel core i7 (10 <sup>th</sup> generation) 32 Gb/1000 GB HDD/Windows 10 professional
9.	Studio Cool Lights with Stand	✓ 100w LED soft panel light 3200K/5600K colour temperature
10.	Video Mixer	✓ 8-channel Digital Video Mixer with 3G-SDI, HDMI, Composite Video plus dedicated DSK ✓ Built-in Multi viewer with Touch Control ✓ Mix between 8 video sources
11.	Audio mixer	✓ Built-in 24-bit Lexicon digital effects processor. ✓ 8+2 channel frame size

12.	Motorized chroma screen	✓ Wall mount 5x8 sized motorized chroma screen
13.	USB audio recorder	✓ With 8GB Internal Memory
14.	Web Presenter	✓ SDI Video Input - Video Output ✓ SDI Rates 1.5G, 3G, 6G, 12G ✓ HDMI Video Input 1 HDMI Video Output
15.	Video Recorder	✓ HD/SD-SDI Hard Drive Video Recorder ✓ HD/SD-SDI, Time code & Audio Interface. SDI/HDMI outputs. ✓ Support up to 120Mbps I-frame recording, 4:2:2 sampling, record MOV/MXF.
16.	Streaming Server	✓ H.264 Video Streaming Encoder ✓ Streaming videos in RTMPS, RTMP, RTSP formats to Social media
17.	Titler pro 7 software	✓ Professional Titles maker
18.	Disk Station +5-Bay NAS Server	✓ Access and share data with any Windows, macOS, and Linux computers or mobile device
19.	55 inch LED Monitor	✓ 55 inch 4K Ultra HD TV
20.	32 inch LED TV	✓ 32 inch Full HD TV
21.	22 inch LED Monitor	✓ 22 inch 4K Ultra HD Monitor
22.	HD Visual Communications System - Full HD video conferencing end point	✓ Multipoint (1+3) - Video Conferencing System ✓ Full HD 1080p image quality ✓ Multi-Device & Camera Control ✓ USB Memory Recording & Dual Monitor ✓ PTZ CAMERA and Microphone
23.	Interactive touch screen panel with Computer Pen	✓ Wacom Screen size 80 cm ✓ 4K ultra-HD

### Educational Media Centre



#### 6.4.5. CONDUCT OF PRACTICAL AND HANDS-ON-TRAINING

It is important to gain first hand theoretical knowledge that underlies any professional degree. But there are some skills that can only be learned through hands-on-practice. It is important that much of the learning material in any given courses should be provided in a way that allows Ph.D scholars to gates involved as possible to increase their knowledge and abilities. Students are getting sired practical and hands-on-training as per the curriculum aspects.

##### **Field visits/visit to renowned institutes, industries, progressive farms,**

- The syllabus of all the course are framed with adequate weight age for outdoor exposure field visits
- More than 50 percent of the practical syllabus is framed with such field visits to renowned institutes, industries and progressive farms. In Ph.D programme, out of the 21 course credits (inclusive of seminar), 9 credits are devoted exclusively for the practical exposure.
- The students are visiting the fields of different farming situations to understand their sociological and ecological problems. They are also visiting to the different field functionaries of the state department of agriculture, horticulture, animal husbandry, sericulture, marketing and other line departments and government and non-government agencies of rural development to understand their TOT initiatives, methodologies, approaches and related constraints.
- The students are also taken to various higher level management organizations. such as State bank of India, State Department of Agriculture, KVKs, Regional Research Stations and NGOs to study their organizational pattern, their initiative of human resource development and management and their rural development initiatives and approaches.
- The students are also taken to different levels of markets, news and other media agencies like dailies, AIR, DD Kendra, community radio centers. The practical classes of the extension courses are mostly of field visits, interaction with farmers, conducting PRA exercises and class room group exercises and final presentation.
- Subject specific field trips to different rural development / HRD based organizations and other related institutions are being undertaken to provide students first hand exposure to latest concepts and techniques. Students are encouraged to interact with the officials of public institutions such as Nationalized Bank like Indian bank, Office of the Joint Director of Agriculture, Cuddalore, ICAR-Krishi Vigyan Kendras (KVKs), and officials of the concerned visiting organization to get very clear understanding of the facts presented.

In this regard the following modalities are followed in the process in the conducting of practical classes

##### **Preparatory of Training**

- Students will be given an exhaustive orientation so as to have a prior knowledge and through preparedness while coming for the practical classes
- Arranging students into different groups. Preparation of necessary tools, interview schedules, checklists Finalizing the field visits and PRA tools to be practiced

### **Hands on training in field**

- Proper introduction to the individuals involved ( students/ farmers/ facilitators), also giving a clear outline about the purpose of the exercise
- Conduct of the field exercise involving farmers
- Documentation of the experiences generated by the students themselves
- If it is class room group exercise, group members will discuss among themselves and every group leader will make present atonal the end
- Classroom exercises involve, group discussion, brainstorming ,panel discussion and practicing PRA exercises

### **Hands on Training for Report Preparation**

- Discussion of the learning and clarification of the issues generated Developing record work
- Complimenting/assessing students performance.

### **Practical Manuals and Record Work**

To facilitate the process, the students are provided with printed practical manuals and record works, which carries the concept- oriented practical guidance, step by step procedures about different exercises, where in students will record their documented knowledge they synthesized during the practical classes.

### **Individual and Group Exercises**

Students will also be given suitable individual assignments and group exercises. The individual assignments will be carried out by the students with guidance of the course teachers and they will make presentation during the scheduled time. Similarly the group exercises will also be carried out by the group members. Adequate care being taken that every student tries contributing in the group exercises.

### **Approach of the RAWE Programme**

The students will contact the following departments / organization to learn k about agriculture related activities and transfer of technology to farmer all over Tamil Nadu.

1. Krishi Vigyan Kendra,
2. Department of Agriculture,
3. Department of Horticulture,
4. Department of Animal Husbandry,
5. Department of Agricultural Engineering,
6. Department of Revenue,

7. Contact farmers
8. NGOs and
9. Agriculture related industry

### Overall Outcomes of RAWE Programme

The overall outcomes of RAWE Programme from the perspectives of the students are summarized below:

- Field experience
- Team work
- Experiential and experimental learning
- Knowledge on field based research and extension methodologies
- Exposure to administration and management issues in context of rural and agricultural development Capacity building
- Acquainted with recent advancement in research and extension
- Updating and collecting information through different methods
- Understanding rural life
- Learning of bottom-up approach in planning
- Learning the techniques of stakeholders' participation in developmental programme
- Understanding local institutions and their need - Conflict management and negotiation skill
- Management of different components of farming system- Working with people organization
- Problem-solving attitude
- Awareness about rural economy
- Impact of rural and agricultural development on rural livelihood
- Knowledge on gender mainstreaming in agriculture
- Evaluation of RAWE Programme

#### RAWE Meetings & Demonstration



#### 6.4.6. SUPERVISION OF STUDENTS IN Ph.D. PROGRAMME

Each post-graduate student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise a Major Adviser (Chairman) and two members. Of the two members, one will be from the same Department of Faculty of Agriculture and the other in the related field from the other Departments of Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester. Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Adviser (Chairman) shall be made by the Head of the Department concerned. The chairman in consultation with the Head of the Department will nominate the other two members. In the event of the Major Adviser being away on other duty/leave for a period of more than three months, the member of the Advisory Committee from the same Department will officiate as the Major Adviser.

- Guiding students in drawing the outline of research work
- Guidance throughout the programme of study of the students.
- Evaluation of research and seminar credits.
- Correction and finalization of thesis draft.
- Conduct of qualifying and final Viva-Voce examination.
- The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.
- Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.

The student's plan for the post-graduate work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester. The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest. The outline of research work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the first semester.

SI.No	No. of Ph.D. recognized teachers	Academic Year	Intake of Students	Students Teachers
			Ph.D.	
1	4	2017-18	4	1:1
2	4	2018-19	4	1:1
3	7	2019-20	7	1:1
4	2	2020-21	2	1:1
5	3	2021-22	3	1:1

**Ph.D. Agricultural Extension Education Students Guided by Faculty Members**

S.No	Name of the Scholar	Name of faculty / Scientist	Year of submission	Title of thesis
1	Dr. D. Vengatesan	Mr. B. Guna	2017	Role of Farm Women in the Transfer of Eco-Friendly Technologies
2	Dr. K. Kanagasabapathi	Mr. K.J.N. Felix	2017	A Critical Analysis of Knowledge and Adoption of Recommended sugarcane Technologies by Registered and non-Registered Growers
3	Dr. P. Shanmugaraja	Mr. K. Siranjeevi	2021	A study on Indigenous Technical Knowledge (ITK) of Tribal Farmers in Kolli Hills of Tamil Nadu
4	Dr. K. Kanagasabapathi	Mr.Sesenlo Kath	2021	An Analysis of Knowledge And Adaptation Strategies of Farmers to Overcome The Adverse Effects of Climate Change in Agriculture in Nagaland State
5	Dr. J. Meenambigai	Mr.C.Thatchinamoorthy	2022	Role of Street Eateries in Access to Food for Low Income Population in Tamil Nadu
6	Dr. M. Kavaskar	Mr.D.Balu	2022	Climate Change on Agriculture- Perceived Impact and Adaptation Strategies in the Disadvantaged Districts of Tamil Nadu
7	Dr. M. Vetriselvan	Mr. M. Kathiresan	2022	A Diagnostic Study on Training Needs of Malayali tribal Farmers of Kolli Hills in Agriculture and allied Activities
8	Dr. M. Kavaskar	Ms.E.Suriyapriya	2022	A Study on Impact of Farmer Producer Organizations (FPOs) among the Small and Marginal Farmers of Tamil Nadu
9	Dr. M. Kavaskar	Mr. J. Sivasubramanian	2022	An Analysis on Agricultural Technology Management Agency (ATMA) Scheme of Puducherry Union Territory

#### 6.4.7. FEEDBACK OF STAKEHOLDERS

Feedback is obtained from stakeholders at the end of every semester. After analyzing the feedback carefully, suitable welfare measures are taken.

- To quantify the level of satisfaction acquired by students in curricular aspects during the course of learning in Department of Agricultural Extension.
- To measure the level of satisfaction acquired in the skill set by alumni in general and curricular aspects during the course of learning in Department of Agricultural Extension. To identify the pit falls and bottle necks in the process of facilitating teaching learning process
- To address the problems and the gaps for process improvement.
- To derive strategies for quality enhancement and 6. To set new goals for future in the event of new education policy.

Stakeholders	Action Taken
<b>Students</b>	<ul style="list-style-type: none"> <li>• Conducting coaching classes for competitive and qualifying examination such as ASRB NET, ICAR, Fellowship and Ph.D.</li> <li>• Internship introduced during PG programme.</li> <li>• Measures taken to established well equipped Audio Visual Laboratory.</li> <li>• Subscription of e-Journals and Magazine in field of Agricultural Extension.</li> <li>• Regular Institutional visits and short study tours are organized.</li> </ul>
<b>Farmers</b>	<ul style="list-style-type: none"> <li>• Farmers Agricultural Technology and Information Cell is established.</li> <li>• Diagnostic field visits are performed as and when arises.</li> <li>• ICT enabled Farm oriented advisory services like Whats App Group and YouTube Channels is started.</li> <li>• Meetings and Demonstrations are conducted in adopted villages.</li> </ul>
<b>Parents</b>	<ul style="list-style-type: none"> <li>• Department infrastructure is improved</li> <li>• Measures taken for student fellowship</li> </ul>

#### 6.4.8. STUDENT INTAKE AND ATTRITION IN THE PROGRAMME FOR LAST FIVE YEARS

##### Ph.D. Students

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
4	4	7	2	3	-	-	100%	-	-

### Students qualified SRF/NET/ARS Examinations:

Name of the students	Degree programme	Roll number	Name of qualified examination	Year
R. Priyanka	Ph.D.	1950210007	NET	2022

### Placement of Ph.D students

Academic Year	Number of students graduated	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	2							Nil
2018-19								
2019-20								
2020-21	2							Nil
2021-22	6				3		3	50%

### Details of Placement

Name of the students	Degree programme	Roll number	Types of Job (Govt. or Private)
Dr.C.Thatchinamoorthy	Ph.D.	1550210001	Private
Dr. M. Kathiresan	Ph.D.	1650210001	Private.
Dr.S. Dineshkumar	Ph.D.	1850210002	Private.

### Students Awards/Recognition

C. Thatchinamoorthy	Ph.D	1550210001	Young Researcher Award	2018-19
C. Thatchinamoorthy	Ph.D	1550210001	Best Oral Presentation Award	2018-19
C. Thatchinamoorthy	Ph.D	1550210001	Best Oral Presentation Award	2018-19
D.Balu	Ph.D	1850210001	Best Thesis Award	2018
C. Thatchinamoorthy	Ph.D	1550210001	Young Researcher Award	2019
D.Balu	Ph.D	1850210001	Excellence in Communication Award	2019

D.Balu	Ph.D	1850210001	Best Oral Presentation Award	2019
D.Balu	Ph.D	1850210001	Student of the Year Award	2020
D.Balu	Ph.D	1850210001	Dr.M.S.Swaminathan Young Scientist Award	2021
D.Balu	Ph.D	1850210001	Best Oral Presentation Award	2021
D.Balu	Ph.D	1850210001	Best Research Scholar Award 2021	2021

#### Students Fellowship:

Name of the students	Degree programme	Roll number	Fellowship	Year
Mr. K. Siranjeevi	Ph.D	1350210004	Rajiv Gandhi National Fellowship	2017-18
C. Thatchinamoorthy	Ph.D	1550210001	Rajiv Gandhi National Fellowship	2017-18
D.Karnaraja	Ph.D	1550210002	Rajiv Gandhi National Fellowship	2017-18
R. Rajasekaran	Ph.D	1550210003	Rajiv Gandhi National Fellowship	2018-19
S. Suganya	Ph.D	1650210002	ICSSR Doctoral Fellowship	2018-19
S. Rajaguru	Ph.D	1950210003	ICSSR - Doctoral Fellowship	2021-22
V. Thirumalkannan	Ph.D	1950210004	ICSSR - Doctoral Fellowship	2021-22

#### 6.4.9 ICT Application in Curricula Delivery

- The teaching faculty are used PPT presentations, e-resources and online journals and magazines for effective delivery of various course contents in Ph.D. programme.
- They also updated the usage of IT enabling gadgets and online platforms like ZOOM, GOOGLE MEET, MS TEAM and GOOGLE CLASS ROOM for handling classes during COVID 19 Pandemic.

- Post graduate programme classes are handled with advanced audio visual aids like interactive white board, smart TV, e-learning modules of e-PG pathsala and vidya mitra, e-content portals and YouTube video clippings.

- Students are made to make presentations in the recent topics of relevant subjects with the use of ICT tools.

- The staff member and scholars also made presentations through Video Lecture related to the course content. **ICTs for dissemination of Agricultural Technologies:** <https://youtu.be/fk1bzixwB6o>.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. A. Angayarkanni** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
Ph.D. Microbiology**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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6.4.11	Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.	27
6.4.12	Certificate (Applicable when SSR is submitted for Programme)	27



# ANNAMALAI UNIVERSITY

(Accredited with 'A+' Grade by NAAC)

ICAR ACCREDITATION

## FACULTY OF AGRICULTURE

SELF STUDY REPORT FOR Ph.D. MICROBIOLOGY

Annamalainagar- 608 002  
Tamil Nadu  
2022 -2023

#### 6.4. Self-Study Report for the Programme

Name of the Programme: Ph.D., Microbiology

Conducted by: Department of Agricultural Microbiology

##### 6.4.1. Brief History of Ph.D. Agri Microbiology Programme

The Division of Microbiology was established during 1958 under the Department of Agriculture for the first time in India by an eminent world renowned Microbiologist Dr. G. RANGASAMY. Even before attaining Department status, the division offered post graduate programme and Ph.D., Programme in Microbiology. During 1980, the division got elevated as Department.

Sl.No.	Historical Itinerary	Year of Commencement/ Period
1	Division of Microbiology	1958
2	Post Graduate in Agricultural Microbiology	1959 onwards
3	Department Status	1980

As per the fifth Dean's committee recommendation of ICAR for the Ph.D. Microbiology programme a total of 100 credits are offered which includes 12 credits for major courses, 6 credits for minor courses, 5 credits for supporting courses, 2 for credit seminar and 75 credits for thesis research with effect from 2022-23.

##### Semester wise Distribution of courses

Sl. No.	Course work	Credits
1	Major courses	12
2	Minor courses	06
3	Supporting courses	05
4	Seminar	02
6	Thesis research / idea	75
Total Credits		100

## **Vision**

- To grow into a leading and reputed centre in the integration of teaching and learning in Agricultural Microbiology through bioinoculants, organic farming single cell protein and composting technology.
- To support coastal and delta agriculture with sound and sustainable development of Agricultural productivity by low-cost technology like adoption of Bio-inoculants.

## **Goals**

- To provide quality education to the students with updated and latest developments in the subject and develop completely qualified microbiologist to excel in the field of agriculture and Agro industries.
- To promote research and training on sustainable and ecofriendly approaches for increasing the agricultural productivity using Bio-fertilizers and to encourage the PG students with entrepreneurship skills.
- To create environmental awareness and provide practical knowledge on waste management for clean environment and establish a microbial culture collection bank.
- To establish the training center for students, govt. officials, private entrepreneurs' farmers and quality control laboratory for bio inoculants.

## **Objectives**

- To impart quality education in relation to changing the scenario in the field of microbiology and offer hands on training in biofertilizer production (Bacterial Biofertilizers, Azolla, Blue green algae and AM Fungi mass production and waste management).
- To undertake research on need based, location specific problems, through survey and developing of stress tolerant strains to combat biotic and abiotic stresses.
- To develop repository of microbial cultures and make availability of microbial cultures for research and commercial purposes.
- To analyze the quality of various bio-inoculants samples from various private bio inoculants producing companies.

### Strategic plan to achieve Vision and Goal

Goal	Objectives	Implementation plan	Performance Metrics/Time line	Outcome
To provide quality education to the students with updated and latest developments in the subject and develop completely qualified microbiologist to excel in the field of agriculture and Agro industries.	To impart quality education in relation to changing the scenario in the field of microbiology.	Periodical upgradation of course content covering both biocontrol and practical informations by getting inputs from stake holders and referring the syllabus of pioneer institutes in India.	Once in three years.	A periodically updated curriculum adds up to the domain knowledge of the students. Imparting sound knowledge and motivation created by Faculties, the higher number of students got Ph.D admissions in other institutes and have gone to abroad for higher studies. Increased number of our students got employment in private, public sectors and MNC's.
To Promote research and training on sustainable and eco friendly approaches for increasing the agricultural productivity using Bio-fertilizers and to develop the PG students with entrepreneurship skills	To undertake research on need based, location specific problems, through survey, and developing of stress tolerant strains to combat biotic and abiotic stresses.  To offer hands on training in biofertilizer production, (Bacterial Biofertilizers, Azolla, Blue green algae and AM Fungi mass production)	Motivating PG students to take part in conducting trials in farmers' field so as to assess the ground reality  To identify locations specific problem and find out the solution by systematic research approaches  Training the students in biofertilizers mass productions technologies	Every Year	Problems indentified through field trial conducted in farmers field in different locations  Developed solutions for the location specific problems  Publishing the research findings in reputed journals for the benefit of young microbiologists  Encouraging the students to present their research findings in national and international seminars/ conferences  Possibility of starting Biofertilizer production unit by the students

Goal	Objectives	Implementation plan	Performance Metrics/Timeline	Outcome
To create environmental awareness and provide practical knowledge on waste management for clean environment.	To impart knowledge on the various technologies of composting, vermicomposting and waste water treatment methods.	<p>Conducting students participatory environmental awareness campaigns.</p> <p>Training the students on various composting techniques like aerobic, anaerobic, rotary drum and vermicomposting technologies.</p> <p>Developing technologies for effective utilization waste water for SCP &amp; Biofuel production.</p>	Every year	<p>Creation of environmental awareness.</p> <p>Nutrient rich manures generation through waste composting.</p> <p>Generation of income by SCP production and clean environment by biofuel use.</p>
To establish a microbial culture collection bank.	<p>To develop a repository of microbial cultures</p> <p>To make availability of microbial cultures for research and commercial purpose.</p>	Collection and maintenance of microbial cultures.	All round the year.	<p>Deposits of variety of microbial cultures</p> <p>Income generation by mother culture sales</p>
Establishment of Quality control laboratory for bioinoculants.	To analyse the quality of various bioinoculants samples from various private bioinoculants producing companies.	Periodic collection of the sample from needy person	All round the year.	<p>Analysis of the samples in the department</p> <p>Income generation by sample analyses fee.</p>

## Accomplishments

The Division of Microbiology was started by the eminent world renowned Microbiologist Dr.G.Rangaswamy for the First time in India, **Dr.G.Rangasamy**, was trained under the able guidance of **Nobel Laureate, Dr.S.A.Waksman**. Then the Division of Microbiology was nourished by several dedicated and enthusiastic microbiologists such as **Dr.A.Mahadevan** (Eminent Scientist), **Dr.N.N.Prasad (First person to introduce Lignite as carrier material for bioinoculant production in India)** and alternate feed stocks for biogas production), Dr.M.Deiveekasundaram, Dr.S.M.Muthukaruppan, Dr.N.Ramanathan, Dr.P.Tholkappian, Dr.D.Stella and Dr. V. Muralikrishnan who is currently guiding the Department as the Head.

The alumni adoring various higher positions as Vice chancellor of TNAU Prof. Dr.S. Kannaiyan and Prof.Dr.K.Ramasamy, as registrar of TNAU Dr.P.Santhanakrishnan, and Dr.R.Tamilvendan. **(At present)**. Prof. Dr.S.Kannaiyan also occupied the top position as the Chairman, National Bio Diversity Authority of India (NBA). Some of other alumni also occupied key positions like Director of IIFPT, Thanjavur (Dr.K.Singaravadeivel), The Director of Rubber research institute (Dr.R.Kothandaraman), Deans of various Agriculture colleges affiliated to TNAU (Dr.S.Antony Raj, Dr.G.Prasad, Dr.N.O.Gopal, Dr. S.Pandia rajan) and Professor and Heads of Department of Microbiology, TNAU, (Dr.D.Purushothaman, Dr.K.Kanhasamy Dr.S.P.Sundaram, Dr.P.Marimuthu, Dr.H.Gopal and Dr. K. Suresh kumar) and Dr. K.Kumar held a position as Director in natural resource management, Dr. J. Prabhakaran as Director, CPMB, TNAU, Mr. R.Selvam as Vice president in Malaysia Biotech corporation.

Our Department is first in India to organize **three Summer Institute courses in Microbiology during 1964, 1965 and 1974 sponsored by UGC & ICAR**. The Department of Agricultural Microbiology had been selected as one of the centers among 11 in India, under **All India coordinated Research project (AICRP) on Biological Nitrogen Fixation from 1987 to 2000**. The Department has conducted **two Annual workshops of All India Coordinated Research Project (AICRP) on Biological Nitrogen Fixation during 1984 & 1990**. **The Department has conducted the 30<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) during January 9-11, 1990**. Department has conducted training for Agricultural Officers, Assistant Agricultural Officers and Farmers under Mission Mode Project funded by DBT during the year 1990- 1992. The Department has also organized Southern Regional Conference on Microbial Bio-inoculants on 21-22 March 2002 and three other National Conferences in the year 2006, 2013 and 2014. National conference on Novel microbial technologies for sustainable agriculture and allied industries funded by NLC India was held during 2019. During the pandemic period (2020 & 2021) our department organized **two workshops and six webinars**.

The Department was instrumental to start M.Sc., (Integrated) Five Years course in Microbiology during 2002. Later in 2007 and 2009 M.Phil, Ph.D. and M.Sc. Microbiology (two Years (CBCS) courses were started by us on behalf of Faculty of Science.

In the Department of Microbiology more than **100 Ph.Ds** were awarded and to

document the achievement, a **compendium of Ph.D. was released** on the occasion of the National seminar on **Frontiers in Applied Microbiology** held on **14<sup>th</sup> Feb.2014**. Several International and National seminars were also conducted in the Department. Many numbers of special invited Lectures were organized in the banner of Microbiological Association.

The Department's research activities could be realized through the list of international and national collaborators such as **PL480 IV & V (USDA), DBT, UGC, DST, DNES, MNES, NLC, TANSCHÉ and TNSTC**.

The faculties are more expertise in various fields such as **bio inoculants development and production, solid and liquid waste management, food Microbiology, fermentation processes and biodegradation of poly-ethylene**. Recently our **faculties received four patents for polyethylene bio degradation and Plant Mediated Nano particle Coated Fabrics**. Specific cultures isolated and characterized in the department are being deposited in NCBI (National Centre for Biotechnology Information). In addition to the above our **faculties are actively participating in university administrative works**.

There are **Six Endowments** *Viz.*, Dr.G.Rangasamy Endowment, Vallalar Endowment, Srilochini Varadarajulu Endowment, Shri. M.P.Damodharan Endowment, Ramaswamy padayatchiar Endowment and Dr.N.N.Prasad Endowment, **were constituted for the first rank holder in Postgraduate Degree Examinations**. The Department has also motivated the students and **handled special classes** to take up national level competitive examinations *viz.*, National Eligibility Test (**NET**) and Agricultural Research Scientist (**ARS**) Exam.

The faculties also visited various countries (USA, Singapore, Srilanka, Thailand, Vietnam, Malaysia, Egypt, Indonesia, Philippines, Mauritius, Dubai and Hong Kong) and attended many conferences and workshops. They were also actively involved in professional development activities by becoming members in various professional bodies. Faculty members have qualified National Eligibility Test conducted by the Agricultural Scientists Recruitment board of the ICAR. They also continuously do update their subject of specialization by attending orientation, refresher, Seminar, Conference, training and workshops conducted by UGC, ICAR, DBT, DST etc.,

At present, the Department focuses on the various thrust areas of Biological Nitrogen Fixation, Integrated Nutrient Management, formulation of **Bio-inoculants**, composting technologies, Food preservation, SCP production, Biosurfactants and Biopolymers.

Category	Up to 2016	Period (2017-22)
Number of Publications (Journals)	520	122
Number of Publications (Seminars/Conferences/Workshop/Symposium)	220	45
Number of Books & Book chapters published	59	65
Number of Projects obtained	62	15
Grant mobilization ( <i>Lakh Rupees</i> )	355.17	92.00
Number of Ph.D. Thesis Produced	148	3
Number of PG Thesis produced	341	75
Number of Seminars/ Workshops/ Conference/ Symposium Organized	12	9
Number of Awards Received by the faculties	20	33
Professional Visits to the Foreign Countries by the faculties	25	5

### Salient research achievements of the Department

1. Lignite was developed as a carrier material for the Biofertilizer production, as first report in India.
2. An affordable biocontrol agent *Methylobacterium* against rice blast has been identified and developed as a biofloc that augmented the survival of *Methylobacterium* in rice rhizosphere.
3. An innovative technology was developed for the microbial conversion of water hyacinth to biocompost using bioinoculants Viz., *Cellulomonas sp.* *Penicillium sp.* *Trichoderma sp.*
4. PGPR and AM fungi consortium for medicinal plants was developed.
5. A new formulation of *Azospirillum* bioinoculant was developed to increase the shelf life up to 12 months.
6. Alternate low cost carrier material for *Rhizobium* and *Azospirillum* bioinoculant had been developed using Biochar.
7. Strategies for enhancing biosurfactant production by *Serratia rubidaea* using agro industrial waste have been evolved.
8. Deposited lipopeptide biosurfactant producing *Bacillus cereus* strain SNAU01 used as a biocontrol agent against certain root pathogens.
9. Deposited *Pseudomonas aeruginosa* strain PBS29-RHL001 rhamnosyl transferase gene, partial cds. Accession number: MG956726. (743 bases) (Protein id: AWD 31663.1 residues 1 to 211), using this biosurfactant, nano particles of less than 60nm size up to six months, was produced.
10. For the first time in India, Nano emulsion of olive and sunflower oil was found have the antibacterial activity against human pathogen *E-coli*.
11. A significant Biofuel research finding was achieved in the production of bio hydrogen from waste water to be used as a renewable energy source.
12. Significant research has been made on the biodiesel production from microalgae *Chlorella variabilis*.

13. Notable research on agrowaste management for Bioethanol and vinegar production from cashew apple by using *Zymomonas mobilis* was done.
14. An innovative technique for mass multiplication of *Spirulina platensis* to be used as SCP using rice mill effluent has been developed.
15. Growth optimization of *Wauter siaeutropha* was achieved for higher production of PHB to be used as biodegradable plastic.

#### Patents Awarded to our department

1. Low-Density Polyethylene (LDPE) Degradation Process **Dr. R.Parthasarathi**, Dr.S.Nalini, **Dr.R.Elango**, **Dr.P.Sivasakthivelan**, **Dr.B.Karthikeyan**, Dr.T.Selkvamuthukumar and Dr.K.Arivukkarasu granted patents from Commissioner of Patents, Australian Government (IP Australia) **Patent No. 2021100276** ;Biological Sciences; Completed; Filed 2021-01-16; Published **2021-03-31**.
2. Ready to use biosurfactant and preparation method there of Dr. P. Poonguzhali. Dr.S.Rajan. **Dr.R.Parthasarathi**. Dr.R.Srinivasan. Dr.AR.Kannappan Annamalai University; Indian **Patent No. 202141029356**; Biological Sciences; Filed 2021-06-30; **Published 2021-07-09**.
3. Plant Mediated Nano particle Coated Fabrics (Nano fabrics) with Antimicrobial Property and Wound Heal by **Dr. K. Sivakumar** and **Dr. N. Pandeewari** Indian **Patent No.202041056850**; Biological Sciences; Filed **2020-12-20**; **Published** dated **2021-01-08**.
4. System for nanomerization of milk fat globules. Dr. Manoharan Melvin Joe, Dr. Abitha Benson, **Dr. Rengasamy Parthasarathi**, **Dr. RasavelElango**, Dr.GanapathySenthilkumar, Dr.Subramanian Bragadeeswaran, Dr. M. Senthilkumar, Dr. Balakrishnan Karthikeyan, **Dr. J. Sriman Narayanan**, **Dr. P. Sivasakthivelan**, Dr.R. Anandham, German patent **No. 20202210051**, Pubilshed dated **03.02.2022**, German.

#### 6.4.2 Faculty Strength

Presently the Department's teaching, research and extension mandates are well taken care of with twenty four faculties who specialized in Bioinoculant technology, Vermi Technology, Fungal Bioinoculant, Bio surfactant, Liquid Biofertilizer, Organic waste Management and Food Microbiology.

Sl. No.	Post	Sanctioned	Filled	Vacant	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	5	5	0	-
2	Associate Professor*	9	9	0	1
3	Assistant Professor*	10	10	0	5

\* Assigned responsibilities for multiple programmes

**Faculties from other department handling our department courses**

<b>Sl. No.</b>	<b>Cadre</b>	<b>Other departments</b>	<b>Faculty in place (As on August 2022)</b>
1	Professor*	-	-
2	Associate Professor*	1. Statistics	1
3	Assistant Professor*	1. Computer science 2. Plant Pathology	1 1
<b>Total</b>			<b>3</b>

**CREDENTIALS OF THE FACULTY**

Sl.No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total number of publications	Total Number of Publications (2017 to 2021)
				PG	Ph.D.		
1	Dr.V.Muralikrishnan Professor and Head	28	Microbial inoculant Consortium for sugarcane, biofuel production.	18	7	12	-
2	Dr.D.Stella Professor	28	Stress tolerant inoculant development	17	7	40	-
3	Dr.P.K.Sivakumaar Professor	26	Plant Growth Promoting Rhizobacteria Induced Systemic Resistance	15	07	11	-
4	Dr.S.Kalaiarasu Professor	26	Bioremediation of xenobiotics.	16	08	42	7
5	Dr.D.Reetha, Professor	22	New formulations and shelf life improvement of Biofertilizer	16	08	30	4
6	Dr.R.Elango, Associate Professor	21	Composting Techniques	16	06	31	7
7	Dr.D.Kanchana , Associate Professor	21	Food Preservation Techniques	19	04	35	5
8	Dr.M.Jayanthi, Associate Professor	21	Bioinoculant AM fungi	17	04	19	-
9	Dr.G.Usharani , Associate Professor	21	Plant Growth Promoting Rhizobacteria - Biocontrol	7	06	45	-
10	Dr.B.Karthikeyan, Associate Professor	21	Microbial interactions- medicinal plant	15	04	35	3
11	Dr.K.Muthuselvam Associate Professor	20	Vermi biotechnology	15	04	11	-
12	Dr.J.Sriman Narayanan, Associate Professor	20	Bio ethanol and Enzymology	10	04	17	4

13	Dr.V.Prabudoss Associate Professor	19	<i>Glucano acetobacter-</i> Sugarcane	16	03	27	4
14	Dr.J.Divakaran, Associate Professor	19	Management of municipal solid waste	05	01	12	-
15	Dr.S.Mahalakshmi, Asst. Professor	18	Plant Growth Promoting Rhizobacteria - formulation	15	02	17	4
16	Dr.R.Parthasarathi , Asst. Professor	16	Biosurfactants and nanoscience	13	04	33	10
17	Dr.S.Bharathiraja , Asst. Professor	16	AM fungal Symbiosis- Floriculture	13	01	10	4
18	Dr.S.Dinakar Asst. Professor	16	Bio flocculation studies	06	02	15	6
19	Dr.N.Pandeeswari Asst. Professor	16	Halophiles in coastal agriculture.	03	-	25	9
20	Dr.M.Vijayapriya, Asst. Professor	16	Silicate Solubilizing bacteria	01	-	30	7
21	Dr.G.Kumaresan Asst. Professor	16	Single cell protein Technology	04	-	33	12
22	Mrs.J.Jayachitra, Asst. Professor	16	Human Probiotics	03	-	25	8
23	Mr.K.Sivakumar Asst. Professor	15	AM fungal Symbiosis- Horticulture	04	-	34	12
24	Dr.P.Sivasakthivelan Asst. Professor	14	Agriculturally Beneficial Microbial consortium development	04	-	60	16

**Awards/Recognitions/Abroad visits by Faculty**

Sl.No.	Name of the Faculty	Awards/Recognitions	Countries visited	Purpose of the visit
1	Dr.V.Muralikrishnan Professor	Akshaya Vignan Mitra Award	-	-
2	Dr. P.Tholkappian Former Professor&head	-	Kuala Lumpur, Malaysia	International conference
3	Dr.D.Stella Professor	Best Motivator National Award	-	-
4	Dr.S.Kalaiarasu Professor	Award for excellence Outstanding biotechnologist award Best krishishak Award	-	-
5	Dr.R.Elango, Professor	-	University of Ulster, UK - 2022	For signing research MoU
6	Dr.D.Kanchana, Associate Professor	Women Researcher Award Dr. Radha Krishnan Best Teacher State Award	-	-
7	Dr.G.Usharani, Associate Professor	Excellence Service Award Indo Asian Distinguished Women Microbiologist Award	-	-
8	Dr.B.Karthikeyan, Associate Professor	Outstanding Scientist	-	-
9	Dr.V.Prabudoss Associate Professor	Best Educational list National Award Dr. B. R. Ambedkar National Award Dr. A. P. J. Abdul Kalam National Award	-	-
10	Dr.S.Mahalakshmi, Asst. Professor	Excellence in Research Award	-	-

11	Dr.R.Parthasarathi , Asst. Professor	PEARL- Foundation Excellent Researcher Award National education excellence achievers award Best book contribution award	Kuala Lumpur, Malaysia  University of Ulster, UK - 2022	International conference  For signing research MoU
12	Dr.S.Bharathiraja , Asst. Professor	Excellence In Teaching Award	-	-
13	Dr.S.Dinakar Asst. Professor	Outstanding Microbiologist Award Young Scientist Award	-	-
14	Dr.N.Pandeeswari Asst. Professor	Excellence In Research Award Excellent Researcher in Biological Nitrogen Fixation - Salt Tolerant Rhizobium	-	-
15	Dr.M.Vijayapriya, Asst. Professor	Out Standing Women Scientist Award Dr. A. P. J. Abdul Kalam National Award	-	-
16	Dr.G.Kumaresan Asst. Professor	Outstanding Microbiologist Award Dr. A. P. J. Abdul Kalam Award for Teaching Excellence 2020 Excellence in Teaching Award	-	-
17	Mrs.J.Jayachitra, Asst. Professor	Dr. A. P. J. Abdul Kalam Award for Teaching Excellence Best Researcher in Agricultural Microbiology	-	-
18	Mr.K.Sivakumar Asst. Professor	Young scientist award	-	-
19	Dr.P.Sivasakthivelan Asst. Professor	Young Scientist Award - 2019 Best Young Scientist Award 2020 Best Technical Consultant Award 2020 Award of Appreciation- 2020 Best Scientist Award - 2020	Kuala Lumpur, Malaysia	International conference

		Teacher Innovation Award Nation Builder Award 2021 Young scientist award - 2021 National education excellence achiever award-2022 International research excellence award-2022 Best oral presentation award-2022		
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**List of funded Projects (2017-2022)**

Sl.No.	Title of the project	Name of Principal investigator & Co Principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
1	Bio efficacy testing of Bacillus subtilis based bio fungicide against late blight in Tomato	Dr.R.Parthasarathi & Dr. P.Tholkappian	2016-2017	Novozymes South Asia Pvt. Ltd., Bangalore.	2.60
2	Bioefficacy testing of soil and foliar application products on Chilli	Dr.R.Parthasarathi & Dr. P.Tholkappian	2017-2018	Novozymes South Asia Pvt. Ltd., Bangalore.	2.79
3	Bioefficacy testing of soil and foliar application products on Paddy	Dr.P.Tholkappian & Dr.R.Parthasarathi	2017-2018	Novozymes South Asia Pvt. Ltd., Bangalore.	2.79
4	Evaluation and performance of different coconut indigenous medicine and mixer on growth and yield parameter of coastal coconut plantation of Chidambaram	Dr.S.Dinakar & Dr.S.Bharathiraja	2018-2019	Cocom &Co., Thiruvaiyaru.	2.15
5	Evaluation of the bioefficacy of bio fungicide nutrient supplement and anti-transparent formulations in selected crops	Dr.R.Elango & Dr.R.Parthasarathi	2019-2020	M/s. Scientific fertilizer Company (P) Ltd.,	2.20

				Coimbatore.	
6	Evaluation of the bioefficacy of Chelated Multinutrients Mixture formulations and their effect on selected crops	Dr.R.Elango & Dr.R.Parthasarathi	2019-2020	M/s. BG Crop science and Technologies (P) Ltd.,Madurai.	2.66
7	Evaluation of the bioefficacy of Plant growth Promoting formulations and Micronutrients formulations and their effect on selected crops	Dr.R.Elango & Dr.R.Parthasarathi	2019 -2020	M/s. BG Crop science and Technologies (P) Ltd.,Madurai.	3.00
8	Microbial and enzymatic analysis in Cotton, Wheat & Chick Pea soil	Dr.K. Sivakumar	2019-2021	Eurofins Agrosience Services Pvt. Ltd.,	3.10
9	Microbial and enzymatic analysis in Soybean soil	Dr.K. Sivakumar	2019-2021	Eurofins Agrosience Services Pvt. Ltd.,	2.90
10	Development of novel chitinolytic consortium based bioformulations and its evaluation as a potential bio control agent against (Arachis hypogea. L)	Dr.P. Sivasakthivelan	2019-2021	TNSCST, Chennai	3.60
11	Biodegradation of low-Density polyethylene (LDPE) using Gut microbial consortium isolated from Indian meal worm (Tenebrio molitor) -an approaching feasible technology	Dr.R.Parthasarathi & Dr.P.Sivasakthivelan	2021-2024	TANSCHE, Chennai	48.56
12	Biodegradation of low density polyethylene (LDPE) using gut Bacterial formulation –A forthcoming commercial technology	Dr.R.Parthasarathi	2022-2024	RUSA, UGC	10.13
13	Bio-efficacy of LCO fortified Water Soluble Fertilizer to be applied through fertigation in tomato	Dr.R.Parthasarathi	2022-2023	Novoenzymes South Asia Pvt.Ltd.. Bangalore	2.83

14	Bio-efficacy of LCO fortified Mye in Paddy	Dr.R.Parthasarathi	2022-2023	Novoenzymes South Asia Pvt.Ltd.. Bangalore	1.10`
15	Bio-eflicacy of LCO fortified Mye n Tomato	Dr.R.Parthasarathi	2022-2023	Novoenzymes South Asia Pvt.Ltd.. Bangalore	1.59
<b>Total</b>					<b>92.00</b>

### 6.4.3 Technical and supporting staff

Nine Technical and supporting staff members in the Department are helping in academic, research and administrative activities.

Sl. No.	Sanctioned staff	Staff in place	Responsibilities
1	<b>Ministerial Staff</b> Special officer -1 Assistant -2	3	Establishment & administrative work, purchase & Budget, Data maintenance
2	<b>Technical Staff</b> Assistant programmer -1 Assistant Technical officer -1	2	Computer operation, Issue of chemicals and glassware, maintenance of library, store keeping
3	<b>Basic services</b> Maistry - 2 Helper - 2 Garden Superintendent - 2 P.H Menials - 1	7	Maintenance of Pot culture yard, Dispatch of letters and circulars, maintenance of Research field, green house. Maintenance of laboratories and make arrangements for practical class

### 6.4.4. Classrooms and Laboratories

The Department has well equipped class rooms and laboratories with wide range of instruments to provide comfortable in learning and research. Head room and office are well equipped with basic amenities such as Xeroxing, printing and computer facilities. Three separate laboratories for UG classes, one PG lab, two class rooms and separate store room for chemicals and glasswares are available the details are given below.



S.No	Facility	Number	Area (sq. ft)	Description & Equipments housed
1	Class Room	2	930 360	Conducting Theory classes
2	Laboratories	4	Lab-I-960 Lab II-262 Lab-III-630 Lab- IV-308 PG Lab- 360	A Laboratory with all basic instrumentation facilities 1. Autoclave, - 4 2. Hot air oven, - 6 3. BOD incubator, - 5 4. Electronic Balance, - 2 5. Distillation Unit, - 2 6. Light Microscope, - 6 7. Alcohol Unit, - 1 8. Hot plate, - 2 9. Laminar Flow chamber. - 9 10. Cooling centrifuge, - 1 11. phase contrast microscope, - 46 12. Fermentor with complete accessories. -1 13. Microwave oven - Nil
3	Instrumentation room	1	570	1. Spectrophotometer, - 1 2. HPLC, - 1 3. Gel documentation unit, - 3 4. Light microscopes, - 6 5. stereo zoom microscope, - 1 6. High resolution Microscope with image capturing system, - 1 7. ELISA Reader, - 1 8. Refrigerator, - 7 9. UV- Visible double beam, - 1 10. Flame photometer, - 2 11. PCR, - 1 12. Centrifuge, - 2 13. Nitrogen Analyser system, - 1 14. Vacuum Desiccators, - 1 15. Hot air oven, - 1 16. Autoclave, - 1 17. pH Meter, - 2 18. Mechanical Shaker - 1

S.No	Facility	Number	Area (sq. ft)	Description & Equipments housed
4	Library	1	360	The Department Library is provisioned with 924 text and reference books, 200PG and 60 Ph.D. thesis, more than 10 national and international journals with conference proceedings and volumes, project work reports, reprints of published research papers.
5	Chemical & Glassware room	1	360	All the chemicals, Glassware and rare chemicals required for the regular UG, PG & Ph.D. classes.
6	Pot culture yard	1	13080	Available for semi field research and potculture studies. One green house to carry out specific in-situ enclosure studies. The area is provided with round the clock irrigation facility and necessary labour
7	Biofertilizer production unit room	1	360	To carry out the Mass production of Bio-fertilizers by using 19 Fermenter.
8	Implements & Fertilizer Room	1	67	For maintenance of implements and fertilizer required for the pot culture yard for the students trial purpose
9	Bio waste disposable room	1	150	For the safe disposal of used media, microbial cultures and cotton swaps

#### 6.45 Conduct of Practical and Hands-on-Training

Theory classes are conducted in single batch and during practical classes the students are divided into four groups and imparted with hands on training on Isolation, Identification and characterization of various microorganisms, conducting various staining methods for identification, estimation of microbial population from various sources, mass multiplication of bioinoculants, vermin composting and handling of various instruments.

Staff student ratio was well maintained to deliver quality education. Periodical assessment was carried out by conducting Internal Assessment and class tests. Working models were made to make learning more creative. Outdoor classes were arranged for the sample collections and visits to various industries and institutions to update their knowledge.



#### 6.4.6 Super vision of students in Ph.D. programme

All the 24 faculties in the department are guiding Ph.D. scholars for their research work. For the past Five years Department of Microbiology successfully produced 3 Ph.D graduates from Agricultural Microbiology, during their research, each Ph.D. scholar shall have an advisory committee which is formed before end of the first semester to facilitate the student in carrying out the assigned the *sis* program. The advisory committee shall comprise of a chairman and two members, of which one member shall be from the major Discipline and another from any other Discipline in there related field of the *sis* research. The chairman of the advisory committee will guide throughout the program and he helps the student in the selection of major and minor courses and seminar topics. Continuous monitoring of the *sis* research and maintaining research monitoring register for each student. Weekly once the students' progresses reviewed by the chairman. The Professor and Head of the Department is taking up the monthly review to assess the progress of research done by Ph.D. scholars.

At the end of each semester the evaluation of research is done by the advisory committee members by presenting their progress of research at the Department level where all the faculties and students attend and offer their remarks/ suggestions for improvement of their research.

Ph.D. scholars are given seminar topics on current stream of thoughts and advised to present the seminar before staffs and students.

Mid-semester examinations are conducted for each subject as per the scheme drawn by the Head of the Department/ Ph.D. coordinator and evaluated. The evaluated answer scripts are shown to the students.

Those students who fail to appear for the mid-semester examinations due to genuine / official reasons are permitted to take up missing examination of the particular course.

Final practical examinations are conducted separately towards the end of each semester by adopting a separate schedule proposed by the Head of the Department and approved by the Controller of Examinations. Two examiners (Internal and External) appointed by the University will conduct the practical examination and evaluate theory answer scripts. Re - Valuation is also allowed for the needy students. Research thesis will be sent to Indian and foreign examiner for evaluation, based on the report a public viva voce will be conducted.

S.No	Name of Faculty/ Scientist	Name of the Students Guided	Year of Completed	Title of thesis
1	Dr.R. Elango	K. Sathyaa	2017	Vermitechnology based bioprocessing of agriculture wastes and testing the efficiency of various vermi based formulation in tomato
2	Dr.V. Muralikrishnan	S. Anbuselvan	2017	Studies on rhizosphere bacteria of <i>Coleus forskohlii</i> and their significance on concentration and antimicrobial property of Forskoin
3	Dr.S.Kalaiyarasu	N.Pandeeswari	2018	Studies on the development and use of salt tolerant rhizobia for the enhancement of groundnut <i>rhizobium</i> symbiosis grown under tsunami affected coastal soils of Cuddalore district of Tamilnadu
4	Dr.S.Kalaiarasu	P.Manikandan.	Ongoing	Studies on the biotechnological approach for the development of efficient strains of PGPR Cells for the enhanced defensive mechanism of blast disease of Rice in upland rice ecosystem
5	Dr. R. Elango	U. Prakash	Ongoing	Microbial management and value addition of coirpith wastes.
6	Dr. B. Karthikeyan	N. Meena	Ongoing	Role of different fertilizer management practices on mulberry leaf yield and quality
7	Dr. R. Elango	U. Prakash	Ongoing	Microbial management and value addition of coirpith wastes.
8	Dr. R. Parthasarathi	A. Prithiviraj	Ongoing	Production and characterization of Biosurfactants produced by bacteria isolated from mangrove ecosystem of Tamilnadu and its applications as a biocontrol agent against certain selected pests and diseases
9	Dr. D. Kanchana	S. Pradeep	Ongoing	Investigation on the prevalence and developing new strategies to reduce the microbial spoilage in fish and fish products.

10	Dr. P. Sivasakthivelan	A. Arunachalam	Ongoing	Novel bioformulation of agriculturally beneficial endophytic bacterial consortium and its influence on the plant growth promoting activity of Groundnut ( <i>Arachis hypogea</i> L.)
11	Dr. P. Sivasakthivelan	S. Gomathi	Ongoing	Exploring the plant growth promoting potential of native microbes and development of region-specific consortium based bioinoculants suitable for rice crop under Carvery Delta zone of Tamil Nadu.
12	Dr. J. Jayachitra	R. Vaitheeswaran	Ongoing	Development of Biosorption based technology for the removal of certain heavy metals by microbial and plant derived biomass.
13	Dr. S. Mahalakshmi	J. Jaipriyanka	Ongoing	Studies on developing seaweed extracts as liquid fertilizers and PGPR for augmenting the growth and yield of Bhendi
14	Dr. S. Mahalakshmi	K. Sowmiya	Ongoing	Technology development for sustainable energy production Using microalgae as a promising factor for Biodiesel.
15	Dr.G. Kumaresan	Rajan L Fradlin Singh.	Ongoing	Recent advancements in bioinoculant formulation technologies and their efficacy studies on Brinjal ( <i>Solanum melongena</i> L)
16	Dr.G. Kumaresan	C. Rajesh	Ongoing	Development of liquid formulations of microbial consortium and their effect on the growth and yield of multiplier onion ( <i>Allium cepa</i> L. var. <i>aggregatum</i> G. Donn.).
17	Dr.S.Bharathiraja	M. Ranjitha	Ongoing	Studies on the influence of AM fungi and different bioinoculant regimes growth and yield of Aloe vera (Aloe vera (L.) Burm.F.
18	Dr. M. Vijayapriya	P. Sangeetha	Ongoing	Characterisation of symbiotic Bacteria Isolated from Entomopathogenic Nematode.

19	Dr.D.Reetha	S.Santhana Bharathi	Ongoing	Development of novel Trichoderma - based bio filmed biofertilizer and Evaluation of its efficacy on the growth and yield of sesame ( <i>Sesamum indicum</i> L.)
20	K. Sivakumar	B. SuriyaSabarinath	Ongoing	Studies on the interaction of phosphate solubilization bacteria and AM fungi on the growth and yield of tomato.
21	K. Sivakumar	C. Vignesh	Ongoing	Effect of AM Fungi and Vermicompost on the growth and yield attributes of cucumber ( <i>Cucumis sativus</i> L.) under drought tolerant condition

#### 6.4.7 Feedback of stakeholders (Students, Farmers, Companies, Parents, etc.,)

An effective Mentor – Mentee system is functioning at Department level to get feedback from the students regarding curricular and co-curricular activities. The course teachers are getting feedback regularly in the prescribed format from each student regarding lecture delivery, hands on training *etc.* at the end of the semester. The feedback obtained is discussed in the Department staff meeting for necessary improvement in curricula, hands-on training and research faculties. In addition, feedback from nearby farming communities is regularly obtained by field visits.

Based on the feedback received from the students the following measures have been taken:

**1. Extension of lab timings:** The timings for the lab hours have been fixed from 06.30 am to 08.30 pm.

**2. Conduct of webinars/ spl. Lectures:** Based on their request Periodical webinars have been organized for the Scholars to update their knowledge in the domain area of research.

During the Extension activities, the staff in-charge are getting direct feedback from the farmers by conducting meeting in the villages. Parents are regularly informed about the progress of the students by the Mentor and in turn the feedback is also received from them. Company persons are regularly visiting us for discussing the progress of sponsored projects and in turn explain about the status of agro industries and farmers problems.

Department alumni coordinator periodically contacts the distinguished alumni and updates the curriculum then and there.



6.4.8 **Students intake and attrition in the programme for the last five years**

Name of the programme	Actual students admitted in the last five years					Attrition (%)				
	2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
Ph.D. In (Agrl) Microbiology	3	5	5	1	5	0	0	0	0	0

**Employment Percentage of PG students**

Academic Year	Number of students graduated	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	2	-	-	-	1	-		50
2018-19	1		1				1	100

**Employment Details of Ph.D. students**

Academic Year	Name of students	Name of the agency	Designation
2017-18	1. S. Anbuselvan	Sri Vijayalakshmi fertilizers and chemicals	Microbiologist
2018-19	1. N.Pandeeswari	Annamalai University	Asst. Professor

6.4.9 **ICT application in curricular delivery**

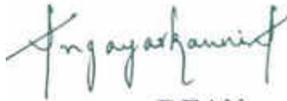
ICT tools are used for handling both theory and practical classes. Staff members are in a habit of handling classes in OHP and Power point Presentation. Audio visual aids are used for delivering the lectures. Students were also trained in ICT applications through their assignment presentation for each course and also for their credit seminar. Moreover, they have been trained to access online library, e - journals and open access web resources pertaining to their studies.

PPTs are designed and updated regularly to teach the syllabus content in a way to make the student understand better. A web browsing enclave linked computers have access to the UGC inflienet portal "SodhSindhu" and "Sodhganga" for literature surveys. Also, some of the lab houses separate broadband connection and Wi-Fi facility to cater to

the needs of the students. Number of computers for Staff & student use is 12 and 8 are with networking facility.

- 6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.
- 6.4.11. Since the accreditation of Programmes is related to the All-India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.
- 6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **A. ANGAYARKANNI** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with date and seal.



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
Ph.D. Entomology**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)

**FACULTY OF AGRICULTURE**



# Department of Entomology

## Self study Report

*for the Programme*

**Ph.D. Entomology**



ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

#### 6.4. Self Study Report for the Programme

Name of the programme: **Ph.D. Entomology**

Offered by: **Department of Entomology**

##### 6.4.1 Brief History of the Programme

The Division of Entomology came into existence primarily to cater the instructional needs of B.Sc. (Ag.) degree programme in the year 1958. Even before attaining Department status, the Division offered Ph.D. Programme in Entomology.

Historical Itinerary	Year of Commencement/Period
Division of Entomology	1958
Ph.D. Programme in Entomology	1971
Post graduate Programme in Plant Protection	1972 -1984
Department Status	1984
Post graduate Programme in Entomology	1984 Onwards

Currently, the Ph.D. in Entomology programme is offered with 100 credits distributed in six semesters. Periodical revision of curricula is being done and the latest was carried out in the year 2022 as per the recommendations of the **Fifth Deans' Committee and BSMA Committee** reports and this revision is followed from the academic year 2022 -2023.

##### SEMESTER WISE DISTRIBUTION OF CREDIT

Semester	Major Course	Minor Course	Supporting Course	Seminar	Research	Total credit	Non credit Compulsory course
I	6	4	2	1	2	15	-
II	6	2	3	1	10	22	-
III	-	-	-	-	16	16	Research and Public Ethics
IV	-	-	-	-	16	16	MOOC
V	-	-	-	-	16	16	-
VI	-	-	-	-	15	15	-
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>	<b>100</b>	<b>-</b>

##### Distribution Pattern of Courses and Credit

Course code	Course Title	Credit hour (Theory + Practical)
	<b>Major Courses (Any Four out of five major courses)</b>	
ENT 601	Insect Phylogeny and Systematics	3 (1+2)
ENT 602	Insect Physiology and Nutrition	3 (2+1)
ENT 603	Insect Ecology and Diversity	3 (2+1)
ENT 604	Bio-inputs for Pest Management	3 (2+1)
ENT 605	Insect Toxicology and Residues	3 (2+1)

<b>Minor Course (Any Three out of five minor courses)</b>		
ENT 606	Insect Behaviour	2 (1+1)
ENT 607	Plant Resistance to Insects	2 (1+1)
ENT 608	Acarology	2 (1+1)
ENT 609	Molecular Entomology	2 (1+1)
ENT 610	Integrated Pest Management	2 (2+0)
<b>Supporting Courses</b>		
COM 601	Advances in Computing Applications	2 (1+1)
STA 601	Advances in Designs of Experiments	3 (2+1)
<b>Seminar</b>		
ENT 691	Doctoral Seminar - I	1 (0+1)
ENT 692	Doctoral Seminar - II	1 (0+1)
<b>Research</b>		
ENT 699	Doctoral Research	75 (0+75)
<b>Non credit compulsory courses</b>		
NGC 611	Research and Public Ethics- <b>Contact hours: 2</b>	-
NGC 612	<b>MOOC - Contact hours: 2</b>	-

**For the senior batch,** programme is offered with 75 credits distributed in six semesters as per the recommendations of ICAR, which includes 15 credits for major courses, 08 credits for minor courses, 05 credits for supporting courses, 02 credit for seminar and 45 credits for thesis research. In addition, non-credit compulsory courses are also included to improve the research acumen, skill and employability of the students to meet the local and global needs.

### **Vision**

- To achieve the status of “Centre for Excellence” in academics & research and to enter the global arena by attracting international youth for post graduate, doctoral and post doctoral research
- To create an advanced centre for “Extension Entomology” to cater to the needs of coastal and delta agriculture with sustainable pest management techniques and to impart hands-on trainings to farmers and technocrats especially in pest management, coastal Sericulture and Apiculture

### **Goals**

- Imparting quality education with instructional capacity and inculcating technical expertise with a wide range of learning experiences and produce knowledge centric talented entomologists. Ensuring effective research by perseverance, motivation and resilience
- Developing sustainable crop protection techniques through intensive and extensive research by considering effective integration of cultural, ethnic, social and economic issues to address formidable challenges
- Structuring training programmes to popularize viable crop protection technologies at all levels and feasible commercial Entomology among resource poor farmers to enhance their income

## Objectives

- To impart student centric advanced education in relation to changing scenario in the field of Entomology
- To inculcate instructional capacity, problem-solving skills and entrepreneurship among students
- To guide graduates and post graduates in identifying professional and research career opportunities
- To undertake research on need based and location specific problems in pest management by adopting case-study, survey, correlation observation, quasi-experiment and full-fledged field experiments
- To offer hands on trainings in integrated pest management, apiculture and sericulture techniques to the farmers and extension workers
- To extend technical expertise and assistance to pesticide establishments in testing newer insecticidal compounds and resistance monitoring

### Strategic plan to achieve Vision and Goal

Goals	Objectives	Implementation plan	Performance Metrics/ Timeline	Outcomes
<p>Imparting quality education with instructional capacity and inculcating technical expertise with a wide range of learning experiences and produce knowledge centric talented Entomologist.</p> <p>Ensure effective research by perseverance, motivation and resilience.</p>	To impart student centric advanced education in relation to changing scenario in the field of Entomology.	Periodical upgradation of course content as per the ICAR guidelines and by getting inputs from stake holders.	Once in three years	<ul style="list-style-type: none"> <li>• The periodically updated curriculum adds up to the domain knowledge of the students</li> <li>• Two international students (Fiji and Sudan) completed PG programme during 2013 and 2016 respectively</li> <li>• Higher number of students opted for PG, Ph.D. in our Department and to other Institutes because of sound knowledge &amp; interest infused by the Faculty</li> <li>• Increased ratio of absorption of our students in private sectors</li> <li>• Higher number of students clearing competitive/ entrance examinations and flourishing in various institutes</li> <li>• Considerable number of</li> </ul>
	To inculcate instructional capacity, problem-solving skills and entrepreneurship among students.	Definitive implementation of class seminars & credit seminars on latest topics to impart presentation and interactive ability among students.	Every semester	
		Our class room teaching starts with group discussions rather than simple lecture.		
		Making available standard Indian and Foreign text books and e- journals in the Department library, Giving assignments to the students on advanced frontier areas.		
	Involving the students in organizing workshops and farmers' demonstrations			

Goals	Objectives	Implementation plan	Performance Metrics/ Timeline	Outcomes
	To guide post-graduates in identifying professional and research career opportunities	Organising periodical guest lecturers and on campus interviews for knowledge enlighten and prospective placements	Every semester	<p>students emerged as Entrepreneurs</p> <ul style="list-style-type: none"> <li>• For the past five years 31 UG students joined PG program in Entomology at various institutes including ICAR institutes because of the coaching classes conducted by the Department</li> </ul>
		Coaching classes are conducted to prepare the students for competitive/ entrance examinations		
		To impart hands on training on various techniques and instrumentation		
		Initiation of 'Annamalai Entomology Students Club'	Every month	
Developing sustainable crop protection techniques through intensive and extensive research by considering effective integration of cultural, ethnic, social and economic issues to address formidable challenges	To undertake research on need based and location specific problems in pest management by adopting case-study, survey, correlation observation, quasi-experiment and full-fledged field	Motivating PG students to take part in conducting trials in farmers' field so as to understand the ground reality.	Every semester	<ul style="list-style-type: none"> <li>• PG students and also the Faculty members conduct on-farm research to recommend remedies for practical problems.</li> <li>• With abundant fellowships available to students and scholars, the Department attracts best talents among students to do research. This serves the mandate of attracting young minds into research</li> </ul>
		Publishing the research findings in reputed journals for the benefit of young entomologists.		
		Encouraging the students to present their research findings in national and international seminars/conferences.		
		Proposing extramural funded projects through Government agencies like DST, DBT, UGC, ICAR		

Goals	Objectives	Implementation plan	Performance Metrics/ Timeline	Outcomes
	experiments.	Faculty is encouraged to present their research findings and innovative ideas in "In-house science forum" - The Entomology Society for Innovations		<ul style="list-style-type: none"> <li>Few workshops / conferences / symposia (International &amp; National) were conducted for the benefit of researchers and students</li> </ul>
Structuring training programmes to popularize viable crop protection technologies at all levels and feasible commercial Entomology among resource poor farmers to enhance their income	To offer hands on training in integrated pest management, apiculture and sericulture techniques to the farmers and extension workers.	Imparting hands on trainings on integrated pest management, mass production technology of bio control agents, Sericulture, apiculture, production of botanical formulations etc.	Every year	<ul style="list-style-type: none"> <li>The delta and coastal farmers and extension functionaries are well trained in pest management.</li> <li>For the benefit of Cauvery delta the farmers, a training programme on "Updating of crop pest management tactics in changing pest scenario" was organized.</li> </ul>
	To extend technical expertise to pesticide establishments in testing newer insecticidal compounds and resistance monitoring	Obtaining consultancy projects from pesticide establishments	Often	<ul style="list-style-type: none"> <li>With copious grants amounting to approximately 800 lakhs, the infrastructure facilities have been greatly enhanced besides extending fellowship to PG students and Ph.D. scholars.</li> </ul>

### 6.4.2 Faculty Strength

Presently the Department's teaching, research and extension mandates are well taken care of with nineteen staff members who specialize in Commercial Entomology, IPM, Host Plant Resistance, Parasitoid Taxonomy, Biological control, Phyto-insecticides, Storage Entomology, Acarology and Toxicology.

Sl. No.	Posts	Sanctioned	Filled (as on July 2022)	Vacant Position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	2	2	0	0
2	Associate Professor*	6	6	0	1
3	Assistant Professor*	11	11	0	2
	<b>Total</b>	<b>19</b>	<b>19</b>	<b>0</b>	<b>3</b>

\*Assigned responsibilities for multiple programmes

### Faculty deputed from other Departments to handle Common, supporting and Non-Gradual courses

Sl. No.	Posts	Sanctioned	Faculty in Place (as on July 2022)	Vacant Position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	1	1 (Statistics)	0	-
2	Associate Professor	-	-	0	-
3	Assistant Professor*	1	1 (Computer Science)	0	-
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>-</b>

\*Assigned responsibilities for multiple programmes

### Accomplishments

With the exuberant fore-vision of several dedicated entomologists, notably Dr.N.P.Kalyanam (**Trained in USA under co-operation technical mission programme**), Dr.M.Balasubramanian (**awarded Fulbright fellowship of USA to pursue Ph.D. programme in Rutgers University**; who also published a maiden article on Nematology in **Nature (London) during the year 1962**), Dr.M.Thirugnanam (Ph.D. in **Rutgers University, New Jersey, USA**), Dr.K.Natarajan, Dr.S.Chelliah (**Post doctoral research at IIRI**), Dr.P.Baskaran (Ph.D. in **IARI, Fulbright fellow for Post - doctoral research at University of California, USA**) and Dr.P.Narayanasamy, the Department has grown from its infancy to the present position. Dr.Rm.Nachiappan, Dr.R.Veeravel,

Dr.Y.Hariprasad, Dr.V.Selvanarayanan and Dr.S.Manickavasagam (**Ph.D. in IARI and Commonwealth fellow**) nurtured the Department with dedication and now the Department is under the stewardship of Dr.S.Arivudainambi, whose focussed ideas make the Department flourishing in all spheres.

Apart from the privilege of winning many accolades, the faculty also made several professional visits to various countries and attended many seminars, conferences and workshops to equip themselves to meet the current challenges in Entomology. They are also actively involved in professional development activities by publishing research papers and becoming members in various professional bodies. **The majority of the Staff in the Department qualified in the National Eligibility Test (NET) of ICAR.**

The Department's research calibre can accurately be judged by its **International and National collaborations**. Our collaborators include USDA-ARS, IRRI, FAO, ICAR, NBAIR, DRR, NCIPM, IINRG, Fly ash Mission, Technology Information & Assessment Council (TIFAC), DBT, DST, SERB, UGC, TNSCST, VCRC, Ministry of Coal, Ministry of Environment, Neyveli Lignite Corporation, Tamil Nadu State Department of Agriculture, Tamil Nadu State Pollution Control Board, National Sericulture Board, Aligarh Muslim University, Zoological Survey of India, Department of Forests, Pesticide Industries, NGOs *etc.*

Further the research environs of the Department got boosted up by **UGC-Non SAP& FIST sponsorships**. A digitized version of Indian Mymaridae, Chalcididae and Aphelinidae, made by the Department has been hosted in the ICAR -NBAIR website. **South Asia's first season long training in rice IPM organized by the Department in collaboration with FAO and Government of India was the point of the highest glory in the Department's extension arena.** The Department is supporting International and National research scholars and faculty by doing Identification services especially in the field of parasitic Hymenoptera. **The Department is a recognized centre under ICAR - NBAIR sponsored Net work project on Insect biosystematics (NPIB) from 2015-16 and also as one of the volunteer centres under ICAR sponsored AICRP on Rice through DRR, Hyderabad.**

Currently, the Department focuses on the thematic areas such as biological control, parasitoid and Lepidopteran taxonomy, host plant resistance, phyto-insecticides characterization and formulation, sericulture and apiculture.

The Department has a unique **Insect Museum**. The collection includes all insect orders known from India including the rare orders such as Diplura, Protura, Archaeognatha, Plecoptera, Embioptera, Phasmatodea, Megaloptera, Strepsiptera, Mecoptera and Trichoptera. There are around **50,000 insect specimens** preserved in the museum. The immature stages of insects are also exhibited as dry or liquid preservations.

The alumni adored and adoring various important positions such as International Agricultural Consultant for World Bank, Director of Research-TNAU, Director, Research and Development, Rhom & Hauss (USA), Principal Scientists in IARI, ICAR and NBAIR, Faculty in SAUs and as Head -Honchos of Agrochemical Industries.

Category	Total	Last five year period (2017-2022)
Number of Publications - Journal articles	692	276
Number of Publications –Seminars / Conferences / Workshops / Symposia	575	260
Number of Books & Book chapters	235	95
Number of Projects obtained	203	141
Grant mobilization (Lakh rupees)	1122.09	890.08
Number of Ph.Ds produced	33	17
Number of PGs produced	372	106
Number of Seminars / Conferences / Workshops / Symposia / Trainings Organized	52	34
Number of Seminars / Conferences / Workshops / Symposia / Trainings Attended	577	291
Number of Awards received by the Faculty	195	45
Number of Professional visits to abroad by the Faculty	27	8

### Salient Research Achievements of the Department

Research Area	Achievements	
Insecticide formulation	Flyash was developed as Pesticide and found to be suitable for carrier in synthetic and herbal insecticide formulations	
Myco-insecticide	South Asia's First Report	Fungal pathogen, <i>Pandora (Erynia) delphacis</i> Humber on BPH & GLH, <i>Zoophthora radicans</i> (Brefeld) on rice leaf folder.
	India's First Report	<i>Scopulariopsis</i> sp. from rice field
	Asia's First Report	<i>Pandora delphacis</i> Myco-insecticide 70% WP Development of artificial media for <i>Zoophthora radicans</i>
Parasitoid Taxonomy	Species described	66 new species of parasitoids have been described.
	Asia's First Report	<i>Cheiloneurus nigricornis</i> (Encyrtidae) was recorded as a hyperparasitoid of Dryinid
	India's First Report	<ul style="list-style-type: none"> <li>Family Mymaromatidae</li> <li>8 genera of Mymaridae</li> <li>1 genus of Encyrtidae</li> <li>15 parasitoid species</li> <li>Polyembryony in insect parasitoid {<i>Copidosoma floridanum</i> Ashmead (Encyrtidae: Chalcidoidea) with 1893 adult parasitoids emerging from single larva of <i>Helicoverpa armigera</i> (Hubner)}.</li> </ul>
		<ul style="list-style-type: none"> <li>Department has Reference collection of 15 families of Parasitoids and Type collections (Holotypes/Paratypes) of 66 specimens from</li> </ul>

Research Area	Achievements	
	the section Parasitic Hymenoptera	
	<ul style="list-style-type: none"> <li>• Checklist of Indian Mymaridae &amp; Aphelinidae hosted in ICAR, NBAIR website</li> </ul>	
Host plant resistance	<ul style="list-style-type: none"> <li>• Insect tolerant Tomato - Varushanadu Local backcrossed with PKM 1 for Fruit borer</li> <li>• Insect Resistant sesame (IVTS 2001-7) for webworm</li> </ul>	
Phyto-insecticide	<ul style="list-style-type: none"> <li>• Isolated and characterized Insecticidal principle Lactone glycoside from <i>Cleistanthus</i></li> <li>• Reported the insecticidal activity of <i>Rhizophora apiculata</i> and <i>Solanum viarum</i></li> <li>• Herbal coils prepared using <i>Lucas aspera</i> against adult mosquitoes</li> <li>• Deduced the mode of action of Lactone glycoside &amp; solasodine</li> <li>• Insecticidal activity of Red algal seaweed (<i>Liagoraceranoides</i>)</li> </ul>	
Traditional pest management	<ul style="list-style-type: none"> <li>• Documentation of 500 tribal pest control practices of Tamil Nadu</li> <li>• Discovered tribal rat trap</li> </ul>	
Storage Entomology	Development of a bio-fumigant tablet against stored pests	
Lepidoptera Taxonomy	49 genera and 64 species of Lepidoptera were recorded	
Myrmecology	India's First Report	EFN species on 62 plants
	Tamil Nadu's First Report	<i>Amblyopone</i> sp. and <i>Pachycondylahenryias</i> plant hosts of <i>Oecophylla smaragdina</i> & <i>Solenopsis geminata</i>



### Credentials of the Faculty

S.No.	Name & Designation	Total Service (Years as on 2022)	Field of Specialization	Total number of Students Guided		* Total number of Publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journal articles	*Others
1.	Dr.V.Selvanarayanan, Professor	29	Host Plant Resistance	22	10	178	8	20
2.	Dr.S.Manickavasagam, Professor (Retired on June 30, 2022)	29	Parasitoid Taxonomy	31	13	200	42	7
3.	Dr.S.Arivudainambi, Professor and Head & Director, IQAC	28	Phyto-insecticides& Insecticide Toxicology	23	13	147	34	19
4.	Dr.T.Selvamuthukumaran, Associate Professor & Deputy Director, IQAC	21	Phyto-insecticides	12	1	71	17	29
5.	Dr.C. Kathirvelu, Associate Professor	20	Storage Entomology	11	1	169	34	49
6.	Caption Dr.R. Kanagarajan, Associate Professor & Director, Security and Patrolling & warden	19	Parasitoid Taxonomy	11	3	83	19	17
7.	Dr.R. Ayyasamy, Associate Professor	17	Insecticide Toxicology	8	1	76	16	18
8.	Dr.R.Kannan, Associate Professor	21	Phyto-insecticides	13	1	109	24	39
9.	Dr.V.Sathyaseelan, Associate Professor	17	Acarology	9	Nil	32	10	17
10.	Dr.B.Anandaganesaraja,	20	Biological control	12	1	38	6	42

S.No.	Name & Designation	Total Service (Years as on 2022)	Field of Specialization	Total number of Students Guided		* Total number of Publications	Total number of Publications (2017 to 2022)	
				PG	Ph.D.		Journal articles	*Others
	Assistant Professor							
11.	Mrs.S.Pushpalatha, Assistant Professor	20	Apiculture	Nil	Nil	25	8	10
12.	Dr.Chand Asaf, Assistant Professor	18	Host Plant Resistance	9	1	128	24	50
13.	Dr.A.M.A. Amala Hyacinth, Assistant Professor	18	Apiculture	1	Nil	10	3	3
14.	Dr.M.Ramanan, Assistant Professor	18	Phyto-insecticides	3	Nil	19	8	7
15.	Dr.N. Muthukumaran, Assistant Professor	17	Host Plant Resistance	10	1	106	26	34
16.	Dr.T.Rani, Assistant Professor	16	IPM	4	1	9	2	2
17.	Dr.M.Senthilkumar, Assistant Professor	15	Myco-insecticides	6	Nil	57	30	10
18.	Dr.T.Nalini, Assistant Professor	15	Myrmecology	8	1	55	19	22
19.	Dr.M.Pazhanisamy, Assistant Professor	15	IPM	6	1	72	40	17
20.	Mr.A.Sivaraman, Assistant Professor	14	Host Plant Resistance	Nil	Nil	Nil	Nil	Nil

\*Includes books, book chapters, conference proceedings, abstracts, invited papers, lead papers, popular articles & radio talk

### Awards/ Recognitions/ Abroad Visits of the Faculty

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
Dr.V.Selvanarayanan, Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Research Paper Award</b>, 2006 - Annamalai University</li> <li>• <b>Best Teacher Award</b>, 2010 - Annamalai University</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Fellow of Plant Protection Association of India since 2010</li> <li>• Active member of the Group on Plant Resistance to Pests, Kansas, U.S.A. since 2012</li> </ul>	<ul style="list-style-type: none"> <li>• <b>China</b>, 2004 - Chinese Academy of Agricultural Sciences, International Plant Protection Congress.</li> <li>• <b>United States of America</b>, 2005 - Professional interaction and exposure visits, Huntington College, Fulton - Marshall, Coop. Farm Bureau, Rochester, Dept.of Entomology, Manchester College, North Manchester, University of Valparaiso, Indiana,Purdue University, West Lefayette,U.S.A.</li> <li>• <b>Belgium</b>, 2005- University of Ghent</li> <li>• <b>London</b>, 2005- Royal Botanical Gardens</li> <li>• <b>Kent</b>, 2005- Natural Resources Institute, University of Greenwich</li> </ul>
Dr.S.Manickavasagam, Professor ( <b>Retired on June 30, 2022</b> )	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Researcher Award</b>-2008-09 by Annamalai University</li> <li>• <b>SrilochaniVaradarajaluEndowment Incentive Award</b>- 2008-09 for international publication with impact factor by Annamalai University</li> <li>• <b>Professor T N Ananthakrishnan Award - 2014</b> for contribution in the field of Parasitoid Taxonomy and Biological Control</li> <li>• <b>Best Researcher award - 2017-18</b> by Annamalai University</li> <li>• <b>Rao Sahib Dr. T. V. Ramakrishna Ayyar memorial award 2021</b> for contribution in the field "Taxonomy</li> </ul>	<ul style="list-style-type: none"> <li>• Chinese Academy of Agricultural Sciences, Beijing, <b>China</b> from Nov.2003 to January 2004.</li> <li>• Visited the Dept. of Plant Protection of University Putra <b>Malaysia</b>, and Insect Systematics and Biocontrol lab of National University of Malaysia, Kuala Lumpur in January 2004.</li> <li>• Visited the Entomology laboratory of National University of <b>Singapore</b> and Genome Institute of Singapore during February 2004.</li> <li>• Visited Natural History Museum,</li> </ul>

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
	<p>of Parasitic Hymenoptera”</p> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Visiting Scientist, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing, Republic of China, Nov.2003 to January, 2004</li> <li>• Common Wealth Academic Staff Fellowship, 2007-2008 at Natural History Museum, London</li> <li>• Commonwealth Academic Staff Fellowship-2007 from 3<sup>rd</sup> Sep.2007 to 2<sup>nd</sup> March 2008 (At Natural History Museum, London, UK)</li> <li>• Fellow of the Royal Entomological Society (<b>FRES</b>) UK - since 2008</li> <li>• Fellow of The Entomological society of India (<b>FESI</b>) – since 2009</li> <li>• Fellow of the Plant Protection of Association of India (<b>FPPAI</b>) since 2010</li> <li>• Chair Person, Twenty Second Annual Congress, 2010 University of Peradeniya, Sri Lanka</li> <li>• Best Poster Award at National Conference held at Arunachal Pradesh, 2014</li> </ul>	<p><b>London, UK</b> as a Commonwealth Fellow for six months from Sep. 2007 to March 2008.</p> <ul style="list-style-type: none"> <li>• Visited Erice (Sicily) <b>Italy</b> to attend X European workshop on Insect parasitoids, Sep.17 – 21, 2007.</li> <li>• Visited University of Minnesota, <b>USA</b> to attend First International Entomophagous Insects Conference, July 27 – 31, 2009.</li> <li>• Visited Post Graduate Institute of Agriculture, University of Peradeniya, Kandy, <b>Sri Lanka</b>, to chair a technical session at Twenty Second Annual Congress, 25-26, November 2011.</li> <li>• Visited Canadian Natural Collections at Ottawa (28<sup>th</sup> to 31<sup>st</sup> May 2013: Attended third International Entomophagous Insects Conference, Quebec, <b>Canada</b> (2-6, June 2013): Visited University of Calgary, Insect Ecology lab, 10-30<sup>th</sup> June 2013).</li> <li>• Attended 5<sup>th</sup> International Entomophagous insects Conference held at Kyoto, <b>Japan</b>, 16-20 October 2017</li> </ul>
Dr.S.Arivudainambi, Professor and Head	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>SrilochaniVaradarajalu Endowment Incentive Award</b> (publication), 2010 by Annamalai University.</li> <li>• <b>Best Faculty Award</b>, 2014 by EET CRS Academic Brilliance rating Agency, New Delhi.</li> <li>• <b>Best Researcher Award</b> (grants), 2018 by Annamalai University</li> </ul>	<ul style="list-style-type: none"> <li>• Poland, 2006 - COMPAS meeting, Agricultural University, Krakow, Department of Agriculture, Lejask</li> <li>• Switzerland, 2006 - IUED Conference, Centre for Development Studies, Geneva</li> <li>• Nepal, 2018- DBT, BIRAC - meeting</li> </ul>

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
	<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Expert member, 2006 -2010 -ETC- COMPAS (Partners- Bolivia, Guatemala, Nicaragua, Peru, Colombia and Chile; Ghana, South Africa, Zimbabwe, Tanzania, Uganda, Togo, Benin; India, Sri Lanka, Netherlands and Switzerland).</li> </ul>	
Dr.T.Selvamuthukumar, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Researcher Award</b> (grants), 2021 by Annamalai University</li> </ul>	<ul style="list-style-type: none"> <li>• Hungary, 2018 - Annual meeting &amp; Chemical Ecology conference</li> </ul>
Dr. C. Kathirvelu, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Young Scientist Award</b> 2018- In-recognition of service to the field of Entomology by The Society of Tropical Agriculture, New Delhi</li> <li>• <b>Outstanding Entomologist Award</b> 2019 -In appreciation to the contribution to the field of Entomology by Madhumitha Foundation, Telangana State</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best group teacher - 2004 - 2005 &amp; 2005-2006 RAWE, competition conducted by Department of Agricultural Extension, Annamalai University.</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka, 2011- International Conference at PGIA, Peradiniya, Lanka, 2011, November 17 &amp; 18</li> </ul>
Dr.R. Kanagarajan, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Young scientist award</b>, The society of Tropical Agriculture 29<sup>th</sup> June 2018</li> <li>• <b>Excellence in Research Award</b>, Science &amp; Tech. Society for integrated rural improvement 24<sup>th</sup> February 2019</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Associate NCC Officer Award, 2014 &amp; 2015</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka, 2015 - International Conference June 10 -15</li> </ul>

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
	<ul style="list-style-type: none"> <li>• Best presentation (III Prize) in Refresher course in "organic pest control" held at Dept of Entomology Annamalai university during Jan 21st to Feb, 10th 2008</li> <li>• Best oral presentation award - Contemporary approaches in biological science for food, health, nutrition security and conservation of biodiversity 26 and 28 Jan 2021</li> </ul>	
Dr.R. Ayyasamy, Associate Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Outstanding Scientist Award</b>, The Society of Tropical Agriculture, New Delhi, 28/Jun/2019</li> <li>• <b>Scientist Award</b>, B.Vasantharaj David Foundation, Chennai, 17Nov. 2019</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Research Paper, 2011 - National Seminar, Sun Agro Biotech Research Centre, Chennai</li> <li>• Best Oral Presentation, 2012 in the National Symposium, IIHR, Bangalore</li> <li>• Treasurer, Entomological Society of America, U.S.A. (International Branch) - Since 2016</li> <li>• Best Poster Presentation, 2018 - Indian Institute of Natural Resins and Gums, Ranchi</li> </ul>	<ul style="list-style-type: none"> <li>• Bhutan -19-21/ Aug/2008 -To attend 2<sup>nd</sup> International beekeeping congress</li> <li>• Thailand -5-9/Mar/2011-To attend Global Conference on Entomology</li> <li>• U.S.A.-5-8/Nov/2017-To attend 65<sup>th</sup> Annual meeting of Entomological Society of America</li> </ul>
Dr.R.Kannan, Associate Professor	<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best paper in the symposium -In <i>National Symposium on role of Biochemistry and Biotechnology in twenty first century</i>, March, 13-14, 1999, Bangalore</li> <li>• I Prize – Poster Presentation-In: National Seminar on “Advances In Plant Science Research” (Apsr-2019). Held in Department of Botany,</li> </ul>	

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
	<p>Annamalai University, February 27 &amp; 28, 2019</p> <ul style="list-style-type: none"> <li>• Best Poster Award - II Position for Poster Presentation in the Session - IPM1) -In: XIX International Plant Protection Congress (IPPC 2019) on “Crop Protection to Outsmart Climate Change for Food Security &amp; Environmental Conservation” held in Hyderabad, Telengana, November 10 and 14, 2019</li> </ul>	
<p>Dr.V.Sathyaseelan, Associate Professor</p>	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Gold medal</b> on World 2000 Millennium Summit organized by International Association of educators for world peace (IAEWP)- Eight International Environment Congress- New Delhi</li> <li>• <b>Young Scientist award</b>, 2006 by National Environmental Society and Academy</li> <li>• <b>Gold Medal &amp; Junior Scientist Award</b> for the year 2006</li> <li>• <b>Distinguished Scientist Award</b> – 2018 received from Science &amp; Tech Society for Integrated Rural Improvement, Warangal, Telenganaa</li> <li>• <b>Outstanding Entomologist Award</b> -2019 received from United Lightning Vision Association, Bengaluru, Karnataka</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Poster Presentation Award – 2018, national conference on Doubling farmers income for sustainable and Harmonious Agriculture - IINRG, IAB, ICAR RCER , Ranchi, Jharkhand.</li> </ul>	<ul style="list-style-type: none"> <li>• First International Conference on Food, Agriculture &amp; Innovations June 19th-23rd, Bangkok, Thailand</li> </ul>

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
Dr. Chand Asaf, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Scientist Award</b> -Murray State University, Kentucky, USA &amp;Centre for Environment and Agricultural Development, Pondicherry. 2020</li> <li>• <b>Best Researcher Award</b> - United Lightning Vision Association - 2019</li> <li>• <b>Scientist of the year Award</b>, Astha Foundation. 2019</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best group teacher, 2008 by Faculty of Agriculture Best presentation award, Centre of Advanced Studies in Marine Biology and GOI, ICSSR &amp; DBT, New Delhi. 2019</li> <li>• Best poster presentation, ULV Association@ ICFAI, Thailand. 2019</li> <li>• Best oral presentation award - AIASA - Tamil Nadu and Faculty of Agriculture, Annamalai University. 2019</li> <li>• Keynote Speaker Award - Green Agri Professional Society, Dubai, United Arab Emirates. 2020</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Thailand</b> - ULV Association@ ICFAI<i>International Conference</i>”, Bangkok-Pattaya,Thailand, 19-23 Jun 2019</li> <li>• <b>Dubai</b> -<i>International conference on Food, Health, Agriculture innovations</i>”, Dubai, UAE, 5-9 Mar 2020</li> </ul>
Dr.N. Muthukumaran, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Sri Lochanivaradarajulu endowment prize</b> 2018 – Annamalai University</li> <li>• <b>Young scientist award</b> - 2018-7<sup>th</sup> International conference on Agriculture, Horticulture and Plant science held at Shimla</li> <li>• <b>Excellence in Research Award</b> – 2019 -National conference on Farmers orientation towards climate change and up gradation to sustainable</li> </ul>	<ul style="list-style-type: none"> <li>• Sri Lanka, 2015 - Attend 2<sup>nd</sup> Annual international conference on Agriculture and Forestry (Sustainable agriculture and global food security) June, 10-12.</li> </ul>

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
	<p>agriculture held at National college Trichy</p> <ul style="list-style-type: none"> <li>• <b>Best young teacher award</b> - 2019- 6<sup>th</sup> Biopesticide international conference, BIOCICON 2019 Organised by Amity University</li> <li>• <b>Agricultural Scientist Award</b> - 2021- Significant contribution to Agricultural Entomology with focus on Insect Plant Interactions</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best oral presentation award - 2020 -International conference on Recent trends in Agriculture towards food security and rural livelihood</li> <li>• Best Oral Presentation Award - 2022 -National Seminar on Revitalizing soil health through natural resource management in a climate change Era</li> </ul>	
Dr.M.Senthilkumar, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Outstanding Achievement Award</b>-in the field of Insect mycology from Astha foundation, Meerut , 2019</li> </ul>	
Dr.T.Nalini, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Best Women Young Scientist Award</b> in Entomology - 2019 PEARL Foundation for Educational Excellence</li> <li>• <b>Scientist Award</b>- 2020 in appreciation of contributions to Agricultural Entomology and Higher Education - 2020 Dr. B. Vasantharaj David Foundation</li> <li>• <b>Best Researcher Award</b> -2021 Research Grants Generated Through Sponsored Research Projects during 1 Jan - 31 Dec from Annamalai University</li> </ul>	

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
	<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Certificate of Completion of module on Impact Factor and bibliometric indicators - 2018 Researcheracademy.com , Elsevier</li> <li>• Fellow of Society for Biocontrol Advancement - 2019 Society for Biocontrol Advancement</li> <li>• Certificate of appreciation in recognition of significant contribution as peer reviewer - 2019 Biodiversitas, Journal of Biological Diversity</li> <li>• Elsevier Advisory Panel - 2019 ELSEVIER   Research Networks</li> <li>• Chairperson in International conference on Current Immunological tools for biodiversity and status of environmental health - 2019 CAS, GOI, ICSSR, DBT</li> <li>• Certificate of excellence in reviewing - 2020 Asian Journal of Research in Crop Science</li> <li>• Peer reviewer - 2020 Indian Journal of Experimental Biology</li> <li>• Top reviewers on publons (manuscripts reviewed in last 12 months)- 2020 Indian Journal of Experimental Biology</li> <li>• Peer reviewer expert- 2021 Planta (Springer)</li> <li>• Editor-In-Chief-International Journal of Agriculture Science (VITP-IJAGS) (from 19.10.2021)</li> <li>• Editor-In-Chief -International Journal of Agricultural Biotechnology (VITP-IJAB) (from 19.10.2021)</li> <li>• Editorial Member- International journal of</li> </ul>	

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
	<p>Vegetable Science (VITP-IJVSC) (from 19.10.2021)</p> <ul style="list-style-type: none"> <li>• Editorial Member- International Journal of Plant Biology (VITP-IJPB) (from 19.10.2021)</li> <li>• Editorial Member- International Journal of Agricultural Development and Policy (VITP-IJADP) (from 19.10.2021)</li> <li>• Certificate of excellence in reviewing - 2021 from Asian journal of agricultural and horticultural research</li> <li>• Certificate of excellence in peer-reviewing - 2021 from Uttar Pradesh journal of zoology</li> <li>• Certificate of excellence in reviewing - 2021 from South Asian Journal of Parasitology</li> <li>• Reviewer Excellence Award- in Agricultural Science Digest- Agricultural Research Communication Center (ARCC) journals (29.11.2021)</li> <li>• Certificate of appreciation for Reviewer in International Journal of Agricultural sciences 20.2.2021</li> <li>• Certificate of excellence in reviewing - 2021 from International journal of plant and soil science</li> <li>• Certificate of excellence in peer-reviewing from Journal of Basic and Applied Research International - 28.5 .2021</li> <li>• Reviewer in Agricultural Research Communication Center (ARCC) journals (19.5. 2021)</li> </ul>	

Name of the Faculty	Awards/ Recognitions/ Accomplishments	Abroad visits & purpose
Dr. M. Pazhanisamy, Assistant Professor	<p><b>Awards</b></p> <ul style="list-style-type: none"> <li>• <b>Distinguished Scientist Award</b> – 2018 received from Science &amp; Tech Society for Integrated Rural Improvement, Warangal, Telenganaa</li> <li>• <b>Young scientist Award</b> – 2019 received from united lightning Vision Association, Karnataka</li> </ul> <p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>• Best Oral Presentation Award – 2018 received from national conference on Doubling farmers income for sustainable and Harmonious Agriculture organised by IINRG, IIAB, ICAR RCER, Ranchi, Jharkhand.</li> <li>• Best Oral Presentation Award-2022 received from national conference on Revitalizing Soil Health Through <i>Natural Resource Management in a climate change era (RSHNRMC,21)</i> organized by Department of Soil science Agricultural Chemistry, Faculty of Agriculture, Annamalai University.</li> <li>• Best Oral Presentation Award-2022 received from national conference on <i>Transforming Agricultural Extension Systems towards Achieving Food and Nutritional Security</i> organised by Department of Agricultural Extensions, Faculty of Agriculture, Annamalai University.</li> </ul>	<ul style="list-style-type: none"> <li>• Bangkok, Thailand -Paper presentation, June 19th-23rd, 2019</li> </ul>

### **Collaborations with other Institute**

1. MoU with Indian Council of Agricultural Research, New Delhi and Annamalai University as Principal Investigator of ICAR Network project on Insect Biosystematics w.e.f. 14<sup>th</sup> December 2015.
2. MoA with Forest Department, Govt. of Tamil Nadu, and Annamalai University for a collaborative project on Insect Faunal inventory in Social Forestry in Tamil Nadu w.e.f. 1<sup>st</sup> Feb. 2016.
3. MoU with IINRG, Ranchi for Seri-lac culture model for income augmentation. w.e.f. 2011.
4. Voluntary Centre for All India Coordinated Rice improvement Project (AICRIP) -ICAR , IIRR, Rajendranagar, Hyderabad, Telangana w.e.f. July 2022.
5. MoU with Ecobugs Pvt. Ltd., Tanjore for the Production of Biopesticides and Biocontrol agents w.e.f. July 2022.

### **Membership in Various Societies/ Professional bodies**

1. Centre for Environment and Agricultural Development (CEAD)
2. Green Agri Professional Society (GAPS), Dhanbad, Jharkhand
3. United Lightning Vision Association, Bangalore
4. Society for Plant Protection and Environment, Bhubaneswar, Odisha
5. Science & Tech Society for Integrated Rural Improvement
6. Entomology Academy of India
7. Madhumitha Foundation, Suryapet, Telangana
8. Society of Plant Protection Sciences India, New Delhi.
9. Pesticide Research Society India, New Delhi.
10. Insect Study and Conservation Network, Bangalore
11. Plant Protection Association of India, Hyderabad
12. Society of Pesticide Science, New Delhi
13. Royal Entomological Society, UK
14. The Entomological Society of India, New Delhi
15. Society for Biocontrol Advancement, Bangalore
16. Madras Agricultural Students' Union, Tamil Nadu Agricultural University, Coimbatore
17. Zoo Outreach Organization, Coimbatore
18. Association for Advancement of Pest Management in Horticultural Ecosystems

**List of funded Projects (2017-2022)**

S.No.	Name of the Principal Investigator	Title of Project	Name of the Co Principal Investigator(s)	Year of commencement of the Project	Year of completion of the Project	Sponsoring Agency	Outlay (In lakh rupees)
1.	Dr.C.Kathirvelu	Evaluation of NNI-1501 on BPH / WBPH in Rice	Dr.B.Anandaganesa Raja	2017	2018	Hyderabad Chemical Private Ltd., Hyderabad.	3.00
2.	Dr.C.Kathirvelu	Bioefficacy, phytotoxicity and effect on natural enemies of PIPL 1140 on Maize against Army worm/ Corn worm	Dr.R. Kanagarajan	2019	2020	Parijat Industries (India) Pvt. Ltd., New Delhi.	3.00
3.	Dr.C.Kathirvelu	Evaluation of NNI-1701 13.3% SC (NNI 1501 + Thiamethoxam (10+3.3%) on BPH/ WBPH, GLH, Leaf Folder in Rice	Dr.R.Kannan	2018	2020	Nichino India Private Ltd., Hyderabad.	3.00
4.	Dr.C.Kathirvelu	Evaluation of GOD-1003 13.5% SC against major insect pests and mites of Chilli, Tomato, Okra and Brinjal and its phytotoxicity.	Dr.M.Pazhanisamy	2018	2020	Godrej Agrovet Ltd., Mumbai.	6.00
5.	Dr.C.Kathirvelu	Evaluation of NNI-1702 30% WG [NNI-1501 10% + Pymetrozine 20 % WG] to control BPH / WBPH in Rice	-	2019	2020	Nichino India Private Ltd., Hyderabad.	3.00
6.	Dr.C.Kathirvelu	Evaluation of bioefficacy of coded product CCP-5537 SC against Chilli Thrips and Cercospora leaf spot.	Dr.R.Ayyasamy	2019	2020	Crystal Crop Protection Ltd., New Delhi	3.00

7.	Dr.C.Kathirvelu	Evaluation of GOD - 1003 13.5% SC against insect pests and mites of Chilli, Tomato, Okra and Brinjal and its phytotoxicity studies	Dr.M.Pazhanisamy	2019	2021	Godrej Agrovvet Ltd., Mumbai.	6.00
8.	Dr.C.Kathirvelu	Bio-efficacy evaluation of NNI-1702 30% WG [NNI-1501 10% + Pymetrozine 20 % WG] to control BPH / WBPH/ GLH in Rice.	Dr.R.Ayyasamy	2020	2022	Nichino India Private Ltd., Hyderabad.	3.00
9.	Dr.C.Kathirvelu	Bio-efficacy and compatibility of PIPL100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crops on various growth parameters	Dr. S. Venkatesan & Dr. K. Suseendran	2022	2024	Parijat Industries (India) Pvt. Ltd., New Delhi.	5.25
10.	Dr.C.Kathirvelu	Bio-efficacy evaluation of NII 2002 against lepidopteran pests on maize	Dr. B. Ananda Ganesa Raja & Mr. S.R. Vinodkumar	2022	2024	Nichino India Private Limited, Hyderabad.	4.00
11.	Dr.C.Kathirvelu	Climate Resilience on Butterfly Diversity of Selected Coastal Districts of Tamil Nadu	R.Kannan & D. Dhanasekaran	2022	2024	<i>RashtriyaUchchatar Shiksha Abhiyan (RUSA), MHRD, New Delhi.</i>	10.13
12.	Dr.M.Ramanan	Evaluation of coded insecticide (18.5 Sc & 0.4% ) for the control of pest in various crops	Dr.M.Tirupathi	2018	2021	Natco Pharma Limited Hyderabad	7.0
13.	Dr.M.Ramanan	Evaluation of coded insecticide MIC001I (20 SG) for the control of pests in rice and okra	Dr.M.Tirupathi	2018	2021	Ross LifesciencePvt.Ltd, Pune: 411026	4.0
14.	Dr.M.Ramanan	Evaluation of efficacy of Stanomyte on mites in bhendi	Dr.T.Selvamuthukumar	2018	2021	T.stanes and company limited	3.38

15.	Dr.M.Ramanan	Evaluation of coded insecticide AC02 (10.26%) for the control of pests in Grapes and Cabbage	Dr.A.Sivaraman	2019	2022	Natco Pharma Limited Hyderabad	2.70
16.	Dr.M.Ramanan	Evaluation of Cyantrainiliprole 10.26% OD for its efficacy,Phytotoxicity& effect on natural enemies on chilli pests	Dr.N.Muthukumaran	2022	2024	Natco Pharma Limited Hyderabad	3.0
17.	Dr.N.Muthukumaran	Bio efficacy and Phytotoxicity of Clothianidin 0.5 % GR against White grub, Termite and Early shoot borer in Sugarcane	-	2022	2025	Sumitomo chemical India Pvt. Ltd. New Delhi	8.20
18.	Dr.N.Muthukumaran	Evaluation of Bio efficacy and Phytotoxicity of Clothianidin 47.8 % FS against White grub and other sucking pests in Groundnut	-	2022	2024	Sumitomo chemical India Pvt. Ltd. New Delhi	6.50
19.	Dr.N.Muthukumaran	Evaluation of Bio efficacy and Phytotoxicity of Clothianidin 0.5% GR against Stemborer, Leafroller, GLH and BPH in Transplanted Rice	-	2022	2024	Sumitomo chemical India Pvt. Ltd. New Delhi	5.00
20.	Dr.N.Muthukumaran	Evaluation of Profenofos 50% + Fenprothrin 5% EC against Pink bollworm and other insect pests in Cotton	-	2020	2022	Sumitomo chemical India Pvt. Ltd. New Delhi	4.60
21.	Dr.N.Muthukumaran	Evaluation of bio efficacy of Clothianidin 50 WDG against Brown Plant Hopper in Rice	-	2020	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	1.75
22.	Dr.N.Muthukumaran	Evaluation of bio efficacy of Clothianidin 50 WDG against sucking pests in Cotton	-	2020	2020	Sumitomo chemical India Pvt. Ltd. New Delhi	1.80

23.	Dr.N.Muthukumaran	Bio efficacy and Phyto-toxicity of Pyridalyl 10% EC against Fall army worm <i>Spodoptera frugiperda</i> in Maize	-	2019	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	1.75
24.	Dr.N.Muthukumaran	Bio efficacy and Phytotoxicity evaluation of S-1587 (34% SC) against insect pests in Rice	-	2019	2022	Sumitomo chemical India Pvt. Ltd. New Delhi	3.00
25.	Dr.N.Muthukumaran	Bio efficacy and Phytotoxicity evaluation of Profenofos 50% + Fenprothrin 5% EC against Pink bollworm and other insect pests in Cotton	-	2019	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	4.60
26.	Dr.N.Muthukumaran	Bio efficacy studies of Etoxazole 6% + Abamectin 1.5% SC against Red spider mite and other mites in Tea	-	2019	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	7.20
27.	Dr.N.Muthukumaran	Bio efficacy studies of Etoxazole 6% + Abamectin 1.5% SC against Red spider mite and other mites in Brinjal	-	2019	2020	Sumitomo chemical India Pvt. Ltd. New Delhi	4.40
28.	Dr.N.Muthukumaran	Bio efficacy studies of DIPEL against loopers and caterpillars in tea	-	2018	2021	Sumitomo chemical India Pvt. Ltd. New Delhi	7.02
29.	Dr.R.Ayyasamy	Bioefficacy of some coded insecticides against pests of cotton and paddy and diseases of bottle gourd and grapes	Dr.R.Kannan Dr.A.Muthukumar	2014	2017	Sulphur Mills Pvt Ltd. Mumbai	10.80
30.	Dr.R.Ayyasamy	Bioefficacy of coded insecticide TK1001 against pests of tomato, brinjal and cabbage	Dr.R.Kannan	2014	2017	Crystal crop protection Pvt Ltd., Delhi	3.00

31.	Dr.R.Ayyasamy	Evaluation of coded acaricide GW001 against brinjal red spider mite, and coded and acaricide insecticide GW 002 against pests of tomato	-	2015	2017	Gowan AgroPvt.LtdGurgoan	2.00
32.	Dr.R.Ayyasamy	Evaluation of ACTARA 25 WG on pests of grapes as foliar and soil application, EMA/LUF 45 WG on pests of 28engal28s and EMAMECTIN 5 WG on pests of red gram and 28engal gram	Dr.M.Pazhanisamy	2015	2018	Syngenta India Pvt Ltd.,Pune	8.15
33.	Dr.R.Ayyasamy	Evaluation of coded insecticide CP 402 G against sugarcane white grub and termite	-	2015	2018	Crystal Crop Protection Ltd, Delhi	4.00
34.	Dr.R.Ayyasamy	Evaluation of Benfuracarb 3G against root knot nematodes of brinjal	Dr.R.Kannan	2017	2018	Coromandel International, Secunderabad	1.50
35.	Dr.R.Ayyasamy	Evaluation of CCP 4620 WDG against mites chilli	-	2017	2019	Crystal crop protection Ltd., Delhi	2.50
36.	Dr.R.Ayyasamy	Evaluation of Abametin 1.9 EC against red spider mite and leaf miner in tomato	-	2017	2019	Crystal crop protection Ltd., Delhi	2.00
37.	Dr.R.Ayyasamy	Evaluation of CCP 4620 against mites of tea	-	2017	2020	Crystal crop protection Ltd., Delhi	6.00
38.	Dr.R.Ayyasamy	Evaluation of coded insecticide INIG 003 against pests of paddy, cotton and chilli	-	2017	2020	Gowan India Pvt. Ltd Gurgaon	6.48
39.	Dr.R.Ayyasamy	Evaluation of Clothianidin 50 WDG against pest of paddy and grapes and Flonicamid 50 WG against pests of paddy and cotton	-	2017	2020	Crystal crop protection Ltd., Delhi	5.50

40.	Dr.R.Ayyasamy	Evaluation of APEX®50 against pests of cotton and brinjal; CHLORANTRANILIPROLE 18.5% SC against pests of paddy and brinjal; and SPIROTETRAMET 15.31% OD against pests of chilli	-	2018	2020	Crystal crop protection Ltd., Delhi	13.50
41.	Dr.R.Ayyasamy	Evaluation of coded insecticides CCP 40150 and CCP 50150 against pests of paddy	-	2018	2020	Crystal Crop Protection Ltd., Delhi	6.00
42.	Dr.R.Ayyasamy	Evaluation of Emamectin benzoate 1.9 EC against fall armyworm in maize	Dr.B.Anada Ganesa Raja	2018	2020	Crystal crop protection Ltd., Delhi	3.00
43.	Dr.R.Ayyasamy	Evaluation of Benfuracarb 3G against root knot nematodes of brinjal		2019	2021	Coromandel International, Secunderabad	1.50
44.	Dr.R.Ayyasamy	Evaluation of Chlorantraniliprole 18.5 SC against shoot and fruit borer of brinjal and leaf folder and stem borer of paddy	Dr.N.Muthukumaran	2019	2021	Agro Allied Ventures Pvt Ltd, Haryana	3.00
45.	Dr.R.Ayyasamy	Evaluation of coded insecticide CCP 003 against pests of sugarcane	Dr.R.Kannan Dr.P.K. Karthikeyan DrK.Sivakumar	2019	2021	Crystal crop protection Ltd., Delhi	3.00
46.	Dr.R.Ayyasamy	Evaluation of coded insecticide CCP 003 and CCP-0415 against pests of various crops	Dr.R.Kannan Dr.P.K. Karthikeyan DrK.Sivakumar	2019	2022	Crystal crop protection Ltd., Delhi	12.00

47.	Dr.R.Ayyasamy	Evaluation of Insecticides chlorantraniliprole 9.3% + lambda cyhalorthrin 4.6% ZC against pests of pomegranate and emamectin benzoate 5% + lufenuron 40% WG against pests of brinjal	Dr.C.Kathirvelu	2019	2022	Syngenta India Ltd., Pune	5.00
48.	Dr.R.Ayyasamy	Evaluation of emamectin benzoate 3% + indoxocarb 12% SC against pest complex and yield of chilli	Dr.N.Muthukumaran	2020	2021	Bioscience Research Foundation, Kanchipuram	3.50
49.	Dr.R.Ayyasamy	Evaluation of Mincenoxtra (cyanraniliprole + lufenuron) 400 SC against pests of tea	Dr.B.Ananda Ganesa Raja	2021	2023	Syngenta India Ltd., Pune	5.00
50.	Dr.R.Ayyasamy	Evaluation of fenazaquin 200 SC against mites of bhendi, tomato and chilli	Dr.C.Kathirvelu	2021	2023	Gowan India Pvt Ltd, Gurugram	10.50
51.	Dr.R.Ayyasamy	Evaluation of fenazaquin 10 EC + bifenthrin 4 EC against whitefly and mites of cotton.	Dr.Chand Asaf	2021	2023	Gowan India Pvt Ltd, Gurugram	3.50
52.	Dr.R.Ayyasamy	Evaluation of CL - 1136 against sucking pests of cotton	Dr.B.Anada Ganesa Raja	2021	2023	Crystal crop protection Ltd., Delhi	4.00
53.	Dr.R.Ayyasamy	Evaluation of CL - 1813 against sucking pests of cotton and CL 5211 ME against pod borer of redgram	Dr.R.Kannan	2021	2023	Crystal crop protection Ltd., Delhi	8.00
54.	Dr.R.Ayyasamy	Evaluation of CL - 6102 WG against pests of rice and CL 1012 SC against pests of chilli	Dr.R.Kannan	2021	2023	Crystal crop protection Ltd., Delhi	8.00
55.	Dr.R.Ayyasamy	Evaluation of CL - 2082 against pests of brinjal	Dr.R.Kannan	2021	2023	Crystal crop protection Ltd., Delhi	4.00

56.	Dr.R.Kannan	Evaluation of bioefficacy and phytotoxicity testing of profenofos 50% EC on Redgram	-	2015	2017	M/s Nagarjuna Agri. Chemicals Ltd., Hyderabad	3.0
57.	Dr.R.Kannan	Bioefficacy and phytotoxicity trials on Carbofuran 3%CG in Maize and Rice	-	2017	2019	M/s Nagarjuna Agri. Chemicals Industries Ltd., Hyderabad	5.98
58.	Dr.R.Kannan	Bioefficacy, phytotoxicity trials of NAI-243 in Rice and Chilli	-	2018	2020	M/s Nagarjuna Agri. Chemicals Industries Ltd., Hyderabad	5.75
59.	Dr.R.Kannan	Evaluation of Seaweed based biopesticide for rice leaf feeder's management - Technology Development	Dr.C.Kathirvelu and Dr.R.Ayyasamy	2020	In Progress	M/s. Aquagri Processing Pvt. Ltd., New Delhi	10.25
60.	Dr.R.Kannan	Evaluation of Bio-efficacy of Ethiprole 40% + Imidacloprid 40% WG (Code no. BCIL-I-002 (Insecticide) in Rice Crop	Dr.A.M.Amala Hyacinth	2021	In Progress	Baghiratha Chemicals & Industries, Ltd., Hyderabad	1.56
61.	Dr.R. Kanagarajan	Testing of new seed treatment chemicals Sedaxane 2.5% + Fludioxonin 2.5% + Thiamethoxam 26.25% (315.5) FS on Cotton sucking pest and diseases	-	2015	2017	Syngenta India Ltd., Coimbatore	3.5
62.	Dr.R. Kanagarajan	Testing of new insecticide Minecto Forte 480 SC and MinectoXtra 400 SC against Chilli and Rice pest complex	-	2017	2018	Syngenta India Ltd., Coimbatore	4.20
63.	Dr.R. Kanagarajan	Testing of new fungicide Alika 247 ZC against Cluster bean, Citrus and Black gram pest	-	2017	2019	Syngenta India Ltd., Coimbatore	6.0

64.	Dr.R. Kanagarajan	Testing of new insecticide Ampligo 150 SC against Ground nut and Black gram diseases, Minecto Forte 480 SC against Tomato and Brinjal pest	-	2017	2019	Syngenta India Ltd., Coimbatore	8.0
65.	Dr.R. Kanagarajan	Testing of new insecticide EMAM + LUFF 45 WG against Okra, Ber, Red gram and Bengal gram pest	-	2017	2019	Syngenta India Ltd., Coimbatore	8.0
66.	Dr.R. Kanagarajan	Testing of new insecticide Pymetrozime 50 WG against Mango pest and Thiamethoxam 75 SG against Banana pest	-	2017	2019	Syngenta India Ltd., Coimbatore	4.0
67.	Dr.R. Kanagarajan	Testing of new insecticide Spiropidion + Acetamiprid 54 WG against tomato and Cotton and Emamectin + Lufenuron 45 WG against tomato pests and natural enemies	-	2018	2020	Syngenta India Ltd., Coimbatore	6.0
68.	Dr.R. Kanagarajan	Testing of new SYN 547407 100 DC against eggplant and Cabbage pests	-	2018	2020	Syngenta India Ltd., Coimbatore	4.0
69.	Dr.R. Kanagarajan	Testing of new insecticide SYN 547407 200 SC against rice and SYN 547407 100 DC against cotton and Chilli pests	-	2018	2020	Syngenta India Ltd., Coimbatore	6.0

70.	Dr.R. Kanagarajan	Testing of new insecticide Ampligo 150 ZC against grapes and new fungicide viz, Orondis Flexi 170 SC against cucumber downy mildew and Reflect 250 SC against pomegranate leaf and fruit spot	-	2018	2020	Syngenta India Ltd., Coimbatore	6.0
71.	Dr.R. Kanagarajan	Testing of new insecticide Ampligo 150 ZC, Emamectin + Lufenuron 45 WG and Fortenza Duo 480 FS against com fall army worm and stem borer and Chlorantraniliprole against Rice leaf folder	-	2019	2022	Syngenta India Ltd., Coimbatore	12.0
72.	Dr.R. Kanagarajan	Testing of new insecticide Minecto Forte 480SC against Okra pests, Virtako 150 OD against rice pests, PHOENIX (SYN 547407) 200 SC and MinectoXtra 400 SC (CYNT 200+LUF 200) against com pests, PHOENIX (SYN 547407) 100 DC against ground nut pests	-	2020	2022	Syngenta India Ltd., Coimbatore	10.0
73.	Dr.R. Kanagarajan	Testing of new insecticide Evicent 45 WG against Thrips and capsule borer in Cardamom	-	2021	2024	Syngenta India Ltd	10.0
74.	Dr.R. Kanagarajan	Testing of new insecticide SPID+ ACET 54 WG against Tea Pests	-	2021	2024	Syngenta India Ltd	5.0

75.	Dr.R. Kanagarajan	Testing of new insecticide & fungicide MinectoXtra 400 DC against cardamom pests and Orondis Flexi 170 SC against Black Papper Phytophthora Rot	-	2021	2024	Syngenta India Ltd	15.0
76.	Dr.T. Nalini	Studies on diversity of ant fauna and eco-friendly management of <i>Solenopsisgeminata</i> (Fabricius) (Hymenoptera:Formicidae), a serious threat to livelihood of farmers in three coastal districts of Tamil Nadu	-	2016	2017	UGC General Development Assistance XII th plan, R&D Cell, Annamalai University.	10
77.	Dr.T. Nalini	Eco- friendly pest management of mango and cashew using weaver ant, <i>Oecophyllasmaragdina</i> Fabricius (Hymenoptera: Formicidae) for organic fruit production	Dr.R.Ayyasamy	2022	2024	DRD, RashtriyaUchchatar Shiksha Abhiyan RUSA 2.0, Department of Higher Education, Government of Tamil Nadu.	10.13
78.	Dr.T.Selvamuthukumaran	Evaluation of bio - efficacy, phytotoxicity of Orberon (Spiromesifen 240 G/L SC C) in Rice and its effect on natural enemies	Dr.M. Ramanan	2021	2024	Bayer Crop Science Ltd	5.33
79.	Dr.T.Selvamuthukumaran	Evaluation of bio - efficacy, phytotoxicity of Fipronil 0.6 % GR (Regent Ultra) in Chilli and its effect on natural enemies	Dr.T. Nalini	2021	2024	Bayer Crop Science Ltd	5.33

80.	Dr.T.Selvamuthukumaran	Evaluation of bio-efficacy, phytotoxicity and effect on natural enemies of UPI 0421 against insect pests of Paddy	Dr.T. Nalini	2021	2024	UPL Limited	4.42
81.	Dr.T.Selvamuthukumaran	Evaluation of Bio-efficacy of Monocrofos 36 SL in cotton	Dr.T. Rani	2021	2022	UPL Limited	1.69
82.	Dr.T.Selvamuthukumaran	Evaluation of Bio-efficacy and phytotoxicity of BITCOL-16 against pests of Cotton	Dr.P. Anandan	2021	2024	GSP Crop Science Pvt.Ltd	5.20
83.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of FA-2 against insect pests of Groundnut	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.03
84.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of FA-4 against insect pests of Groundnut	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.03
85.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of FA-2 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.03
86.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of FA-4 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.03
87.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of LG-1 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	3.90
88.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of SIZ-1 against insect pests of Sugarcane	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.55
89.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of LG-1 against Mango hoppers	Dr.V. Selvanarayanan	2020	2023	Sulphur Mills Ltd.,	4.55

90.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of UPI 120 against Sucking pests and bollworms of cotton	Dr.V. Selvanarayanan	2020	2023	UPL Limited	4.55
91.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of GPI 1920 against Sucking pests and bollworms of cotton	Dr.V. Selvanarayanan	2020	2023	UPL Limited	4.55
92.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of GPI 818 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	UPL Limited	4.42
93.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy and Phytotoxicity of GPI 2220 against insect pests of rice	Dr.V. Selvanarayanan	2020	2023	UPL Limited	4.55
94.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy of Monocrotophos 36%SL against Sucking pests of cotton	Dr.V. Selvanarayanan	2020	2023	UPL Limited	1.69
95.	Dr.T.Selvamuthukumaran	Evaluation of Bioefficacy of botanical based termiticide	Dr.T. Nalini	2020	2023	Nameix Ltd	0.62
96.	Dr.T.Selvamuthukumaran	Evaluation of PII 8007 20% SC against Fall Armyworm in Maize	Dr.M. Ramanan	2019	2020	PI Industries	3.75
97.	Dr.V.Selvanarayanan	Evaluation of efficacy of solar powered insect light trap in paddy and bhendi crops	Dr.V. Sathya seelan	2016	2018	SAFS Organic Enterprises, Pondicherry	1.20
98.	Dr.V.Selvanarayanan	Bio-efficacy and phyto-toxicity of Fenprothrin 10% EW against stem borer and leaf folder in transplanted rice	Dr.N. Muthu kumaran	2016	2018	Sumitomo Chemicals India Pvt. Ltd, New Delhi	3.38
99.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phyto-toxicity of Clothianidin 50 WDG in groundnut	Dr.N. Muthu kumaran	2016	2018	Sumitomo Chemicals India Pvt. Ltd, New Delhi	3.51

100.	Dr.V.Selvanarayanan	Evaluation of bioefficacy and phyto-toxicity of Tetraniliprole 400 FS on maize and rice	Dr.N. Muthu kumaran	2016	2018	Bayer Crop Science Ltd., Coimbatore	9.30
101.	Dr.V.Selvanarayanan	Evaluation of PIM 014 20% WP against mites on brinjal, chillies and okra	Dr.N. Muthu kumaran	2017	2019	PI Industries, Gurgaon	10.50
102.	Dr.V.Selvanarayanan	Evaluation of ME 5382 2% granules and ME 5382 10% SC against stem borer and brown plant hopper on rice	Dr.T. Selva muthukumaran	2017	2019	Arysta Life Sciences Ltd., Mumbai	7.80
103.	Dr.V.Selvanarayanan	Evaluation of PII 1721 and Ethion in Rice	-	2018	2020	PI Industries, Gurgaon	8.45
104.	Dr.V.Selvanarayanan	Evaluation of bio-efficacy and phytotoxicity of Diflubenzuron 20% + Deltamethrin 2% SC against selected insect pests on brinjal, chilli and tomato	Dr.T. Selvamuthukumaran	2018	2020	Arysta Life Sciences Ltd., Mumbai	10.53
105.	Dr.V.Selvanarayanan	Evaluation of PII 070 and PII 050 in rice	Dr.N.Muthukumaran	2018	2021	PI Industries, Gurgaon	8.71
106.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of FA - 2 against insect pests of sugarcane	Dr.T. Selvamuthukumaran	2020	2023	Sulphur Mills Ltd., Mumbai	4.55
107.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of FA - 4 against insect pests of sugarcane	Dr.T. Selvamuthukumaran	2020	2023	Sulphur Mills Ltd., Mumbai	4.55
108.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of GPI 818 against insect pests of sugarcane	Dr.T. Selvamuthukumaran	2020	2023	UPL Ltd., Mumbai	5.85
109.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of GPI 418 against insect pests of sugarcane	Dr.T. Selvamuthukumaran	2020	2023	UPL Ltd., Mumbai	5.85

110.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of GPI 2220 against sucking pests and bollworms of cotton	Dr.T. Selvamuthukumar	2020	2023	UPL Ltd., Mumbai	4.55
111.	Dr.V.Selvanarayanan	Evaluation of Bio-efficacy and phytotoxicity of GPI 820 against insect pests of paddy	Dr.T. Selvamuthukumar	2020	2023	UPL Ltd., Mumbai	4.42
112.	Dr.S.Manickvasagam	Evaluation of Sux, green gold, virista and plant gold on groundnut, rice, Polyanthes and tomato	Dr.S.Arivudainambi	2014	2017	M/s Biotic Life Sciences (India) Pvt., Ltd. Madurai 600-0-437	9.75
113.	Dr.S.Manickvasagam	Evaluation of CMII 141, Profenophos and cyper against insect pests of chillies and rice	Dr.S.Arivudainambi	2015	2018	M/s Coromandel International Ltd., Secunderabad 600-0-478	8.84
114.	Dr.S.Manickvasagam	Study on management of pests and soil borne diseases in forestry/agro-forestry plantations (on & off farm) in Tamil Nadu	-	2016	2017	Department of Forests, Govt. Of Tamil Nadu 365-F-01	2.50
115.	Dr.S.Manickvasagam	Biodiversity of Insects	-	2016	2017	ICAR 345-F-53	2.55467
116.	Dr.S.Manickvasagam	Evaluation of Pymetrozine, CMII 131 & 151 and Phenthoate against insect pests of Rice & Chilly	Dr.S.Arivudainambi	2016	2019	M/s Coromandel International Ltd., Secunderabad. 600-0-510	14.43
117.	Dr.S.Manickvasagam	Bioefficacy and phytotoxicity evaluation of Lufenuron and Pretilachlor against pests of blackgram, pigeonpea, chilli and paddy	Dr.S.Arivudainambi	2017	2020	M/s Mahamaya Life sciences Pvt Ltd., Gurgaon. 600-0-537	11.05

118.	Dr.S.Manickvasagam	Evaluation of Bioefficacy and phytotoxicity and residue trials of COI 302 WG against insect pests of rice	Dr.S.Arivudainambi	2017	2020	M/s Coromandel International Ltd., Secunderabad 600-0-586	3.95850
119.	Dr.S.Manickvasagam	Bioefficacy and phytotoxicity of Benfuracarb3G against insect pests of paddy	Dr.S.Arivudainambi	2018	2019	M/s Coromandel International Ltd., Secunderabad 600-0-590	1.95
120.	Dr.S.Manickvasagam	Bioefficacy, phytotoxicity and residue trials of COI 309 WG on insect pests of Chilly	Dr.S.Arivudainambi	2018	2020	M/s Coromandel International Ltd., Secunderabad 600-0-593	4.55
121.	Dr.S.Manickvasagam	Bioefficacy and phytotoxicity of Nitenpyram against insect pests of cotton and paddy.	Dr.S.Arivudainambi	2018	2021	M/s Coromandel International Ltd., Secunderabad. 600-0-650	8.32
122.	Dr.S.Manickvasagam	Bioefficacy and phytotoxicity of Benfuracarb3G against insect pests of paddy	Dr.S.Arivudainambi	2018	2020	M/s Coromandel International Ltd., Secunderabad 600-0-654	1.95
123.	Dr.S.Arivudainambi	Evaluation of Virtako 2.4DT on rice pests as soil broadcast and sedaxane15% + Azoxystrobin 3.75% + Thiamethoxam 26.25% (450 FS) on rice sucking pests and disease complex as seed treatment	Dr.T. Selvamuthukumar	2015	2017	M/s Syngenta India Ltd.	4.00
124.	Dr.S.Arivudainambi	Evaluation of Voliam Flexi 300SC on sugarcane and Minecto Forte 480SC on cotton pests	Dr.T. Selvamuthukumar	2017	2019	M/s Syngenta India Ltd., Coimbatore	4.20

125.	Dr.S.Arivudainambi	Effect of pymetrozine, virtaka, polo, voliamflexi and syn 546330 against various pests of different crops	Dr.T. Selvamuthukumar Dr.R.Kanagarajan	2017	2021	M/s Syngenta India Ltd.	28.0
126.	Dr.S.Arivudainambi	Chlorantraniliprole and Emamectin on <i>Helicoverpaarmigera</i> in vegetables and Chlorantraniliprole on <i>Leucinodesorbonalis</i> in Eggplant	Dr.T. Selvamuthukumar	2018	2021	M/s Syngenta India Ltd.	12.20
127.	Dr.S.Arivudainambi	Evaluation of Emamectin benzoate against insect pests on various crops	Dr.T. Selvamuthukumar	2019	2022	M/s Coromandel International Ltd., Secunderabad,	30.42
128.	Dr.S.Arivudainambi	Base line studies and resistance monitoring using SYN 547407 100 DC against thrips, <i>Scrtothrips dorsalis</i>	Dr.T. Selvamuthukumar	2019	2023	M/s Syngenta India Ltd. Coimbatore	6.00
129.	Dr.S.Arivudainambi	Effects of Fortenza 600 Fs against Corn Fall Armyworm, Stem Borer and Cutworm	Dr.T. Selvamuthukumar	2019	2022	M/s Syngenta India Ltd. Coimbatore	3.00
130.	Dr.S.Arivudainambi	Evaluation of Fonicamid 50%WG against insect pests on cotton and paddy	Dr.T. Selvamuthukumar	2020	2022	M/s Mahamaya Life sciences Pvt Ltd., Gurgaon,	7.80
131.	Dr.S.Arivudainambi	Bioefficacy and phytotoxicity of Pymetrozine 50% WG on paddy	Dr.T. Selvamuthukumar	2020	2022	M/s Mahamaya Life sciences Pvt Ltd., Gurgaon,	5.20
132.	Dr.S.Arivudainambi	Effect of Neemazol tree injection on pests of mango	-	2020	2022	M/s Coromandel International Ltd., Cuddalore,	5.97895

133.	Dr.S.Arivudainambi	Field efficacy and toxicology data for their product Neem Biostar	-	2020	2021	Sun Bio Naturals (India) Private Ltd., Chennai	2.45
134.	Dr.S.Arivudainambi	Effect of Neemazol tree injection on pests of mango	-	2020	2022	M/s Coromandel International Ltd., Cuddalore,	5.97895
135.	Dr.S.Arivudainambi	Evaluation of Ronfen 1858 SC against insect pests on cotton	-	2021	2024	M/S. Best Crop Science, New Delhi	5.85
136.	Dr.S.Arivudainambi	Bioefficacy, phytotoxicity and residue trials of CIX-5002A on insect pests of Chilly	-	2021	2023	M/s Coromandel International Ltd., Secunderabad,	6.74960
137.	Dr.S.Arivudainambi	Bioefficacy, phytotoxicity and residue trials of COI 309 WG on insect pests of Chilly	-	2021	2023	M/s Coromandel International Ltd., Secunderabad,	6.74960
138.	Dr.S.Arivudainambi	Bioefficacy, phytotoxicity and residue trials of insecticides and funds for infrastructure	-	2021	2023	M/s Coromandel International Ltd., Secunderabad,	5.36900
139.	Dr.S.Arivudainambi	Bioefficacy, phytotoxicity and residue trials with CILI 111 against insect pests on Maize	-	2021	2023	M/s Coromandel International Ltd., Secunderabad,	5.36900
140.	Dr.S.Arivudainambi	Bio efficacy, phytotoxicity and residue data for CILI 103 on Rice	-	2022	2024	M/s Coromandel International Ltd., Secunderabad	4.459
141.	Dr.S.Arivudainambi Dr.T.Selvamuthukumaran	Development of Sericulture and Apiculture - a viable remunerative approach for the sustainable livelihood of coastal farmers, rural youth and women	Dr.R.Kanagarajan Dr.S.Thirupathi Dr.T.Kalaiarasan	2021	2024	TANSCHÉ - Research Grant Project (RGP), Chennai	77.00
						<b>Total</b>	<b>890.07727</b>

### 6.4.3 Technical and Supporting staff

Eleven technical and supporting staff members in the Department are helping in academic, research and administrative activities (as on July 2022).

Sl. No.	Sanctioned posts	Staff in place	Designation (number within parentheses)	Responsibility	Administrative Staff Requirement as per ICAR
1	Secretarial staff	1	Special Officer	Establishment & administrative work, purchase & budget, Data maintenance	-
2	Technical staff	3	Semi-Skilled Helper (1), Deputy Garden Superintendent (2)	Issue of chemicals and glassware, maintenance of library, store keeping, Garden maintenance	Lab Assistant (1)
3	Ministerial staff	7	Office Assistant (1), Helper (2), Gardener (4)	Dispatch of letters, circular maintenance, assisting practical classes by arranging specimens, maintenance of laboratories, research field, screen houses, glass house and pot-culture area.	Field Assistant (1) Assistant (1)

### 6.4.4 Classrooms and Laboratories

The Department has well equipped class rooms and laboratories with large collection of economically important insect groups and wide range of instruments to provide hassle free experience in learning and research. **Head room and office are well equipped with basic amenities such as Xeroxing, printing and computer facilities. Two separate laboratories for UG classes (Smart classes), seven staff rooms and a separate store room for chemicals and glassware are available,**in addition to the PG class room and laboratory facilities and the details of which are furnished below.

Facility	Number
Lecture cum Instructional Laboratory	4
Insect Museum	1
Bee Museum	1
Sericulture Museum	1
Domain specific Laboratories	7
Field stations and Field Units	6
Medicinal and pesticidal plants Garden	1
Pot culture yard	8
Screen house	4

Department Library	1
Insect culture Room	1
Conference Hall	1
Staff room	9
Head Cabin & Display hall	2
Head office	1

Sl.No.	Facility	Area (Sq. ft.)	Description & Equipment housed
1.	Post-graduate Lecture Hall cum Instructional Laboratory	39' x 25' = 975	Smart class room with a seating capacity of 25 with Television and <b>equipment viz.,</b> <ol style="list-style-type: none"> <li>1. Binocular zoom stereo microscope - 2 nos.</li> <li>2. Binocular microscope- 2 nos.</li> <li>3. Monocular microscope -1 no.</li> <li>4. Simple microscope - 10 nos.</li> <li>5. Film viewer -1no.</li> <li>6. Insect Collection Net - 20 nos.</li> <li>7. Insect Box - 50 nos.</li> <li>8. Poison bottle- 20 nos.</li> <li>9. Magnifier -1no.</li> <li>10. Glassware</li> <li>11. Chemicals</li> </ol>
2.	Ph.D.Lecture Hall cum Instructional Laboratory	29' x 20' = 580	Smart class room with a seating capacity of 15 with Television and <b>equipment viz.,</b> <ol style="list-style-type: none"> <li>1. Binocular microscope -1no.</li> <li>2. Compound microscope -1no.</li> <li>3. Glassware</li> <li>4. Chemicals</li> <li>5. Insect collection net - 10</li> <li>6. Insect collection boxes - 10</li> </ol>
3.	Apiculture - Field Station	11' x 16' = 176	To keep the materials for handling apiary. <ol style="list-style-type: none"> <li>1. Beekeeping appliances 3 sets</li> <li>2. Hive - 57 sets</li> </ol>
4.	HPR - Field Station	11' x 16' = 176	To keep the materials for handling field work regarding HPR studies.  <b>Equipment</b> <ol style="list-style-type: none"> <li>1. Compound Microscope</li> <li>2. Electronic balance</li> </ol>

5.	Insect Museum & Parasitoid taxonomy laboratory	32'x27' = 864	<p>An air-conditioned laboratory to carry out taxonomy research with sophisticated imported microscopes and equipment</p> <p><b>Insect Museum</b></p> <p>An air-conditioned Insect Museum with Unique collection of around 50,000 insects representing all insect orders known from India. In addition to adults, immature insects and few models are also placed for the benefit of students. A web data base (EDAU - Annamalai InsectCollection) for the museum is also available.</p> <ol style="list-style-type: none"> <li>1. Insect boxes -210</li> <li>2. Collection nets -23</li> <li>3. Dip nets-9</li> <li>4. Entomological pins</li> <li>5. Setting boards -51</li> <li>6. Pinning blocks-10</li> <li>7. Specimen jars-110</li> <li>8. Show case boxes-48</li> <li>9. Slides</li> </ol> <p><b>Parasitoid taxonomy laboratory</b></p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Television</li> <li>2. Visualizer ELMO</li> <li>3. Leica M205C&amp; DM 750 trinocular stereo zoom with Montage software for capturing 3D image-2 nos.</li> <li>4. Phase contrast trinocular</li> <li>5. Stereo zoom – 8 nos.</li> <li>6. Trinocular stereoscopic zoom microscope with drawing tube Nikon SMZ 1500</li> <li>7. Binocular- Nikon eclipse E400</li> <li>8. Binocular -Novex Holland</li> <li>9. Binocular Zeiss primostar</li> <li>10. Computer</li> </ol>
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6.	Apiculture Laboratory & Bee Museum	32'x27' = 864	<p>An air-conditioned laboratory to carry out apiculture research</p> <p><b>Materials</b></p> <ol style="list-style-type: none"> <li>1. Newton bee hive</li> <li>2. Italian bee hive</li> <li>3. Marthandam hive</li> <li>4. Pot hive</li> <li>5. Wooden box</li> <li>6. PVC model</li> <li>7. Full protective Suite</li> <li>8. Neck type protective veil</li> <li>9. Hall protective veil (Hip sized)</li> <li>10. Drone trap</li> <li>11. Pollen trap</li> <li>12. Smoker</li> <li>13. Extractor</li> <li>14. Queen cage</li> <li>15. Swarm trap</li> <li>16. Queen excluder sheet</li> <li>17. Comb foundation sheet</li> <li>18. Decapping knife</li> <li>19. Gloves</li> <li>20. Hive tool- SS type</li> <li>21. Queen gate</li> <li>22. Raw honey</li> <li>23. Bee wax</li> <li>24. Value addition - Dates, nuts, Ginger, Garlic, Fig, Amla</li> <li>25. Different types of combs</li> </ol>
7.	Plant Tissue Culture Laboratory	7'x15' = 105	<p>An air-conditioned Laboratory</p> <p><b>Equipment</b></p> <p>Tissue culture rack</p> <p>Laminar flow chamber</p>
8.	Insect Culture room	13'x15' = 195	<p>An air-conditioned Culture room with racks and cages for insect culture such as <i>Spodoptera litura</i>, <i>Spodoptera frugiperda</i>, <i>Earias</i>, greater wax moth, <i>Epilachna</i></p> <p>Steel racks - 7</p> <p>Refrigerator -1</p> <p>Insect Cages - 10</p> <p>Glass jars - 30</p>
9.	Phyto-insecticides Laboratory I	33'x 22' = 726	<p><b>Phyto-insecticides Laboratory</b></p> <p>For carrying out extraction, bioassay, deducing mode of action, purification and fractionation works.</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Micro applicator</li> <li>2. Rotary flash vacuum evaporator</li> <li>3. Soxhlet extraction apparatus</li> <li>4. Refrigerated water circulator</li> </ol>

			<ol style="list-style-type: none"> <li>5. Binocular microscope</li> <li>6. Compound microscope</li> <li>7. Microwave oven</li> <li>8. Magnetic stirrer</li> <li>9. Vortex mixer</li> <li>10. Heating mantel</li> <li>11. Cyclomixer</li> <li>12. Mixie</li> <li>13. Plant growth chamber</li> <li>14. Distillation units</li> <li>15. Refrigerator</li> <li>16. Deep freezer</li> <li>17. Column chromatography</li> <li>18. Hot air oven</li> </ol>
10.	HPR Laboratory	20' x 17' = 340	<p>For evaluating mechanisms and factors of resistance in crop varieties against insect pests</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Leaf area meter</li> <li>2. Olfactometer</li> <li>3. Volatile Collection Chamber</li> <li>4. Spectrophotometer</li> <li>5. Mono-ocular microscope with camera</li> </ol>
11.	Phyto-insecticide Laboratory II	27' X 13' = 350	<p>An air-conditioned Laboratory</p> <p>For formulating botanical insecticides</p> <p><b>Equipment</b></p> <ol style="list-style-type: none"> <li>1. Spray drier</li> <li>2. Environment test chamber</li> <li>3. Potters tower</li> <li>4. Hot air oven</li> <li>5. Weighing balance</li> <li>6. Magnetic stirrer</li> <li>7. Refrigerator</li> <li>8. Mixie</li> <li>9. pH meter</li> <li>10. Distillation unit</li> <li>11. Digital overhead stirrer</li> </ol>
12.	Toxicology & Sea Weed Laboratory	33' x 22' = 726	<p>To carry out sea weed research and insecticide resistance monitoring</p> <ol style="list-style-type: none"> <li>1. Extraction unit</li> <li>2. Water circulator</li> <li>3. Refrigerator</li> </ol>
13.	Molecular Laboratory	20' x 17' = 340	<p>To conduct basic molecular research</p> <p><b>Instruments</b></p> <ol style="list-style-type: none"> <li>1. Multiple gel casting unit,</li> <li>2. Submarine Electrophoresis,</li> </ol>

			<ol style="list-style-type: none"> <li>3. Vertical slab gel Electrophoresis</li> <li>4. Refrigerator</li> <li>5. SDS PAGE</li> <li>6. Hot air oven</li> <li>7. Muffel furnace</li> <li>8. Centrifuge</li> <li>9. Spectrophotometer</li> <li>10. BOD incubator</li> </ol>
14.	Skill laboratory	19' x 22' = 418	<p>Students are trained with all basic skills related to entomology. Materials and tools needed for skill development in basic entomology studies</p> <p><b>Instruments</b></p> <ol style="list-style-type: none"> <li>1. Simple microscope</li> <li>2. Compound microscope</li> <li>3. Zoom stereo Microscope</li> <li>4. Attachment lens</li> <li>5. Haemocytometer</li> <li>6. Micrometry</li> <li>7. Insect collection nets</li> <li>8. Slides&amp; Cover slip</li> <li>9. Dissection set</li> <li>10. Artificial diet materials</li> <li>11. Rearing containers</li> <li>12. Formulations of Insecticides</li> <li>13. Sprayers</li> <li>14. Traps</li> </ol>
15.	Sericulture Museum Eri and Sericulture Laboratory	19' x 18' = 342	Sericulture Museum contains exhibits related to sericulture. A laboratory for doing research on mulberry silkworm and Eri silkworm with all rearing materials and trays
16.	UG Laboratory I	38' x 30' = 1140	Smart class room with all specimens needed to conduct practical classes. Binocular microscopes, simple microscopes, insect boxes, inset collection nets, specimen jars
17.	UG laboratory II	40' x 32' = 1280	Smart class room with all specimens needed to conduct practical classes. Sprayers, pesticide containers, bee keeping appliances, sericulture materials, lac products, insect collection net, herbarium
18.	Experimental farm - II Mulberry field	7.0 acre	Completely fenced area with Drip irrigation facility with one farm pond and planted with two mulberry varieties
19.	Experimental farm - I Bee Garden	3.5 acres	To provide forage for bees
20.	Experimental Field - I semi field research	41' x 17' = 697	Eight banana varieties are maintained
21.	Experimental Field - II semi field research	100' x 125' = 12500	Completely fenced area with Sprinkler& Drip irrigation facility. Crop cafeteria is maintained

		0.3 acre	and pest life stages are shown to the students. Six different popular mulberry varieties are maintained
22.	Pot-culture yard I	46'x30' =1380	Grow bags and pots to conduct Pot culture studies related to rice & millets Net house for - Rice Leaf folder, BPH, Stem borer
23.	Pot-culture yard II & III	40'x28' =1120	Grow bags and pots to conduct Pot culture studies in pulses, cotton, oil seeds
24.	Pot-culture yard IV - VII	67'x47' =3149	Grow bags and pots to conduct Pot culture studies in Vegetables
25.	Pot-culture yard VIII	70'x25' = 1750	Grow bags and pots to conduct Pot culture studies related to HPR
26.	Sucking pest culturing Unit I & II	58'x38'= 2204	Cages and racks for culturing of sucking pests such as Aphids, Thrips, Mealybugs
27.	Medicinal plant garden	29'x22'= 638	36 species of medicinal and pesticidal plants
28.	Screen house- I	25'x16'= 400	To carry out specific <i>in-situ</i> enclosure studies and Resistance monitoring studies. Farm implements & Fumigation chamber
29.	Screen house- II	20'x10'= =210	To carry out screening studies related to host plant resistance
30.	Screen house- III	25'x20'= 500	To carry out screening studies related to host plant resistance in Rice
31.	Apiary I	30'x80'= 2400	Apiary with 25 hives of Indian bees for instructional purpose
32.	Apiary II	150'x 50'= 7500	Apiary with 25 hives of Indian bees/5 hives of dammer bees for instructional purpose
33.	Silkworm rearing sheds 3 Nos.	65'x18'= 1170 each	Mulberry silkworm rearing sheds to rear silkworm
34.	Conference Hall	20'x18'= 360	A full-fledged air conditioned conference hall with audio-visual aids and a seating capacity of fifty is available for scientific and social deliberations
35.	Department Library	30'x10' = 300	The Department Library is provisioned with 547 text and reference books, 288 PG and 38 Ph.D. theses, more than 20 national and international journals, 102 bound back volumes, Annual Review of Entomology, 75 conference proceedings, 95 project reports and more than 10,000 reprints
36.	Stores	28'x6' = 168	To keep chemicals and glassware
37.	Farm ponds	6 nos	To harvest water

38.	Bio-control agents production Unit	25'x15' = 375	Various biocontrol agents are produced in collaboration with EcocarePvt. Ltd. 1. Hot air oven -1no. 2. Laminar flow chamber -1no. 3. Autoclave -1no.
39.	Biocontrol Research laboratory (Flyash building)	20'x13' = 260	Containers to grow various biocontrol agents
40.	Lepidoptera repository and stored product Laboratory	10'x10' = 100	Repository - Butterflies and moths of southern India. The butterflies and moths collected from various localities are identified and preserved. Research on stored pests and culture of <i>Callosobruchus</i> , <i>Corcyra</i> , <i>Tribolium</i>

#### 6.4.5 Conduct of Practical and Hands-on Training

Theory classes are conducted in single batch and during practical classes, the students are divided into two groups and imparted with hands-on training in

1. Running of taxonomic keys
2. Insect Biochemical analysis
3. Ecosystem analysis
4. Insect Diversity estimation
5. Maintenance of insect museum
6. Slide Mounting and Dissection of insects
7. Preparation of bio inputs
8. Application of bio inputs
9. Target specific insecticides
10. Residue analysis
11. Insecticide Resistance management
12. Rearing of test insects
13. Conducting bioassays
14. Animal maintenance for toxicology studies
15. Plant Biochemical and biophysical analysis
16. Field assessments
17. Fabrication of traps and behaviour analysis of insects
18. Gel electrophoresis

The participatory and innovative Teaching - Learning methodologies adapted include question and answer sessions, brainstorming, quiz, debates and discussions. Practical assignments, model preparation, problem tree analysis, field trips, case studies are done whenever necessary.

The students are taken to **Centralised Instrumentation and Service Laboratory** of Annamalai University and also **Pharmacology laboratory** to show the working principle of instruments like **SEM, HPLC, Gas Chromatography, NMR, tablet punching machine**

*etc.*, in the estimation of pesticide residue in various matrixes and characterization of botanical insecticides. **Animal House** in our University gives exposure on **animal toxicology studies**. Students are also taken to **IIBAT, Padappai and Regional Plant Quarantine Station, Chennai, ICAR-NBAIR, Bangalore and bio-diversity hotspots in the eastern ghats and western ghats** to get hands on experience in pesticide residue analysis, animal house maintenance, good laboratory practices and quarantine procedures, bio control methodologies and faunal diversity on a regular basis.

Students are provided practical hands-on training on pest management in farmers' fields. Students are encouraged to attend National and International Conferences/seminars for research exposure and guest lectures are arranged periodically to enable scientific interactions. **Entomology Society for Innovations (ESI)** is functioning in the Department since February 2007 and is meant to tap knowledge and creativity of students, scholars and teaching staff in insect science. **Annamalai Entomology Students Club** is functioning for the benefit of the students.

#### 6.4.6 Supervision of students in Ph.D. programmes

**Out of 19 faculty, 17 are eligible to guide Ph.D. scholars** and in the last five years, Department of Entomology successfully **produced 23 Ph.D. scholars**. For supervision and evaluation of their, each Ph.D. Scholar shall have an advisory committee which is formed before the end of the first semester to facilitate the student in carrying out the assigned thesis research plan.

Each Ph.D. scholar shall have a **Research Advisory Committee (RAC)** to guide the scholar in carrying out his/her programme. A Research Advisory Committee shall be constituted with the approval of the University for each candidate separately, immediately after his/her admission. The purpose of the RAC is to provide expert opinion on frontline research. There shall be a Research Advisory Committee for every student consisting of not fewer than four members with the Supervisor as Chairperson. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director, DARE for information.

Guidelines on the duties of the RAC

- Discuss, advice and recommend on all matters connected with the scholar's research from admission till the completion of the programme.
- Approve the topic of research and the synopsis.
- Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D.

- If necessary, recommend and approve change of title of dissertation / thesis and change of Research Supervisor.
- Conduct the pre-submission presentation (before the submission of synopsis) and to give a certificate to this effect to be submitted along with the synopsis.
- The Research Advisory Committee will meet every semester
- To scrutinize the research proposal / progress report submitted by the research scholar
- To assess the conduct of experiments / field work, peruse laboratory notebooks, data recording, analysis, and publication.
- To review and endorse the annual progress report of the research scholar.
- To approve the synopsis of the thesis.
- The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department.

**Number of recognized Teachers for Ph.D. Guidance**

No. of recognised Teachers	Academic year	Intake of students
17	2021-2022	6
18	2020-2021	10
18	2019-2020	10
18	2018-2019	8
18	2017-2018	7

**Details of Ph.D. Thesis submitted (2017 – 2022)**

Sl. No.	Name of the Scholar	Name of the guide	Year of completion	Title
1.	Krishna Chaitanya T	Dr.S.Manickavasagam	2017	Diversity of Encyrtid ( <i>Hymenoptera: chalcidoidea</i> ) Parasitoids from selected states of India
2.	Ramanan M	Dr.T.Selvamuthukumaran	2017	Exploring anti insecticidal properties of certain solvent fractions of <i>Armegeera menicana</i> .
3.	Palanivel S	Dr.S.Manickavasagam	2018	Diversity if Indian Mymarid( <i>Hymenoptera: Chalcidoidea</i> ) Egg Parasitoids
4.	Gowri prakash	Dr.S.Manickavasagam	2019	Morphology Versus Molecular Phylogeny in Diagnosing Indian Chalcididae ( <i>Hymenoptera: Chalcidoidea</i> )
5.	Kanagaraj B	Dr. C. Kathirvelu	2019	Ethology, biology and diversity of Lycaenid ( <i>Lepidoptera: Glossata</i> ) butterflies of Tamil Nadu
6.	Ayyamperumal M	Dr.S.Manickavasagam	2020	Diversity, host parasitoid association and conservation of India encyrtid ( <i>Hymenoptera: chalcidoidea</i> ) parasitoids.
7.	Karthikeyan R	Dr. R. Ayyasamy	2020	Bioefficacy and residues of Emamectin Benzoate 1.9 EC Against borders of Okra ( <i>Abelmoschus esculantus</i> L.)
8.	Suresh kumar R S	Dr.S.Arivudainambi	2020	Studies on the insect pest complex in Hybrid Maize and their Management
9.	Gowthish K	Dr.R.Kannan	2021	Studies on the pesticidal Activity of Seaweeds in Eastern coast Ecosystem of Tamil Nadu against <i>Spodoptera litura</i> (Fab.) ( <i>Noctuidae: Lepidoptera</i> )
10.	Amala Hyacinth A M	Dr. Chand Asaf	2021	Host Plant Resistance in Sunflower against selected insect pests
11.	Baskar M	Dr. B. Ananda Ganesa Raja	2021	Studies on mosquito species complex and development of effective management strategy for Bengaluru Metropolitan city

12.	Nisha LN	Dr.R. Kanagarajan	2021	Characterization of rice accessions for their resistance against yellow stem borer, <i>Scirtophaga incertulas</i> Walker (Crambidae: Lepidoptera) under coastal saline lowlands of Tamil Nadu
13.	Ranjith R	Dr. S. Arivudainambi	2022	Revitalization of indigenous insecticidal formulations
14.	Pavithradevi P	Dr. N. Muthukumaran	2022	Resistance in Blackgram accessions against selected insect pests
15.	Suhasini V	Dr. S. Arivudainambi	2022	Exploring the Pesticidal properties of Flora in the Andaman Nicobar islands
16.	Sankararaman H	Dr. S .Manickavasagam	2022	Taxonomy in Indian fairfly (Hymenoptera: Chalcidoidea: Mymaridae) parasitoids
17.	Selvam K	Dr .T. Nalini	2022	Colony Dynamics and biolontrol potential of <i>Oecophylla smaragdina</i> Fabricius (Hymenoptera: Formicidae) on the major pests of Cowpea and Bhendi
18.	Manikandan P	Dr.V.Selvanarayanan	2022	Identification of host plant resistance in groundnut germplasm against selected insect pests
19.	Indhumathi B	Dr. S. Arivudainambi	2022	Discovery of potent anti-insect fractions from the phytochemical sources
20.	Athithya A	Dr.S.Manickavasagam	2022	Taxonomy of selected genera of Indian fairyflies (Hymenoptera: Chalcidoidea, Mymaridae) Parasitoid
21.	Mary Floret V	Dr.S.Manickavasagam	2022	Management strategies for permanent establishment of <i>Apis cerana indica</i> at Annamalai University premises
22.	Archunan K	Dr.M.Palanisamy	2022	Evaluation of certain ecofriendly management tactis against thrips <i>Scirtothrips dorsalis</i> in chillies
23.	Saravanaraman M	Dr.V.Selvanarayanan	2022	Development of webworm tolerant sesame genotypes through mutation breeding

#### 6.4.7 Feedback of stakeholders (Students, farmers, company, parents etc.)

An effective **Mentor - mentee** system is functioning at the department level to get feedback from the students regarding curricular and co-curricular activities. The course teachers are getting feedback regularly in the prescribed format from each student regarding lecture delivery, hands on training *etc.* at the end of the semester. The feedback obtained is discussed in the Department staff meeting for necessary improvement in curricula, hands- on training and research facilities.

In addition, feedback from nearby farming communities is regularly obtained by field visits. Meetings with **farmers, NGOs** and state government agricultural officers are arranged periodically to discuss and get feedback and is used for undertaking need based research to solve the issues. Informal **feedback from entrepreneurs and industry personnel** are obtained during their visits to the Department either for their reunion meets or official visits. With the support of **Annamalai Digital Information Centre**, online feedback and suggestions are obtained from students and the **IQAC** process these inputs and offer suggestions to the concerned Department. Further such inputs are placed in the Academic Council and Syndicate meetings along with the Action Taken Reports. Based on the inputs from all the three spheres, structural modifications in the syllabus are done. Occasionally, parents are meeting the staff and sharing the views.

Stakeholders	Action taken
<b>Students</b>	Conducting coaching classes for competitive and entrance examinations such as NET, ICAR fellowship and Ph.D.
	Regular Diagnostic field visits and short study tours to eco-spots
	Creation of additional pot-culture yard and semi field research facility
	Internship during the Programme
<b>Farmers, NGOs &amp; Agricultural officers</b>	Method demonstration related to pest management
	Training on apiary maintenance and issuing bee colonies
	Demonstration and Fixing of solar powered light traps
	Campaign on rodent management & Owl nesting
	Guidance in preparation of improved formulations of botanicals
	Inputs for organic agriculture
<b>Pesticide and Sugar Industries</b>	Syllabus revision in tune with the latest developments in the industry
	Establishment of doses for pesticide molecules
	Resistance monitoring
	Domain specific Laboratories
<b>Parents</b>	Increased number of student fellowships - around 35 lakh rupees has been awarded to students of PG from funded projects in the last five years.
	Creation of Employment opportunities (Placement)

#### 6.4.8 Student intake and attrition in the programme (last five years)

Students are admitted in the programme based on the OGPA, subject OGPA, entrance examination marks and interview performance.

Details	Students admitted					Attrition (%)				
	2017 -18	2018 -19	2019 -20	2020 -21	2021 -22	2017 -18	2018 -19	2019 -20	2020- 21	2021- 22
Total	7	8	10	10	6	0	0	0	0	0
Male: Female	1:1.1	1:0.6	1:1.5	1:1.5	1:1	0	0	0	0	0

Number of PhD awarded						
Year	2017	2018	2019	2020	2021	2022
Total	2	1	2	2	4	11
Male: Female	1:0	1:0	1:1	1:0	1:0.3	1:0.8

#### Performance of PhD Scholars in NET/ARS

Number of Ph.D. scholars appeared and Passed in NET/ARS					
Year	2017	2018	2019	2020	2021
Number Passed	3	2	2	5	0
Number Appeared	3	2	2	5	0
Pass Percentage	100%	100%	100%	100%	-

#### List of Scholars passed in NET/ARS

Year	NET/ARS Qualified
2017	Manikandan P Indhumathi B Ranjith R
2018	Mary Floret V Selvam K
2019	Yogapriya A Thulasi S
2020	Pungavi R Nishanthini K Gopianand L Saraswathi J M

### Fellowships offered in the Department

Fellowships from private funded projects (around 40 lakhs rupees for the past five years) are extended to PG students to encourage their research activities.

Academic Year	Amount Dispersed as Fellowships (Rs. in lakhs)	Number of Students benefitted
2017-18	14.76	5
2018-19	14.40	4
2019-20	21.93	10
2020-21	5.88	7
2021-22	1.20	1

### Students' achievement

- **Commonwealth Split site Doctoral fellowship** awarded to Miss. J.Gowri Prakash in the year 2017-18 to pursue their Ph.D. stands testimony to the students' achievement (Guided by Dr.S.Manickavasagam)
- **DST-Inspire fellowship** to G. Suguna during 2021 (Guided by Dr.S.Arivudainambi)
- **DST-Inspire fellowship** to B.Anujaa during 2022 (Guided by Dr.S.Arivudainambi)

### Employment of PhD Scholars

The Department is also striving hard to produce employable graduates which results in greater placements of the students in various private sectors.

Year	Number of PG students graduated (Male: Female)	Employed in					Percent employed
		Central Govt.	State Govt.	Private	Entrepreneur	International	
2017	2 (2:0)	-	1	1	-	-	100
2018	1 (1:0)	-	-	1	-	-	100
2019	2 (1:1)	-	-	2	-	-	100
2020	2 (2:0)	-	-	2	-	-	100
2021	4 (3:1)	-	1	2	1	-	100
2022	11 (6:5)	-	-	10	-	-	90

S.No.	Year of completion	Name	Designation / Company Name	Salary (per Month)
1.	2017	T. Krishna Chaitanya	Assistant Professor, School of Agri & Tech, Narsee Monje Inst. Of Management Studies, Shirpur, Maharashtra	60,000
2.	2017	M.Ramanan	Assistant Professor,	1,10,000

			Annamalai University	
3.	2018	S.Palanivel	Assistant Professor, Imayam Agricultural College, Trichy	32,000
4.	2019	Gowri prakash	Assistant Professor, Doon Business School, Dehradun	60,000
5.	2019	Kanagaraj B	Assistant Professor, Nalanda Agricultural College, Trichy	32,000
6.	2020	Ayyamperumal. M.	Assistant professor - Aadhiparasakthi college of Agriculture, Kalavai	38,900
7.	2020	Karthikeyan R	Senior Manager, Crystal Crop Protection, Coimbatore	75,000
8.	2020	Suresh kumar R S	National Manager, Rasi Seeds Pvt. Ltd.	3,00,000
9.	2021	Gowthish K	KVK, Chozamadevi	33,000
10.	2021	Amala Hyacinth A M	Assistant Professor, Annamalai University	1,10,000
11.	2021	Baskar M	Managing Director, Pest Control	-
12.	2021	Nisha LN	Assistant Professor, SRS institute of technology, Dindigul	29,800
13.	2022	Ranjith R	Senior Research Fellow, MS Swaminathan Foundation	31,000
14.	June 2022	Pavithradevi P	Assistant Professor, Mother Terasa College of Agriculture	40,000
15.	June 2022	Suhasini V	Assistant Professor, Mother Terasa College of Agriculture	40,000
16.	June 2022	Sankararaman H	Assistant Professor, Vanavarayan Institute of Agriculture, Pollachi	32,000
17.	July 2022	Selvam K	Assistant Professor, SRS institute of technology, Dindigul	29,800
18.	2022	Manikandan, P.	Research Fellow, MS Swaminathan Foundation	28,000
19.	2022	Indhumathi, B.	Assistant Professor, Thanthai Rover Institute of Agricultural and Rural Development	25,000
20.	2022	Athithya, A.	Assistant Professor, Thanthai Rover Institute of Agricultural and Rural Development	25,000
21.	2022	Archunan, K.	Technical Officer, Viruksha Agro Science Pvt. Coimbatore	40,000
22.	2022	Saravanaraman, M.	Assistant Professor, Nalanda Agricultural College, Trichy	32,000



#### 6.4.9 ICT application in curricular delivery

ICT tools are used in handling both theory and practical classes. Smart class room with internet facility (broadband connection and Wi-fi facility), LCD projectors, TV and smart board helps in making the teaching enabled with ICT in the Department.

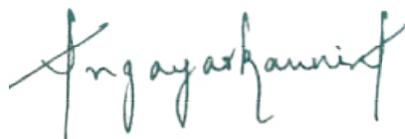
Video facilities available in the Department help us to cast videos on sericulture, apiculture and lac culture. PPTs are designed and up dated regularly to teach the syllabus content in a way to make the students understand better. A web browsing enclave linked computers have access to the UGC Inflibnet portal "SodhSindhu" and "Sodhganga" for literature surveys. Number of computers in use is 15 of which 10 are with networking facility.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.A.ANGAYARKANNI** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
Ph.D. Genetics and Plant Breeding

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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6.4.11	Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.	46
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#### 6.4. Self Study Report for the Programme

**Name of the Programme: Ph.D. in Genetics and Plant Breeding**

**Offered by: Department of Genetics and Plant Breeding**  
**(UGC SAP DRS Phase II & DST FIST supported)**

##### 6.4.1. Brief History of Ph.D. in Genetics and Plant Breeding

The division of Agricultural Botany came into existence mainly to cater the instructional needs of UG degree in the year 1958. Later the division was upgraded as the Department of Agricultural Botany in the Faculty of Agriculture in 1980. The Post graduate programme in Genetics and Plant Breeding was started in the year 1989. The Doctoral degree in Genetics and Plant Breeding was offered from 1992 in the Department of Genetics & Plant Breeding.

Historical Itinerary	Year of Commencement/Period
Division of Agricultural Botany	1958
Ph.D. in Agricultural Botany	1965
The Division was upgraded as Department of Agricultural Botany	1980
M.Sc. (Ag.) in Genetics and Plant Breeding	1989
Ph.D. in Genetics and Plant Breeding	1992
M.Sc.(Ag.) in Seed Science and Technology	2006
The Department was renamed as Department of Genetics and Plant Breeding	2010
Ph.D. in Seed Science and Technology	2010
M.Sc.(Ag.) in Agricultural Biotechnology	2012
Ph.D. in Agricultural Biotechnology	2019
Renamed as M.Sc.(Ag.) in Plant Molecular Biology and Biotechnology	2019
Renamed as Ph.D. in Plant Molecular Biology and Biotechnology	2019
Renamed as M.Sc.(Ag.) in Molecular Biology and Biotechnology; Ph.D. in Molecular Biology and Biotechnology	2022

The Ph.D. degree programme in Genetics and Plant Breeding, has a total of 75 credits (2017-18 to 2020-21) which includes 15 credits for major courses, 45 credits for Ph.D. thesis research, 08 credits for minor courses, 05 credits for supporting courses, 2 credits for seminar along with non - credit compulsory courses.

From 2021-22 onwards a total of 100 credits which includes 12 credits for major courses, 75 credits for Ph.D. thesis research, 06 credits for minor courses, 05 credits for supporting courses, 2 credits for seminar along with non - credit compulsory courses.

### **Vision**

- Leader in preparing plant breeding professionals with skills to provide services to improve the lives of farming community.
- To progress as lead centre to breed crops in marginal environments with greater efficiency for the benefit of the resource-poor farmers.

### **Goals**

- To impart high quality education by reasoning out modern technological advancements.
- Utilization of advancements in plant science techniques to improve crops for greater food and nutritional security in east coast region of Tamil Nadu
- Meeting the demands of ever burgeoning population for food grains by accelerating genetic mechanisms pertinent to the crop.
- To develop improved crop varieties with increased yield, resistance and wider adaptability to changing climate.
- To collaborate with research and development agencies for innovative research projects.
- To become “Centre for excellence” in plant breeding education.

### **Objectives**

- To inculcate knowledge based education on recent advancements in Plant Genetics and modern Plant Breeding practices and to contribute in the development of professionals with sufficient competence and technical knowledge in plant breeding to carry out independent research.
- To impart sound basic knowledge about various plant breeding techniques in field and horticultural crops and to provide emerging technologies in the field of plant breeding.
- Emphasizing the importance of data utilization, genomics, high throughput phenotyping-thus shortening the time frame of breeding cycle in crop improvement and to prospect the under exploited minor crops for potential utilization of their nutritive value.
- Breeding for biotic and abiotic stress tolerance through marker assisted breeding and to identify candidate genes for both saline and flood tolerance suitable for east coast region of Tamil Nadu.
- Collaborative research with ICAR and IRRI for development of region specific mandate crops and to integrate into AICRIP program in mandate crops of Cuddalore district. This will facilitate research based teaching effective.
- Strong research integration with ICAR, UGC, DST, DBT. IIRR, IIOR and IRRI for development of region specific mandate crop varieties.

### Strategic Plan to Achieve Vision and Goal

Goal	Objectives	Implementation plan	Performance Metrics / Timeline	Outcome
To impart high quality education by reasoning out modern technological advancements in Plant Breeding and Genetics	<p>To inculcate knowledge based education on recent advancement on Plant Genetics and modern Plant Breeding practices.</p> <p>To contribute in the development of professionals with sufficient competence and technical knowledge in plant breeding to carry out independent research.</p>	<p>Upgradation of course content periodically.</p> <p>Organizing special lectures and guest lectures.</p> <p>Hands on training on different practical tools of plant breeding</p> <p>Through class seminars and credit seminars</p>	<p>Once in three years.</p> <p>Every semester</p> <p>Every semester</p> <p>Every semester</p>	<p>A periodically updated curriculum adds up to the domain knowledge of the students.</p> <p>Improved presentation skills and interaction skills.</p> <p>Development of student's personality to face the society in future.</p>
Utilization of advancements in plant science techniques to improve crops for greater food and nutritional security in east coast region of Tamil Nadu	<p>To impart sound basic knowledge about various plant breeding techniques in field and horticultural crops.</p> <p>To provide emerging technologies in the field of plant breeding.</p>	<p>Hands on training in discerning the floral biology for identifying respective pollination mechanism.</p> <p>Organizing special lectures and guest lectures.</p> <p>Training session, study tours and exposure in laboratory techniques.</p>	Every semester	Expertise in identifying apt breeding technique for the target crop.
Meeting the demands of ever burgeoning population for food grains by accelerating	Emphasizing the importance of data utilization, genomics, high throughput phenotyping- thus shortening the time frame of breeding cycle	Development of high yielding varieties suitable for Cauvery delta region.	Periodically	Improvement on livelihood of farmers.

Goal	Objectives	Implementation plan	Performance Metrics / Timeline	Outcome
genetic mechanisms pertinent to the crop.	in crop improvement.  Prospecting the under exploited minor crops for potential utilization of their nutritive value.			
To develop improved crop varieties with increased yield, resistance and wider adaptability to changing climate.	Breeding for biotic and abiotic stress tolerance through marker assisted breeding.  Identifying candidate genes for both saline and flood tolerance suitable for east coast region of Tamil Nadu.	Development of abiotic and biotic stress tolerant/resistant varieties.  Advancement of breeding cycle for developing short duration varieties in rice, blackgram, greengram and bhendi.	Periodically	Precision breeding.
To collaborate with research and development agencies for innovative research projects.	Collaborative research with ICAR and IRRI for development of region specific mandate crops.  Integration into AICRIP program in mandate crops of Cuddalore district. This will facilitate research based teaching effective.	Identification of high yielding stable varieties.  Imparting technical know-how to students in screening stable genotypes.	Once in a year	Varietal improvement
To become “Centre for excellence” in plant breeding education	Strong research integration with ICAR, UGC, DST, DBT. IIRR, IIOR and IRRI for development of region specific mandate crop varieties.	To introduce modern breeding tools practiced in National and International Institutes.  MoU with National and International research agencies.	Periodical	Learning current advancements and implementation for speed breeding.  MoU with IRRI for evaluating “Multiple Stress Tolerant Rice Varieties for Tamil Nadu”.

## Accomplishments

### Research Collaborations

- The Department of Genetics and Plant Breeding has collaborated with various National and International agencies such as **IAEA, FAO, IRRI, IIRR, IIOR, and UGC**.
- The department has strong collaboration with **AICRIP (ICAR) and STRASA (IRRI) (saline tolerant breeding network)** programme.
- Faculties of the Department are actively engaged in **IRRI-Annamalai University (IRRI-AU) MoU on “Multiple Stress tolerant Rice Varieties for TamilNadu”** involving extensive evaluation of elite **Green Super Rice (GSR) lines** since 17.06.2020.

### Research Fundings

The research environment of the Department got boosted up by funds from

- ✓ **UGC-SAP DRS Phase I & II (102.5 lakhs)**
- ✓ **DST FIST (Rs. 38 lakhs)**
- ✓ **Non-SAP (10 lakhs)**
- ✓ **RUSA (10 lakhs) and**
- ✓ **TNSCST.**
- ✓ **RGNF.**
- ✓ **Fly Ash mission from NLCIL.**

### Research Outcomes

- Standardized hand emasculation and pollination method for hybrid seed production in Sesame is a major outcome of FAO/IAEA research project.
- Annamalai Melon.
- AU-1 rice are the notable contributions of the department.
- Annamalai Brinjal (National Aphid resistant check variety), a popular and major cultivated variety in Cuddalore district of Tamil Nadu.
- AU-1 GSR (Green Super Rice), an elite high yielding, multiple stress tolerant rice variety was released during December, 2020. It is cultivated in the districts of Nagapattinam, Mayiladuthurai, Cuddalore, Villupuram, Kallakurichi, Thiruvallur, Salem, and Madurai.
- Seed pelleting techniques for sesame, green gram and black gram using fly ash was developed through DST Project.
- Sesame seed hardening technique chicory medicinal herb extract was developed through UGC - MRP project
- Seed halogenation technique for sesame seed storage through TNSCST project
- Seed hardening techniques for paddy, Greengram and brinjal.
- SSR marker techniques for varietal identification.
- Standardized Bio pelleting using *Prosopis* spp.
- Standardization of tissue culture techniques for sesame, green gram and black gram was developed through DST Project.

- Black gram genotypes resistant to YMV was screened using molecular tools through UGC-GDA-XII plan innovative Research project.

### Achievements by Faculty

- Dr. C.N. Sambandam an eminent vegetable breeder and the first Head of the Department spearheaded the release of Annamalai Brinjal.
- Dr. S. Thirugnanakumar's Doctoral research scholar Dr. R. Narasimman received **Jawaharlal Nehru Post Graduate Research Award from ICAR.**
- Dr. A. Anandan went for hands-on training at **International Rice Research Institute (IRRI), Philippines.**
- Dr. R. Eswaran had undergone training at **Ghent University, Belgium**
- Dr.S.Murugan was invited as **Visiting Professor** by the Dept. of Horticulture, **North Carolina State University, U.S.A.**
- Dr. S. Murugan was invited as **Visiting Scholar/Researcher** by the **Biomedical Sciences Research Institute, Ulster University, UK.**
- Dr. M. Prakash, Professor served as **UGC-SAP Co-Ordinator** for DRS Phase I and II.
- Dr. S. Murugan, Professor served as **UGC-SAP Deputy -Coordinator** for DRS Phase I and II.
- Dr. M. Prakash, Professor is currently serving as **Controller of Examinations**, Annamalai University since, Januaray, 2022.
- Dr. S. Murugan, Professor is serving as **Joint-Director, Directorate of Research and Development (DRD)**, Annamalai University.
- Dr. S. Padmavathi, Professor is serving as **Academic Council Member**, Annamalai University from 2022 onwards.
- Dr. K. Saravanan, Professor is serving as **Faculty Co-Ordinator, IQAC Cell, Faculty of Agriculture** from 2020 onwards.
- Dr.T. Sabesan, Associate Professor is serving as **Deputy Director, Center for Alumni Relations**, Annamalai University since 2019.
- Dr. M. Venkatesan Associate Professor is serving as **Nodal-Officer, Disability Cell**, Annamalai University.
- Dr. S. Vennila, Assistant Professor is serving as **Associating Scientist, Center for Natural Farming and Sustainable Agriculture.**
- **IRRI-AU MoU Team of Department of Genetics and Plant Breeding include Dr. K. Saravanan, Dr. T. Sabesan, Dr.R.Elangaimannan and Dr. B. Sunilkumar as lead plant breeders.**
- **"AU-1 GSR"** – A multi stress tolerant rice variety was released by IRRI-AU MoU Team of Department of Genetics and Plant Breeding.

The faculties also visited various countries and attended research oriented conferences and workshops. They are also actively involved in professional development activities by becoming members in various professional bodies and published research articles in various peer reviewed and high impact factor journals. The majority of the Staff in this discipline has qualified the National Eligibility Test.

**Departmental Research Metrics :**

Topic	Metrics	Source
'h' Index	11	IRINS, AU
i 10 Index	7.9	Google Scholar
Cross-Ref Citations	338	IRINS, AU
Total Citations	747	IRINS, AU

**Special Lectures**

- Dr.V. Vijayakumar, Eastern Connecticut State University, USA
- Prof. C. Ramasamy, Former Vice Chancellor (TNAU), Coimbatore.
- Dr. K.K.Vinod, Principal Scientist, IARI, Regional Centre, Aduthurai.
- Dr. R. Vijayaraghavan, Dean, Adhiyaman College of Agriculture and Research, Krishnagiri.
- Dr.Mohan Andrew Savery, Senior Rice Breeder, KVK, Puducherry
- Dr. M. Subramanian, Former Director of Research, TNAU
- Dr.MuraliGopal, Principal Scientist, ICAR- Central Plantation Crops Research Institute, Kerala.
- Dr. S. Thirumeni, Professor& Head, PAJANCOA, Karaikal.
- Dr.J. KannanBapu, Former Registrar, TNAU
- Dr.Muralidharan, Director, Indian Institute of Pulses Research
- Dr. M. Mageswaran, Director, CPBG, TNAU
- Dr.N. Nadarajan, Professor, Tamil Nadu Agricultural University.
- Mr.UmakanthDubey, Deputy Registrar, PPVFRA, New Delhi
- Ms. Subashini Sridar, Centre for Indigenous Knowledge Systems (CIKS)

**International and National Seminars/Conferences/Workshops - Organised (2017-2022)**

Topic	Metrics
<b>International Conference</b>	01
<b>National Seminar/Conference/Webinars</b>	09
<b>National/Workshop</b>	08

The department successfully organized the first policy meeting on “National Consultation Workshop on Agro-biodiversity Hotspots and Access and Benefit Sharing” of National Biodiversity Authority (NBA) and PPVFRA.

In March, 2018 the department successfully organized the Plant variety protection Awareness programme for Farmers under the aegis of PPVFRA.

### Research Publications and Books (2017-2022)

Journal Articles	302
Books & Book Chapters	91

ICAR has recommended two books namely, “A Text book of Seed Science and Technology” “Quantitative Genetics and Crop Breeding” authored by Dr. S. Thirugnanakumar and Co-authors as well as Dr. S. Padmavathi and Co authors for the aspirants of PG and Ph.D. courses in ICAR and affiliated colleges.

### Student Progression

Students are constantly motivated to take up national level competitive examinations like National Eligibility Test, ARS and were guided through coaching classes with supporting books. The Department is striving hard to produce excellent researchers with outstanding skill sets. The faculty members periodically organize Seminars, Trainings and workshops to impart knowledge on recent development in crop improvement.

Thrust has been given to impart knowledge to students on various aspects of Genetics and Plant Breeding at Doctoral level. This ultimately encourages the students to improve their competing ability to express their ability in the competitive examinations. Additionally, coaching classes are being conducted to make the students, facing competitive world. This enables the students to secure placements in World Class coveted overseas institutions, most often with full-funding.

Remedial classes are being offered for slow learners for easy understanding and enhance their performance. By taking Guest lectures with renowned scholars, the knowledge and recent trends of the subjects are being updated.

### Alumni Support

Alumni of the Department placed in SAUs, ICAR Institutions, International Institutes, and Private Sectors act as a major driver of growth providing technical guidance, essential infrastructure, CSR funding and placement.

The alumni donations has resulted in realizing the Dr. C.N. Sambandam Hi-Tech Presentation Hall.

### Departmental Endowment Awards for Students

The six endowment awards, instituted decades back, to provide impetus for students to excel in the various facets of M.Sc. in Genetics and plant Breeding, are listed below.

Sl. No.	Name of the Endowment award/medal
1.	Dr. M.S. Swaminathan endowment gold medal for top ranking student
2.	Shri. V.S. Ramalingam Pillai Gold medal for Plant Breeding and Genetics
3.	Vallalar Endowment prize
4.	Dr. V. Sivasubramanian endowment Gold medal for Quantitative Genetics
5.	Dr. V. Sivasubramanian endowment Gold medal for Best Research in Genetics and Plant Breeding
6.	SrilochaniVaradarajan endowment for top ranking student

### Department Snapshot

Category	Total period	Last five year period (2017-2022)
Number of Publications (Journal articles)	883	345
Number of Publications (Seminars/Conferences/Symposia)	240	80
Number of Books & Book Chapters	161	22
Numbers of Projects obtained	30	11
Grants Mobilization (Lakh rupees)	343.13	194.26
Number of Ph.Ds. Produced	66	5
Number of PGs Produced	503	112
Number of Seminars/Conference/ Webinar/ Training program/Workshops organized	32	18

#### 6.4. 2. Faculty Strength

The permanent faculty strength appointed in the Department of Genetics and Plant Breeding is furnished below.

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
1.	Professor*	9	9	-	1
2.	Associate Professor*	10	10	-	1
3.	Assistant Professor*	12	12	-	3
	<b>Total</b>	<b>31</b>	<b>31</b>	<b>-</b>	<b>5</b>

\*Assigned responsibilities for multiple programmes



### Credentials of the Faculty

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94	747		
1.	Dr. S. Padmavathi © Professor and Head	26	Hybrid seed production, Seed Treatment techniques	19	3	20	3	1	6	3	114
2.	Dr. M. Prakash ©# Professor	26	Stress Physiology and plant Molecular Biology	25	8	72	15	6	17	31	1142
3.	Dr. S. Murugan *# Professor	26	Cytogenetics, Heterosis Breeding, Molecular Plant Breeding, Molecular marker technology	15	3	50	9	2	9	9	242
4.	Dr.S.Thirugnanakumar * Professor (Retired on 30.06.2022)	26	Molecular genetics, Biotechnology, Mutation Breeding, Recombination breeding	28	7	90	5	2	11	11	296
5.	Dr. P. Senthil Kumar *# Professor	24	Heterosis Breeding, Sesame Breeding, Musk melon breeding, Molecular marker	22	3	31	-	2	13	16	512

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
			technology								
6.	Dr. Y. Anbuselvam * Professor	26	Genetics and Cytogenetics, Biometrics, Biotechnology	23	6	56	10	2	11	12	313
7.	Dr. P. Thangavel * Professor	25	Biometrics, Genetics and Pulse Breeding	18	1	57	3	1	9	9	248
8.	Dr. K. Saravanan * Professor	24	Quantitative Genetics, Biometric analysis	18	4	98	4	3	15	27	1001
9.	Dr. N. Senthil Kumar * Associate Professor	22	Heterosis Breeding in Vegetables	15	3	72	19	9	8	6	231
10.	Dr. Y. AnithaVasline * Associate Professor	22	Mutation Breeding, Cytogenetics	15	1	29	8	4	7	3	89
11.	Dr. B. Sunil Kumar *# Associate Professor	20	Physiological and Molecular genetics in Pulses	11	1	61	6	4	14	30	1310
12.	Dr. J. Gokulakrishnan * Associate Professor	21	Heterosis Breeding in Rice & Maize	13	2	43	10	6	7	6	169
13.	Dr. R. Elangaimannan *# Associate Professor	21	Heterosis Breeding, Biometrics,	13	1	43	10	3	6	6	188

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)
				PG	PhD		Journal	Others			
							11	7.94	747		
			physiology & Plant Biotechnology								
14.	Dr. T. Sabesan *# Associate Professor	20	Heterosis breeding, and Molecular Plant Breeding for Abiotic stress.	11	-	61	18	8	13	16	615
15.	Dr. V. Anbanandan * Associate Professor	18	Sugarcane Breeding, Rice Breeding	7	-	33	9	2	5	2	98
16.	Dr. GSathiyarayanan © Associate Professor	19	Seed Halogenation. Hybrid seed production	16	-	90	29	2	8	6	222
17.	Dr. S. Ezhil Kumar © Associate Professor	19	Molecular Varietal identification, Seed Production and Seed Testing.	15	-	21	5	2	2	1	20
18.	Dr. P. Karthikeyan * Associate Professor	17	Rice Saline Tolerant	7	-	46	9	3	6	5	171
19.	Dr. M. Venkatesan * Associate Professor	17	Rice Breeding, Innovative Breeding, Hybrid rice	10	-	57	9	2	9	9	241

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
							11	7.94	747		
20.	Dr. R. Ebneezer Baburajan * Associate Professor	19	Heterosis Breeding, Resistance Breeding	6	-	34	19	4	3	1	36
21.	Dr. R. Eswaran ** Assistant Professor	19	Heterosis Breeding, Molecular Breeding	12	-	63	22	5	13	15	503
22.	Dr. C. Praveen Sampath Kumar ** Assistant Professor	18	Heterosis Breeding in Bhendi	10	-	73	19	3	8	7	188
23.	Dr. J.L. Joshi ** Assistant Professor	16	Heterosis Breeding in Bhendi	8	-	43	11	2	2	1	31
24.	Dr. R. Anandan # Assistant Professor	16	Plant Molecular Biology and Biotechnology	8	-	33	5	1	8	6	224
25.	Dr. K.R. Saravanan ** Assistant Professor	16	Screening genotypes for saline Ecosystem	12	-	72	21	4	5	1	58
26.	Dr. S. Vennila *© Assistant Professor	16	Mutation Breeding, Cytogenetics	8	-	43	27	5	5	3	75
27.	Dr. S. Suganthi *© Assistant Professor	16	Recombination Breeding, Crop Diversity Analysis	8	-	41	26	4	5	3	105

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94	747		
28	Dr. S. RanjithRajaram * <sup>©</sup> Assistant Professor	14	Rice and Sesame Breeding	8	-	31	24	3	5	2	72
29.	Dr. A. Kamaraj <sup>©</sup> Assistant Professor	13	Pre sowing seed enhancement treatment, Seed testing	7	-	34	18	2	3	2	58
30.	Dr. P. Satheesh Kumar * <sup>©</sup> Assistant Professor	13	Heterosis Breeding, Mutation Breeding.	7	-	50	18	4	6	4	160
31.	Mr. V. Arivoli * Assistant Professor	12	Recombination Breeding	-	-	0	-	-	-	-	-
32.	Dr. R. Narayanan * <sup>©</sup> Assistant Professor	12	Recombination breeding, Mutation Breeding	7	-	15	8	2	2	1	23

\* - Genetics and Plant Breeding, <sup>©</sup>- Seed Science and Technology, # - Molecular Biology and Biotechnology

## List of Project Handled - Last five years

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
1.	Screening Bhendi genotypes ( <i>Abelmoschus esculentus</i> (L.) moench) (rice fallow) for resistance to yellow vein mosaic virus disease combined with high yield Suitable for Coastal Ecosystem.	N. Senthil Kumar	2013-2017	UGC	15.42
2.	Exploitation of medicinal herbs to alleviate moisture stress and enhancing yield potential in sesame ( <i>Sesamum indicum</i> L) under rainfed condition through molecular approach	Dr. G. Sathiya Narayanan Dr. B. Sunil Kumar Dr. R. Anandan	2013-2017	UGC	7.95
3.	DST -FIST	Dr. S. Murugan	2013-2018	DST	38.00
4.	Development of stress tolerance varieties for coastal regions of TamilNadu in mandate crops (UGC SAP DRS Phase II)	Dr. M. Prakash Dr. S. Murugan	2015-2020	UGC	102.50
5.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic back ground of Black gram ( <i>Vignamungo</i> (L.)	Dr. S. Murugan Dr. M. Prakash Dr. R. Anandan Dr. J. Gokulakrishnan	2016 -2017	UGC	1.25
6.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic backgrounds of blackgram ( <i>Vignamungo</i> L.) (DST PURSE Phase II)	Dr. S. Murugan	2018-2021	DST-PURSE	5.00

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
7.	Green Super Rice for TamilNadu: Assessing multiple abiotic and biotic stress tolerance and yield potency under varying environment for sustaining production and ensuring nutritional integrity	Dr. R. Elangaimannan Dr. K. Saravanan Dr. T. Sabesan Dr. B. Sunilkumar Dr. S. Murugan	2021-2023	RUSA	10.00
8.	Technology development for biofortification through micronutrients and bioactive compounds for protection and enhancement of human health in coastal ecosystem	Dr. Elayaraja Dr. N. Senthilkumar	2022-2024	RUSA	10.13
<b>TOTAL (A)</b>					<b>190.25</b>
<b>Private Sector Projects</b>					
Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
1.	Efficacy trials with Modulin on the expression ,growth ,development and yield of rice crop	Dr. G. Barathan Dr. S. Murugan	2016-2017	T-Stanes and company Ltd.,Coimbatore	2.10
2.	Evaluation of Methyl violet Dye in the formulation of Carboxin 37.5% +Thiram 37.5% WS on groundnut.	Dr. T. Sabesan	2018 - 2019	Arysta Life Science, Mumbai	0.91
3.	Digitalization of data on Crop cultivation practices of major Agricultural and Horticultural crops	Dr. S. Murugan	2018-2019	Bayer crop Science	1.00
<b>TOTAL (B)</b>					<b>4.01</b>
<b>TOTAL A+B</b>					<b>194.26</b>

## Awards/Recognitions/States &amp; Countries visited by Faculty

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
1	Dr.S.Murugan	Visiting Professor, North Carolina State University (2017) Fellow of Indian Society of Genetics and Plant Breeding, New Delhi	U.S.A , Water melon and cucumber breeding, North Carolina State University, U.S.A
2	Dr. G. Sathyanarayanan	Excellence in Research Award (2017)	S & T SIRI, Telangana
3	Dr. M. Prakash	Best research publications award, 2012-2017. J JChinoy Gold Medal Award- Indian Society of Plant Physiology, 2017. Fellow - Indian Society of Plant Physiology, New Delhi, 2015. (FISPP). Fellow - National Academy of Biological Sciences, Chennai. 2016 (FNABS).	
4	Dr.S.Thirugnanakumar	Fellow of Indian Society of Oil Seed Research, Fellow of HIND AGRI-HORT Society. ICAR Citation for best Thesis award 2007 Dr.Kannaiyan endowment - Best researcher award -2018	
5	Dr.R. Anandan	Best oral presentation award (2017)	National Conference on Innovations in Biotechnology at Madurai Kamaraj University during 14 <sup>th</sup> & 15 <sup>th</sup> Dec., 2017.
6	Dr. T. Sabesan	Editorial Board Member (2017 onwards)	Journal of Innovative Agriculture (eISSN: 2394-5389)
7	Dr. R.Eswaran	Summer course on "Modern Breeding Techniques for the Improvement of leguminous plants" (2017).	Institute of plant biotechnology for developing countries , Ghent University , Belgium
8	Dr. K.R. Saravanan	Scientist of the year award (2018)	ICFA, Jharkand
9	Dr. K.R. Saravanan	Outstanding Breeder Award (2019)	PRAGATI, Jharkand
10	Dr. S. Murugan	Member, Panel of Examiners, TamilNadu Public Service Commission (TNPSC) ( 2019)	

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
11	Dr. T. Sabesan	Confidential work at TamilNadu Public Service Commission (TNPSC), Chennai (2019)	(TNPSC), Chennai
12	Dr. M. Venkatesan	Best Oral Presentation award (2019)	University of Hyderabad
13	Dr. S. RanjithRajaram	Best Oral Presentation (2019)	PRAGATI, Jharkhand
14	Dr.T.Sabesan	Best paper Award (First Place) in the session Genetics (2020)	In the 6 <sup>th</sup> National Conference in Agricultural Scientific Tamil held International Institute of Tamil Studies, Chennai during Dec 21-22, 2020.
15	Dr.B. SunilKumar	Outstanding Scientist Award (2018)	Conferred by the Society of Tropical Agriculture, New Delhi
16	Dr. G. Sathyanarayanan	Best Researcher Award (2020)	ICEACBS, Puducherry
17	Dr. M. Venkatesan	Best Scientist Award (2020)	ICEAACBS, Puducherry
18	Dr. S. Thirugnanakumar	Editorial member for the journal “Advances in Plant Sciences”	
19	Dr. T. Sabesan	Reviewer Excellence Certificate (2020)	<i>ActaEcologicaSinica</i> (Elsevier), Agricultural Science Digest (ARCC)
22	Dr. S. RanjithRajaram	Academic Excellence Award (2021)	Institute of Researchers, Wayanad, Kerala
23	Dr. M. Venkatesan	Best Teacher Award (2021)	Global Management Council, Ahmadabad
24	Dr. Y. Anbuselvam	Reviewer Excellence Award (2021)	ARCC Journal
25	Dr. T. Sabesan	Excellence in Reviewing (2022)	International Journal of Plant & Soil Science
26.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Asian Journal of Biotechnology and Genetic Engineering
27.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Current Journal of Applied Science and Technology
28.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	International Journal of Environment and Climate Change
29.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	Annual Research and Review in Biology

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
30.	Dr. S. Vennila	Best Oral Presentation (2018)	Dept. of Genetics and Plant Breeding, Faculty of Agriculture, Annamalai University
31.	Dr. S. Vennila	Best Oral Presentation (2020)	Dept. of Plant Pathology, Faculty of Agriculture, Annamalai University
32.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University
33.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Agrl. Extention, Faculty of Agriculture, Annamalai University
34.	Dr. G. Sathiyarayanan	Best Poster Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University

### 6.4.3. Technical and Supporting staff

The technical and supporting staff of the Department of Genetics and Plant Breeding is given below

The technical and supporting staff of the Department of Genetics and Plant Breeding is given below

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Assistant*	4	4	-	1
2.	Lab assistant*	4	4	-	2
3.	Field assistant*	5	5	-	2
	<b>Total</b>	<b>13</b>	<b>13</b>	<b>-</b>	<b>5</b>

S. No.	Sanctioned post	Staff in place	Responsibilities
1.	Supporting Staff*	4	<ul style="list-style-type: none"> <li>Assisting in Data processing and documentation.</li> <li>Maintenance of office files and official records.</li> <li>Execution of purchase and settlement of bills.</li> <li>PG and Ph.D admissions work</li> <li>UG, PG and Ph.D Examination works</li> <li>Computer typing works.</li> </ul>
2.	Technical Staff* (Department)	4	<ul style="list-style-type: none"> <li>Assisting laboratory classes.</li> <li>Supervision of labourers</li> <li>Maintenance of stock registers.</li> </ul>
3.	Technical Staff* (Research)	3	<ul style="list-style-type: none"> <li>Layout of field trials.</li> <li>Supervision of labourers</li> <li>Maintenance of stock registers.</li> </ul>
4.	Field Staff*	2	<ul style="list-style-type: none"> <li>Layout of field trials.</li> <li>Recording of research trial observations.</li> </ul>

\*Assigned responsibilities for multiple programmes

#### 6.4.4. Classrooms and Laboratories

Sl.No.	Abstract of Facilities	Numbers
1.	HOD Room	1
2.	Office Room	1
3.	Staff Rooms	5
4.	UG Laboratories	3
5.	PG Lecture Halls	3
6.	Ph.D. Lecture Halls	3
7.	Field Demonstration Hall	1
8.	PG & Ph.D. Laboratories	5
9.	Department Library	1
10.	Hi-Tech Hall	1
11.	Pot Culture Yard	3
12.	Plant Breeding Experimental Farm (Field No. 13,14,15 & 16)	4

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
1.	HOD Room	1	(15x9.7) 145.5	1	-
2.	Office Room	1	(16x9.7) 155.2	3	-
3.	Staff Room-1	1	(17.8x9.2) 163.76	2	-
4.	Staff Room-2	1	(17.8x9.2) 163.76	3	-
5.	Staff Room-3	1	(17.8x9.2) 163.76	3	-
6.	Staff Room-4	1	(17.8x9.2) 163.76	3	-
7.	Staff Room-5	1	(31.5x19.4) 611.1	13	-
8.	UG Laboratory-1	1	(30x36.2) 1086.75	50	OHP projector, LCD television, monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
9.	UG Laboratory-2	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
10.	UG Laboratory-3	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
11.	PG Lecture Hall (Genetics & Plant Breeding)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like LCD projector and Smart TV.
12.	PG Lecture Hall (Seed Science & Technology)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like Smart TV

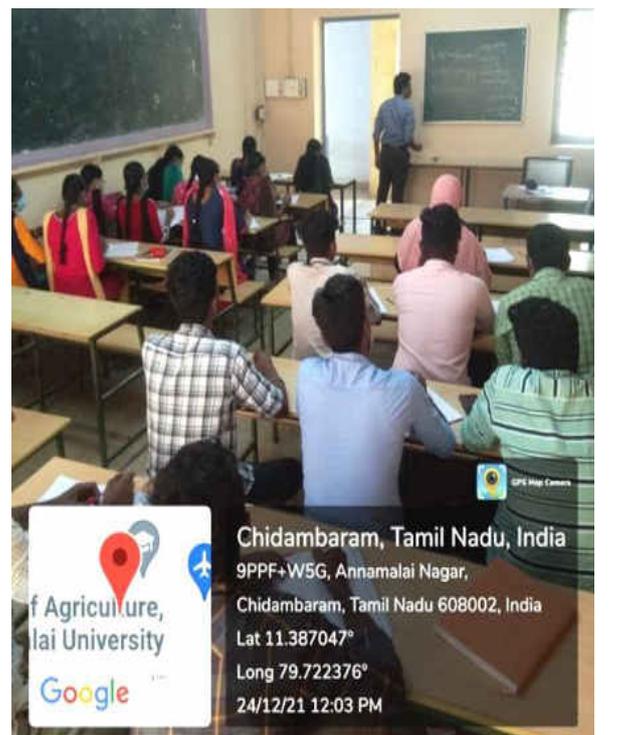
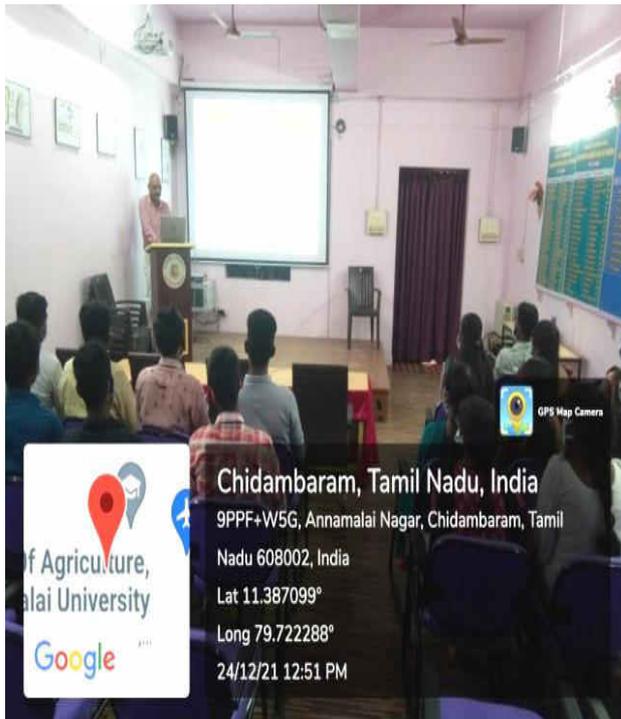
Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
13.	PG Lecture Hall (Molecular Biology & Biotechnology)	1	(30x12.73) 381.98	10	Smart class rooms are available with facilities like LCD projector (Smart board) and Smart TV
14.	Ph.D. Lecture Hall (Genetics & Plant Breeding)	1	(19.8x11) 220	10	Class rooms are available with Smart TV facility.
15.	Ph.D. Lecture Hall (Seed Science & Technology)	1	(19.8x11.6) 229.6	10	Class rooms are available with Smart TV facility.
16.	Ph.D. Lecture Hall (Molecular Biology & Biotechnology)	1	(17.8x9.2) 163.7	6	Class rooms are available with Smart TV facility.
17.	Field Demonstration Hall	1	(30x20) 600	30	For Practical classes
18.	Cytology & Cytogenetics Laboratory	1	(26.5x20) 530	20	The laboratory is equipped with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber).
19.	Seed technology Laboratory	2	(15x6.2) + (15x6.2) 94+94	5+5	The laboratory is equipped with seed technological instruments like seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
20.	Plant Tissue culture Laboratory	1	(10x8) 80	5	Plant tissue culture laboratory is equipped with laminar air flow chamber, autoclave and incubator, mini thermo cycler, electronic weighing balance, gel documentation chamber.
21.	Molecular Biology Laboratory	1	(30x11.3) 339	7	Molecular biology laboratory is equipped with major instruments like BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-8 transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge
22.	Department Library	1	(30x22) 660	25	The Department Library is provisioned with 612 text and reference books, PG and Ph.D. thesis, National and International journals, conference proceedings and volumes, 20 project reports.
23.	Dr. C.N.Sambandam Hi-Tech Hall	1	(30x22) 660	50	Hi-Tech presentation hall
24.	Pot Culture Yard-GPB	1	0.03 ha	-	To conduct preliminary evaluation trials and seed multiplication.
25.	Pot Culture Yard-SST	1	0.03 ha	-	To conduct preliminary trials and germination studies.
26.	Pot Culture Yard-PMBB	1	0.03 ha	-	For hardening and to conduct preliminary trials.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
27.	Plant Breeding Experimental Farm-Field no.13	1	0.73 ha.	-	Conducting trials for post graduate students and AICRIP trials
28.	Plant Breeding Experimental Farm-Field no.14	1	0.58 ha.	-	Conducting trials for post graduate students and AICRIP trials
29.	Plant Breeding Experimental Farm-Field no.15	1	0.80 ha.	-	Conducting trials for post graduate students and AICRIP trials
30.	Plant Breeding Experimental Farm-Field no.16	1	0.69 ha.	-	Conducting trials for post graduate students and AICRIP trials

**Instrument Facilities:**

S.No	Items	Nos.
1.	Dissection Microscope	46
2.	Compound Microscope	10
3.	Electronic Moisture Meter	2
4.	Electronic Balance	4
5.	Seed Germinator	2
6.	Automatic seed / Grain counter	1
7.	Hot air Oven	1
8.	BOD Incubator	1
9.	Fluorescence Microscope	1
10.	Centrifuge	3
11.	Growth Chamber	2
12.	Distillation Assembly	1
13.	PCR	3
14.	Gel document	2
15.	P <sup>H</sup> meter	2
16.	Orbital Shaker	1
17.	Photo synthetic meter	1
18.	Water Potential meter	1
19.	Electrophoresis	4
20.	Deep Freezer	3
21.	Refrigerator	2
22.	UV Nano spectrophotometer	1
23.	Sequencing Gel apparatus	1
24.	Ultra sonicator	1
25.	Desiccator	1
26.	Laminar Airflow chamber	2
27.	Autoclave	1
28.	Micro Air oven	2
29.	Water Bath	2
30.	Vaccum emasculator	1
31.	Triers	4
32.	Seed - Dividers	3
33.	Seed Blower	1
34.	Purity Working Board	4
35.	Seed Pelleting machine	1



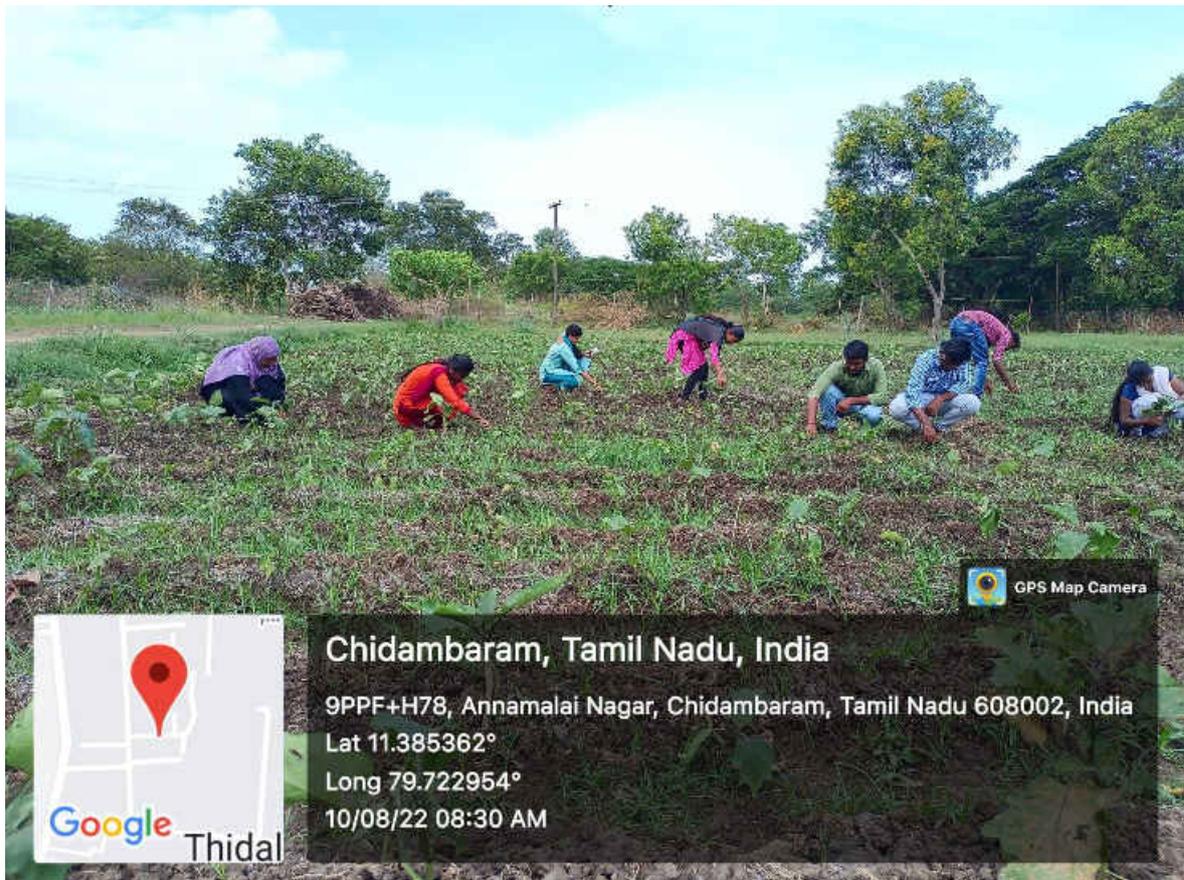
**6.4.5. Conduct of Practicals and Hands-on-Trainings**

Course	Practicals / Hands-on training	Laboratory / Field Visits
Molecular and Population Genetics	Study of various types of microscopes.	Visit to Central Instrumentation Laboratory of Annamalai University for exposure about Electron Microscopy, SEM, TEM etc.
	Fixing specimen for cytology works.	Visit to Cytology Laboratory, Department of Botany, Annamalai University.
	Stages of cell division in onion and rice.	Experimental designs for breeding trials. They are taught to practice Cytogenetic Techniques and technical knowhow on the research methodology followed.
	Study of chromosome structure	The students have been trained in microscopy and dissection of plant specimens. Students are also encouraged to attend National and International seminars and symposiums.
Advances in Plant Breeding systems and Hybrid Seed Production Technology	Exposure about various pollination systems in crop plants	Hands on training imparted to students on the basic tools of plant breeding.
	Emasculation and pollination techniques in field & horticultural crops.	Students are also taken to research stations like TRRI, Aduthurai Horticultural Research Station, Palur, for direct exposure to basics of variety development programmes.
	Hybrid seed production techniques.	
	Screening methods – laboratory and field – for biotic and abiotic stresses.	
Breeding Designer Crops	Exposure about importance of anthesis time.	Students are also taken to different research stations like TRRI, Aduthurai, RRS, Virudachalam, SBI, Cuddalore, Horticultural Research Station, Palur, ORS, Tindivanam etc. and Rasi Seeds Pvt Ltd, Salem for direct exposure to variety development programmes.
	Types of isolation and its impact.	
	Emasculation and crossing techniques in major field and horticultural crops	
Advances in Biometrical Genetics	Experimental designs for breeding trials.	Hands-on data analysis using software's like AGRES, GENRES, NPRC-STAT, IRRI-STAT, STAR, PBTools, SPSS, Windo-Stat, TNAU-STAT
	Data analysis using various softwares.	

Genomics in Plant Breeding	Preparation of buffers, reagents, media etc.,	Students are being taught with basic analytical chemistry and knowhow regarding normality, molarity, equivalent weight, and molarity for preparations of buffers / reagents / media / plant growth regulators which are frequently used in several molecular biology techniques
	Extraction of DNA	Students are given hands on experience in DNA extraction of Rice, blackgram, sesame and banana by following CTAB method
	Gel electrophoresis & autoradiography	Students are trained on agarose gel electrophoresis and autoradiography for DNA extracted from plants
	Agrobacterium-mediated & direct gene transfer	Students are demonstrated with gene gun and <i>Agrobacterium</i> mediated transformation using <i>cry1ACF</i> gene
Plant Genetics Resources, Conservation and Utilization	Wild species of various crops.  Plant genetic resources.	Students were exposed about the necessity and use of germplasm collections. Visit to <i>in vivo</i> crop gene banks maintained by progressive farmers. Study tours. Role of National/International agencies and the need of SMTA.
Crop Physiology	Growth Parameters	Practicals on various physiological growth parameters such as RGR, LAI, NAR.
	Photosynthesis and respiration	Use of LiCOR Portable Photosynthetic Meter.
	Cycles of growth	Animations
Research	Breeding for high yield, abiotic/biotic stress tolerance and quality characters in crops like rice, blackgram, greengram, brinjal, sesame, bhendi, cotton, chillies etc.	Collection of germplasm from NBPGR, New Delhi, IIHR, Bangalore, RRS, TNAU SAUs, and progressive farmers etc.



Crossing Block – Samba, 2021





### Study Tours / Industrial Visits

Students are also taken to different research stations like

Sl. No.	Place of Visit	Year
1	Kerala Agricultural University	2022
2	CTCRI Kerala	2017, 2022
3	Rajiv Gandhi Center for Biotechnology and Botanical Garden, Trivendrum, Kerala	2017, 2022
4	Dr. S. Thirugnanakumar, Coimbatore,	2022
5	Central Instrumentation Laboratory, Annamalai University	2017, 2018, 2022
6	NRCB, Trichy,	2022
7	IICPT, Tanjore,	2017, 2018,
8	Rasi seeds,	2022
9	Maha seeds.	2022
10	Plant Quarantine Centre, Trichy,	2022
11	Indian Institute of Pulse Research, Vamban,	2022
12	Regional Research Station, Aduthurai,	2017, 2022
13	State Seed Farm, Vandrayanpattu,	2022
14	KVK, Pondicherry	2022
15	PAJANCOA, Karaikal.	2017, 2018, 2022

#### 6.4.6. Supervision of students in Ph.D.programme

##### Research Advisory Committee (RAC)

Each Ph.D. scholar shall have a Research Advisory Committee(RAC) to guide the scholar in carrying out his/her programme.

A Research Advisory Committee shall be constituted with the approval of the University for each candidate separately, immediately after his/her admission. The purpose of the RAC is to provide expert opinion on frontline research.

There shall be a Research Advisory Committee for every scholar consisting of not fewer than four with the Supervisor as Chairperson. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director DARE for information.

##### Research Supervisor:

Every scholar shall have a Research Supervisor (among the recognized guides), who will be appointed by the Vice-Chancellor on the recommendation of the Head of the Department and the Dean, Faculty of Agriculture. Research supervisors approved by the Vice-Chancellor only can be the guide for the scholars.

A teacher having Ph.D. with 5 years of service and PG teaching is eligible for teaching and guiding Ph. D. scholars. A teacher should have a minimum of three years of service before retirement for allotment of doctoral candidates.

The research supervisors who wish to avail leave/lien/deputation beyond a period of six months shall propose a Co-Supervisor in the concerned subject for the candidates registered with them and it may be intimated to the University well in advance. The final approval of the proposal rests with the Vice-Chancellor.

**Functions of the RAC:**The Research Advisory Committee shall have the following functions:

- Discuss, advice and recommend on all matters connected with the scholar's research from admission till the submission of the thesis.
- Approve the topic of research and the synopsis.
- Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D.
- If necessary, recommend and approve change of title of dissertation / thesis and change of Research Supervisor.
- Conduct and supervise the presentation by the candidate of the final draft of his/her proposed thesis for approval before the submission of synopsis of the thesis to the University and to give a certificate to this effect to be submitted along with the synopsis.
- The Research Advisory Committee will meet every semester.
- To scrutinize the research proposal / progress report submitted by the research scholar.
- To assess the conduct of experiments / field work, peruse laboratory notebooks, data recording, analysis, and publication.
- To review and endorse the annual progress report of the research scholar.
- To approve the synopsis of the thesis.
- The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department.

**Changes in RAC:**The proposals for changes in the RAC are to be sent to the Director, DARE, through HOD and Dean for approval, if it is keenly felt that such changes are absolutely necessary.

### **Change of Research Supervisor**

Change of Research Supervisor shall not be permitted as a routine. In exceptional cases, such change may be permitted, if valid reasons are provided by the candidates. The Committee headed by the Vice-Chancellor shall look into the request of the petitioner, if there is any conflict between the scholar and the research supervisor.

The Research Supervisor under whom the scholar has originally registered shall give a "No Objection Certificate" and the new proposed Research Supervisor should give a "Certificate of Willingness" to guide the candidate. The final decision will rest with the University. However, the Vice-Chancellor, on the recommendation of the RAC and Dean's Committee, has the right to assign a new research supervisor to the research scholar.

When the change of Research Supervisor is approved, the candidate shall work for a minimum of one year with the new Research Supervisor, if the topic of his/her research is different under the new supervisor, provided he/she fulfils the attendance requirements.

### **Change of Topic of Research**

Change of the specific area of research may be permitted within one year from the date of admission and request must be submitted with the recommendations of the RAC. In such cases, the minutes of the RAC meeting must include whether the course work undertaken by the research scholar is relevant to the new research area and the competence of the research supervisor in this field.

If the RAC is of the view that there is a major change in the specific area of research and is not relevant to the course work undertaken, the research scholar will have to go through the process of fresh examination pertaining to the area of research.

### **Absence of Member during Qualifying / Final Viva-Voce Examination**

Under extra-ordinary circumstances if the qualifying / final viva-voce examination to Ph. D. scholar has to be conducted in the absence of one or two RAC members, permission to conduct the examination by co-opting another member in such contingencies should be obtained from the Director, DARE in advance.

### **EVALUATION OF SCHOLAR'S PERFORMANCE**

All scholars shall abide by the rules for evaluating the course work under the semester system of education, as prescribed from time to time by the University.

### **QUALIFYING EXAMINATION**

Only those scholars who successfully complete the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of only *Viva voce* examination.

### **Minimum requirement for qualifying Viva voce Examination**

The scholars who have completed all the courses and earned a grade point average of not less than 7.5 will be permitted to appear for the qualifying examination. Scholars who do not satisfy these requirements shall not be permitted to take up the qualifying examination. The qualifying examination will be conducted after the successful completion of course work.

### **Selection of Examiner**

A panel of five external examiners for qualifying examinations shall be given by the RAC in consultation with HOD before three months of the date of completion of the

scholar's course work to the Director, DARE. One of them will be appointed as external examiner.

### **Qualifying Viva-Voce Examination**

The evaluation should cover both the research problem and theoretical background to execute the project. This shall assess the aptitude of the scholar and suitability of the scholar for the given research topic.

The RAC shall conduct the qualifying viva-voce examination with one external member, who shall be a specialist in the subject from outside the university.

The Head of the Department will monitor and coordinate the conduct of the qualifying viva. The performance of the candidate will be graded as Satisfactory / Unsatisfactory.

### **Communication of Results of Qualifying Examination**

The Research Supervisor shall act as chairperson for the examination committee and shall be responsible for communicating the results of the examination to the Director, DARE through HOD in the prescribed format.

### **Failure /Absence in Qualifying Viva-voce Examination**

When a scholar fails or absents for the qualifying viva-voce examination, he/she may apply again for permission to appear for re-examination to the Director, DARE with the recommendation of the RAC and Head of the Department.

A scholar, who applies for re-examination should attend viva-voce. Re-examination shall not take place earlier than one month after the first examination. It will be conducted by the RAC as previously indicated.

If a scholar fails in the re-examination, further re-examination will be considered on the recommendation of the RAC, HoD and Dean, Faculty of Agriculture. If the scholar fails in the qualifying examination, he/she is not permitted to register for further research credits in the next semester.

## **THESIS RESEARCH**

### **Selection of Topic**

The thesis research for the Ph.D. degree should be of the nature of a definite contribution to the subject and the results should be of sufficient importance to merit publication. The findings should have some practical utility or should lead to theoretical contribution.

The thesis shall be on a topic falling within the field of the major specialization and shall be the result of the scholar's own work. A certificate to this effect duly endorsed by the major advisor shall accompany the thesis

## **Research Proposal**

The research scholars shall present their broad area of research and submit a proposal to the Research Advisory Committee at the end of the first semester.

The research proposal has to be presented by the scholar in a meeting organized by the Head of the Department to get the opinion / suggestion of the faculties of the Department for improving it. Three copies of the research proposal in the prescribed format should be sent to the Director (DARE) through the Head of the Department for approval.

## **Evaluation of Thesis Research**

After assigning the research problem, for each semester, the scholar has to submit a detailed programme of work to be carried out by him/her during the semester in the prescribed proforma. After scrutiny and approval, a copy of the research programme has to be given to the scholar for carrying out the work during that semester.

Attendance register must be maintained in the department by HOD for all the scholars to monitor whether the scholar has 80% of attendance in research.

The scholar has to submit his/her research observation note book to the Research Supervisor, who will scrutinize the progress and sign the note book with remarks as frequently as possible. This note book will form the basis for evaluation of research progress.

After completion of 80% attendance for research and on or before the last day of the semester, the research scholars, shall submit Progress Reports in the prescribed format duly endorsed by the Research Advisory Committee to the Director, DARE until they submit their synopsis.

Failure to submit the progress reports shall entail automatic cancellation of registration.

The minutes of the meeting of the Research Advisory Committee along with enclosures will be sent to the Director, DARE.

Candidates who are recipients of fellowships such as JRF/SRF directly from any of the funding agencies/ shall send the progress reports and the utilization certificates in the format prescribed by the respective funding agency through proper channel.

## **SUBMISSION OF THESIS**

The research credits registered in the last semester should be evaluated only at the time of the submission of thesis, by the RAC. Scholars can submit the thesis at the end of the final semester.

If a scholar has completed the thesis before the closure of the final semester, the research supervisor can convene the RAC meeting and take decision on the submission of the thesis, provided the scholar satisfies 80 per cent attendance requirement.

The candidate shall be allowed to submit his/her thesis after the completion of stipulated period. A grace period of 30 days may be allowed to submit the thesis after the prescribed duration. If the thesis is not submitted even after the grace period, the scholar shall pay the tuition fee for the year.

If a scholar is not able to submit the thesis within the grace period, the scholar has to re-register for the credits in the forthcoming semester. The scholar who re-registers the credits after availing of the grace period will not be permitted to avail of grace period for the second time. The Head of the Departments can sanction the grace period based on the recommendation of advisory committee and a copy of the permission letter along with the receipt for payment of fine should accompany the thesis while submission

Three copies of the thesis (in the approved format) shall be submitted together with the submission fee not later than three months after the submission of the synopsis.

No dues certificates from the Department and Central Libraries, Hostel, Stores, etc. must be submitted with the thesis copies. The Research Supervisor shall forward the thesis copies with the enclosures to the Director, DARE through the HOD and the Dean. A soft copy of the thesis in PDF format as prescribed by Shodhganga, shall also be submitted.

The Ph.D. scholars have to publish a minimum of two research papers in NAAS rated journals with 5 and above rating/ Scopus / Web of Science indexed journals at the time of publication of the papers. The synopsis will be accepted for processing only after showing evidences for publications of two such research papers.

The soft copy of the thesis shall be checked for plagiarism using Turnitin software. Beyond the percentage of reproduction prescribed by UGC, the thesis will not be accepted for valuation.

#### **Pre-submission Presentation**

The pre-submission presentation of the thesis is a requirement to enrich the scholar and to fine tune his/her research presentation. This presentation shall be conducted before the submission of the synopsis in the presence of the RAC, Supervisor/Co-Supervisor, Faculty members, Research Scholars and/or P.G. Scholars.

The scholar is expected to present the first draft of the research work or explain the findings / problems faced. The gathering may suggest ideas / references to be consulted / suggestions to improve the work and so on.

A report on this event along with an attendance sheet shall be forwarded by the Research Supervisor with the endorsement of the RAC and HOD to the Director, DARE.

#### **Submission of Synopsis**

The submission of synopsis may be permitted 3 months before the completion of required duration on successful completion of course work.

The Research Scholar shall submit 3 copies of the synopsis approved by the Research Advisory Committee along with a soft copy to the Director, DARE through the Research Supervisor, the HOD and Dean of the respective Faculty.

Guidelines for the preparation of the synopsis are appended in Appendix I. Name of the candidate and name of the supervisor shall not be mentioned anywhere in the synopsis; enrolment number of the candidate alone shall be given. A model cover page for a synopsis is given in Appendix III.

### **Guidelines for Preparation of Thesis**

The thesis shall not exceed 250 pages excluding the Bibliography, Appendices, etc. If it exceeds the specified number of pages, the Research Supervisor should write to university with the reasons and get prior approval from the University. The candidate shall pay a penalty for the excess number of pages as decided by the Deans Committee. The thesis should be in A4 size.

The specification for the preparation of the thesis is given in Appendix II. A model cover page for a thesis is given in Appendix IV.

The thesis shall be typed on both sides of the page in order to save paper and postage. The thesis shall contain a Certificate from the guide (Appendix V) specifying that the thesis submitted is a record of research work done by the candidate during the period of study under him/her and that the thesis has not previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or similar title.

A statement from the guide indicating the extent to which the thesis represents independent work on the part of the candidate should also be made.

### **VALUATION OF THE THESIS**

#### **Panel of Examiners**

The thesis submitted in partial fulfilment of the Ph.D. degree shall be evaluated by two external experts one from within the country and the other from outside the country appointed by the Vice-Chancellor on the recommendation of the Research Supervisor of the RAC, HOD and Dean.

The external experts shall be chosen from a panel of at least five names of specialists separately from within the country and outside the country in the particular field, suggested by the Research Supervisor.

The external experts shall send their evaluation reports on the thesis directly to the Director, DARE along with the copy of the evaluated thesis. The Director, DARE on receipt of the reports from the two examiners will send them to the concerned Research Supervisor who is the convener of viva-voce board.

The Research Supervisor will send the consolidated report with his remarks to the Director, DARE through the Head of the Department. Based on the satisfactory reports of the evaluation, Viva-voce examination will be arranged.

After a scholar's thesis for Ph.D. degree is evaluated as indicated above, the thesis shall be finally accepted for the award only after the scholar satisfactorily completes the final Viva-voce examination.

The Viva-Voce board comprises the scholar's RAC with the addition of the external examiner who valued the thesis, and the HOD. If the HOD happens to be the Research Supervisor, the Dean, Faculty of Agriculture will nominate a senior member of the staff of the concerned Department as a member.

The candidate is expected to defend the thesis at the Viva-voce examination. The degree shall be awarded on the unanimous recommendation of the Viva-Voce board as satisfactory with regard to the thesis and the performance of the scholar in the final Viva-voce examination.

The recommendation of the Viva-Voce board shall be forwarded to the Director, DARE by the Research Supervisor through HOD and Dean which shall be signed by all members of the committee and the external examiner.

A candidate who is not successful (unsatisfactory) at the Viva-voce examination will be permitted to undergo the Viva-voce examination again within a period of three months.

Sl. No	Name of Faculty / Scientist	Whether qualify for supervision of PG Programme?	Whether qualify for supervision of Ph.D. Programme ?	Name of students Guided	Degree Programme	Year awarded	Title of thesis
<b>2017-2018 – NIL</b>							
<b>2018-2019</b>							
1	Dr. K. Saravanan	Yes	Yes	Mr. S.N. Swamy Gowda	Ph.D - Agricultural Botany (Genetics and Plant Breeding)	2018	Studies on genetic variability and character association in promising sugarcane ( <i>Saccharumofficinarum</i> L.) genotypes in relation to their performance in plant and ratoon crops
<b>2019-2020</b>							
1	Dr. J. Gokulakrishnan			Mr. C. Nagaraja	Ph.D – Genetics and Plant Breeding	2019	Heterosis and combining ability studies in hot pepper ( <i>Capsicum annum</i> L.)
<b>2020-2021</b>							
1	Dr. B. Sunil Kumar	Yes	Yes	Sayed Mohammed RafiqGafur Sah	Ph.D – Genetics and Plant Breeding	2020	Heterosis and combining ability studies involving diverse sources cytoplasmic genetic male sterility in Pearl Millet ( <i>Pennisetumglaucum</i> (L.) R.Br.)
<b>2021-2022</b>							
1	Dr. J. Gokulakrishnan	Yes	Yes	RavindraBabuSidd ulla	Ph.D – Genetics and Plant Breeding	2021	Choice of testers for determining combining ability effects in single and three way cross hybrids in maize ( <i>Zea mays</i> L.)
2	Dr. R. Elangaimannan	Yes	Yes	Mr. P. ArunKumar	Ph.D – Genetics and Plant Breeding	2021	Genetic Enhancement of ( <i>Gloriosasuperba</i> (L.)) for high yield and colchicines through mutagenesis



#### 6.4.7. Feedback of stakeholders

The feedback is obtained for every course at the end of each semester and the consolidated action taken report is presented in the following table.

Sl. No.	Stakeholders	Feedback	Action taken
1	Students	Requested special classes for slow learning students	Remedial classes are taken for slow learners.
2		Asked for free ICAR coaching classes.	Special coaching classes for ICAR and competitive examinations.
3		Expressed the need for air conditioned Seminar Hall with A/V facilities.	Established Hi-Tech seminar Hall with funding from Departmental alumni and contribution from department Faculties.
4		Requested for re-fencing of damaged segments.	Re-fencing Plant Breeding Farm for conduct of various field trials.
5		Asked facility to carry out rapid emasculation in short span of time in rice.	Vacuum emasculator for ease and rapid hybridization in rice.
6		Expressed the need for free access to online journals for research at Department itself.	Provided Wi-Fi INFLIB net / MYLOFT for easy access of journals for research.
7		Requested for more seating capacity and books.	Enhanced Department Library facilities in terms of space and inventory.
8		Asked separate area for preliminary screening.	Partitioning of Pot-Culture Yard for three disciplines of study.
9		Requested smart class room facility.	Smart TVs in classrooms for visual presentation of videos and power points.
10		Expected guidance for their Progression.	“WhatNext?!”-A student oriented guidance programme by Experts was conducted on 2022.

Sl. No.	Stakeholders	Feedback	Action taken
11	Students	Asked for exposure to become an entrepreneur.	<ul style="list-style-type: none"> <li>▪ Industrial Visits were made to several Government and private institutes.</li> <li>▪ Guest Lectures from entrepreneur.</li> </ul>
12		During COVID-19 Pandemic students requested for online classes and research updates.	Online-classes and International Webinars.
13		Placement services	Annual Recruitment of students by Private Sector Seed Companies.
14	Parents	Requested minimal Financial support for their wards.	Rs.2000/- financial aid per student for top ranking 3 students in each discipline of study have been disbursed to students in the last five years from the UGC-SAP.
15.		Expressed concern about the safety and progress of their wards.	<ul style="list-style-type: none"> <li>• Mentor-Mentee system was in place to cater the concern of the students.</li> <li>• Department Faculties also serve as Deputy Wardens in various Hostels.</li> </ul>
16	Farmers	Asked for latest developments and happenings.	PPVFRA Training programme to Farmers
17.		Asked for high yielding/remunerative varieties.	<ul style="list-style-type: none"> <li>▪ Annamalai Musk melon.</li> <li>▪ AU-1.</li> <li>▪ Anamalai-Brinjal.</li> <li>▪ AU -1 GSR Rice variety</li> </ul>
18.	Employers , those who come for campus placements banks, private sector seed companies etc.	Expected skilled and technically sound employable candidates with good communication ability.	<ul style="list-style-type: none"> <li>▪ Industrial Tie-up training arranged at various public/private sector.</li> <li>▪ Personality Development Classes</li> <li>▪ Mock-Interviews</li> <li>▪ Group Discussions and Brain Storming Sessions.</li> </ul>

**6.4.8 Student intake and attrition in the programme for last five years**

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
2	-	7	13	6	-	-	-	-	-

**Employment details of Ph. D. Scholars**

Academic year	Number of Scholars (Ph.D.)	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	-	-	-	-	-	-	-	-
2018-19	1	-	-	-	1	-	1	100
2019-20	1	-	-	-	1	-	1	100
2020-21	1	-	-	-	1	-	1	100
2021-22	2	-	-	-	1	1	2	100

**6.4.9. ICT Application in Curricular Delivery**

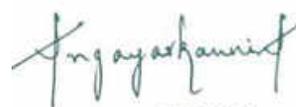
- Animations and videos on recent technologies, through audio visual aids.
- All the laboratories are provided with LCD projector and LCD TV
- Power point and video presentations are displayed to the students about Emasculation, Pollination and breeding techniques.
- Softwares like Agres. Genres, NPRC, IRRI-STAT, STARSAS are used to demonstrate to the students the Experimental and Mating designs.
- E - courses and online journals are used for effective dissemination of course
- Intranet facilities are provided to the students to access online journals.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean ..... **Dr. A. Anagayarkanni** ..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
 DEAN  
 FACULTY OF AGRICULTURE  
 ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
Ph.D. Molecular Biology & Biotechnology

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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#### 6.4. Self Study Report for the Programme

**Name of the Degree Programme: Ph.D. in Molecular Biology and Biotechnology**

**Offered by: Department of Genetics and Plant Breeding**  
(UGC SAP DRS Phase II & DST FIST supported)

##### 6.4.1. Brief History of the Degree Programme

The division of Agricultural Botany came into existence mainly to cater the instructional needs of UG degree in the year 1958. Later the division was upgraded as the Department of Agricultural Botany in the Faculty of Agriculture in 1980. The Post graduate programme in Agricultural Biotechnology was started in the year 2012 in the Department of Genetics and Plant Breeding. The PG degree was later renamed as Molecular Biology and Biotechnology in the year 2022.

The Doctoral degree in Molecular Biology and Biotechnology was offered from 2019.

Historical Itinerary	Year of Commencement/Period
Division of Agricultural Botany	1958
Ph.D. in Agricultural Botany	1965
The Division was upgraded as Department of Agricultural Botany	1980
M.Sc. (Ag.) in Genetics and Plant Breeding	1989
Ph.D. in Genetics and Plant Breeding	1992
M.Sc.(Ag.) in Seed Science and Technology	2006
The Department was renamed as Department of Genetics and Plant Breeding	2010
Ph.D. in Seed Science and Technology	2010
M.Sc. (Ag.) in Agricultural Biotechnology	2012
Ph.D. in Agricultural Biotechnology	2019
Renamed as M.Sc. (Ag.) in Plant Molecular Biology and Biotechnology	2019
Renamed as Ph.D. in Plant Molecular Biology and Biotechnology	2019
Renamed as M.Sc. (Ag.) in Molecular Biology and Biotechnology; Ph.D. in Molecular Biology and Biotechnology	2022

The Ph.D. degree programme in Molecular Biology and Biotechnology, has a total of 75 credits (2017-18 to 2020-21) which includes 15 credits for major courses, 45 credits for Ph.D. thesis research, 08 credits for minor courses, 05 credits for supporting courses, 2 credits for seminar along with non - credit compulsory courses.

From 2021-22 onwards a total of 100 credits which includes 12 credits for major courses, 75 credits for Ph.D. thesis research, 06 credits for minor courses, 05 credits for supporting courses, 2 credits for seminar along with non - credit compulsory courses.

**Vision**

- To grow into a leading centre with the integration of teaching and learning in molecular breeding and plant biotechnology.
- To become a leading Laboratory with the latest molecular tools to disseminate knowledge and skill to the students.

**Goals**

- To enhance the expertise through high delivery inputs in advanced learning, research and development through Institutional collaboration.
- To empower the graduates to start an enterprise on their own and deliver products.
- To develop abiotic stress tolerant varieties using molecular tools.
- To reach out to national and global collaborators to enhance and achieve the excellence in Plant Biotechnology.

**Objectives**

- To provide students with the most useful practical skills and to introduce them to area of research methods and techniques used in modern biological sciences.
- To generate entrepreneurship in Agricultural Biotechnology and agro-based industries
- Breeding for abiotic stress tolerance by utilising latest molecular tools for saline and flood tolerance suitable for east coast region of Tamil Nadu.
- To establish link with DBT, ICAR, SAUs, IRRI and other leading national and international institutes and Biotechnology based industries

**Strategic plan to achieve Vision and Goal (Agricultural Biotechnology)**

Goal	Objectives	Implementation plan	Performance Metrics/Timeline	Outcomes
To enhance the expertise through high delivery inputs in advanced learning, research and development through Institutional collaboration.	To provide students with the most useful practical skills and to introduce them to area of research methods and techniques used in modern biological sciences.	Periodical upgradation of course content.  Definitive implementation of class seminars & credit seminar to impart interactive ability among students	Once in three years.  Once in a semester	A periodically updated curriculum adds up to the domain knowledge of the students.

<p>To generate entrepreneurship in Agricultural Biotechnology and agro-based industries</p>	<p>To generate entrepreneurship in Agricultural Biotechnology and agro-based industries</p>	<p>Organizing periodical guest lectures by entrepreneurs/industrialist</p> <p>Arranging industrial visit</p>	<p>Periodically</p>	<p>Development of student's personality to face the society.</p>
<p>To develop abiotic stress tolerant varieties using molecular tools.</p>	<p>Breeding for abiotic stress tolerance by utilising latest molecular tools for saline and flood tolerance suitable for east coast region of Tamil Nadu.</p>	<p>Development of abiotic stress tolerant/resistant varieties.</p>	<p>Periodically</p>	<p>Adaptation to changing environmental conditions.</p> <p>Improvement on livelihood of farmers.</p>
<p>To reach out to national and global collaborators to enhance and achieve the excellence in Plant Biotechnology.</p>	<p>To establish link with DBT, ICAR, SAUs, IRRI and other leading national and international institutes and Biotechnology based industries</p>	<p>To introduce modern molecular tools practiced in National and International Institutes.</p> <p>MoU with National and International research agencies.</p>	<p>Periodical</p>	<p>To build and strengthen a strong education, research and translation ecosystem across the country.</p>

## Accomplishments

### Research Collaborations

- The Department of Genetics and Plant Breeding has collaborated with various National and International agencies such as **IAEA, FAO, IRRI, IIRR, IIOR, and UGC.**
- The department has strong collaboration with **AICRIP (ICAR) and STRASA (IRRI) (saline tolerant breeding network)** programme.
- Faculties of the Department are actively engaged in **IRRI-Annamalai University (IRRI-AU) MoU on “Multiple Stress tolerant Rice Varieties for TamilNadu”** involving extensive evaluation of elite **Green Super Rice (GSR) lines** since 17.06.2020.

### Research Fundings

The research environment of the Department got boosted up by funds from

- ✓ **UGC-SAP DRS Phase I & II (102.5 lakhs)**
- ✓ **DST FIST (Rs. 38 lakhs)**
- ✓ **Non-SAP (10 lakhs)**
- ✓ **RUSA (10 lakhs) and**
- ✓ **TNSCST.**
- ✓ **RGNF.**
- ✓ **Fly Ash mission from NLCIL.**

### Research Outcomes

- Standardized hand emasculatation and pollination method for hybrid seed production in Sesame is a major outcome of FAO/IAEA research project.
- Annamalalai Melon.
- AU-1 rice are the notable contributions of the department.
- Annamalalai Brinjal (National Aphid resistant check variety), a popular and major cultivated variety in Cuddalore district of Tamil Nadu.
- AU-1 GSR (Green Super Rice), an elite high yielding, multiple stress tolerant rice variety was released during December, 2020. It is cultivated in the districts of Nagapattinam, Mayiladuthurai, Cuddalore, Villupuram, Kallakurichi, Thiruvallur, Salem, and Madurai.
- **Seed pelleting techniques for sesame, green gram and black gram using fly ash was developed through DST Project.**
- **Sesame seed hardening technique chicory medicinal herb extract was developed through UGC - MRP project**
- **Seed halogenation technique for sesame seed storage through TNSCST project**
- **Seed hardening techniques for paddy, Greengram and brinjal.**
- **SSR marker techniques for varietal identification.**
- **Standardized Bio pelleting using Prosopis spp.**
- **Standardization of tissue culture techniques for sesame, green gram and black gram was developed through DST Project.**
- **Black gram genotypes resistant to YMV was screened using molecular tools through UGC-GDA-XII plan innovative Research project.**

### Achievements by Faculty

- Dr. C.N. Sambandam an eminent vegetable breeder and the first Head of the Department spearheaded the release of Annamalai Brinjal.
- Dr. S. Thirugnanakumar's Doctoral research scholar Dr. R. Narasimman received **Jawaharlal Nehru Post Graduate Research Award from ICAR.**
- Dr. A. Anandan went for hands-on training at **International Rice Research Institute (IRRI), Philippines.**
- Dr. R. Eswaran had undergone training at **Ghent University, Belgium**
- Dr.S.Murugan was invited as **Visiting Professor** by the Dept. of Horticulture, **North Carolina State University, U.S.A.**
- Dr. S. Murugan was invited as **Visiting Scholar/Researcher** by the **Biomedical Sciences Research Institute, Ulster University, UK.**
- Dr. M. Prakash, Professor served as **UGC-SAP Co-Ordinator** for DRS Phase I and II.
- Dr. S. Murugan, Professor served as **UGC-SAP Deputy -Coordinator** for DRS Phase I and II.
- Dr. M. Prakash, Professor is currently serving as **Controller of Examinations**, Annamalai University since, Januaray, 2022.
- Dr. S. Murugan, Professor is serving as **Joint-Director, Directorate of Research and Development (DRD)**, Annamalai University.
- Dr. S. Padmavathi, Professor is serving as **Academic Council Member**, Annamalai University from 2022 onwards.
- Dr. K. Saravanan, Professor is serving as **Faculty Co-Ordinator, IQAC Cell, Faculty of Agriculture** from 2020 onwards.
- Dr.T. Sabesan, Associate Professor is serving as **Deputy Director, Center for Alumni Relations**, Annamalai University since 2019.
- Dr. M. Venkatesan Associate Professor is serving as **Nodal-Officer, Disability Cell**, Annamalai University.
- Dr. S. Vennila, Assistant Professor is serving as **Associating Scientist, Center for Natural Farming and Sustainable Agriculture.**
- **IRRI-AU MoU Team of Department of Genetics and Plant Breeding include Dr. K. Saravanan, Dr. T. Sabesan, Dr.R.Elangaimannan and Dr. B. Sunilkumar as lead plant breeders.**
- **"AU-1 GSR" - A multi stress tolerant rice variety was released by IRRI-AU MoU Team of Department of Genetics and Plant Breeding.**

The faculties also visited various countries and attended research oriented conferences and workshops. They are also actively involved in professional development activities by becoming members in various professional bodies and published research articles in various peer reviewed and high impact factor journals. The majority of the Staff in this discipline has qualified the National Eligibility Test.

Departmental Research Metrics :

Topic	Metrics	Source
'h' Index	11	IRINS, AU
i 10 Index	7.9	Google Scholar
Cross-Ref Citations	338	IRINS, AU
Total Citations	747	IRINS, AU

### Special Lectures

- Dr.V. Vijayakumar, Eastern Connecticut State University, USA
- Prof. C. Ramasamy, Former Vice Chancellor (TNAU), Coimbatore.
- Dr. K.K.Vinod, Principal Scientist, IARI, Regional Centre, Aduthurai.
- Dr. R. Vijayaraghavan, Dean, Adhiyaman College of Agriculture and Research, Krishnagiri.
- Dr.Mohan Andrew Savery, Senior Rice Breeder, KVK, Puducherry
- Dr. M. Subramanian, Former Director of Research, TNAU
- Dr.MuraliGopal, Principal Scientist, ICAR- Central Plantation Crops Research Institute, Kerala.
- Dr. S. Thirumeni, Professor& Head, PAJANCOA, Karaikal.
- Dr.J. KannanBapu, Former Registrar, TNAU
- Dr.Muralidharan, Director, Indian Institute of Pulses Research
- Dr. M. Mageswaran, Director, CPBG, TNAU
- Dr.N. Nadarajan, Professor, Tamil Nadu Agricultural University.
- Mr.UmakanthDubey, Deputy Registrar, PPVFRA, New Delhi
- Ms. Subashini Sridar, Centre for Indigenous Knowledge Systems (CIKS)

### International and National Seminars/Conferences/Workshops - Organised (2017-2022)

Topic	Metrics
<b>International Conference</b>	01
<b>National Seminar/Conference/Webinars</b>	09
<b>National/Workshop</b>	08

The department successfully organized the first policy meeting on “National Consultation Workshop on Agro-biodiversity Hotspots and Access and Benefit Sharing” of National Biodiversity Authority (NBA) and PPVFRA.

In March, 2018 the department successfully organized the Plant variety protection Awareness programme for Farmers under the aegis of PPVFRA.

### Research Publications and Books (2017-2022)

Journal Articles	302
Books & Book Chapters	91

ICAR has recommended two books namely, “A Text book of Seed Science and Technology” “Quantitative Genetics and Crop Breeding” authored by Dr. S. Thirugnanakumar and Co-authors as well as Dr. S. Padmavathi and Co authors for the aspirants of PG and Ph.D. courses in ICAR and affiliated colleges.

### Student Progression

Students are constantly motivated to take up national level competitive examinations like National Eligibility Test, ARS and were guided through coaching classes with supporting books. The Department is striving hard to produce excellent researchers with outstanding skill sets. The faculty members periodically organize Seminars, Trainings and workshops to impart knowledge on recent development in crop improvement.

Thrust has been given to impart knowledge to students on various aspects of Molecular Biology and Biotechnology at Doctoral level. This ultimately encourages the students to improve their competing ability to express their ability in the competitive examinations. Additionally, coaching classes are being conducted to make the students, facing competitive world. This enables the students to secure placements in World Class coveted overseas institutions, most often with full-funding.

Remedial classes are being offered for slow learners for easy understanding and enhance their performance. By taking Guest lectures with renowned scholars, the knowledge and recent trends of the subjects are being updated.

### Alumni Support

Alumni of the Department placed in SAUs, ICAR Institutions, International Institutes, and Private Sectors act as a major driver of growth providing technical guidance, essential infrastructure, CSR funding and placement.

The alumni donations has resulted in realizing the Dr. C.N. Sambandam Hi-Tech Presentation Hall.

### Departmental Endowment Awards for Students

To motivate and enthuse the PG students, an endowment is instituted.

Sl. No.	Name of the Endowment award/medal
1.	Sri Lochani Varadarajulu Prize for top ranking student

### Department Snapshot

Category	Total period	Last five year period (2017-2022)
Number of Publications (Journal articles)	883	345
Number of Publications (Seminars/ Conferences/Symposia)	240	80
Number of Books & Book Chapters	161	22
Numbers of Projects obtained	30	11
Grants (Mobilization (Lakh rupees)	343.13	194.26
Number of Ph.Ds. Produced	-	-
Number of PGs Produced	37	25
Number of Seminars/Conference/ training program/workshops organized	32	18

### 6.4.2. Faculty Strength

The permanent faculty strength appointed in the Department of Genetics and Plant Breeding is furnished below.

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
1.	Professor*	9	9	-	1
2.	Associate Professor*	10	10	-	1
3.	Assistant Professor*	12	12	-	3
	<b>Total</b>	<b>31</b>	<b>31</b>	<b>-</b>	<b>5</b>

\*Assigned responsibilities for multiple programmes



### Credentials of the Faculty

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
							11	7.94	747		
1.	Dr. S. Padmavathi © Professor and Head	26	Hybrid seed production, Seed Treatment techniques	19	3	20	3	1	6	3	114
2.	Dr. M. Prakash ©# Professor	26	Stress Physiology and plant Molecular Biology	25	8	72	15	6	17	31	1142
3.	Dr. S. Murugan *# Professor	26	Cytogenetics, Heterosis Breeding, Molecular Plant Breeding, Molecular marker technology	15	3	50	9	2	9	9	242
4.	Dr.S.Thirugnanakumar * Professor (Retired on 30.06.2022)	26	Molecular genetics, Biotechnology, Mutation Breeding, Recombination breeding	28	7	90	5	2	11	11	296
5.	Dr. P. Senthil Kumar *# Professor	24	Heterosis Breeding, Sesame Breeding, Musk melon breeding, Molecular marker	22	3	31	-	2	13	16	512

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
			technology								
6.	Dr. Y. Anbuselvam * Professor	26	Genetics and Cytogenetics, Biometrics, Biotechnology	23	6	56	10	2	11	12	313
7.	Dr. P. Thangavel * Professor	25	Biometrics, Genetics and Pulse Breeding	18	1	57	3	1	9	9	248
8.	Dr. K. Saravanan * Professor	24	Quantitative Genetics, Biometric analysis	18	4	98	4	3	15	27	1001
9.	Dr. N. Senthil Kumar * Associate Professor	22	Heterosis Breeding in Vegetables	15	3	72	19	9	8	6	231
10.	Dr. Y. Anitha Vasline * Associate Professor	22	Mutation Breeding, Cytogenetics	15	1	29	8	4	7	3	89
11.	Dr. B. Sunil Kumar *# Associate Professor	20	Physiological and Molecular genetics in Pulses	11	1	61	6	4	14	30	1310
12.	Dr. J. Gokulakrishnan * Associate Professor	21	Heterosis Breeding in Rice & Maize	13	2	43	10	6	7	6	169
13.	Dr. R. Elangaimannan *# Associate Professor	21	Heterosis Breeding, Biometrics,	13	1	43	10	3	6	6	188

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
			physiology & Plant Biotechnology								
14.	Dr. T. Sabesan *# Associate Professor	20	Heterosis breeding, and Molecular Plant Breeding for Abiotic stress.	11	-	61	18	8	13	16	615
15.	Dr. V. Anbanandan * Associate Professor	18	Sugarcane Breeding, Rice Breeding	7	-	33	9	2	5	2	98
16.	Dr. GSathiyarayanan © Associate Professor	19	Seed Halogenation. Hybrid seed production	16	-	90	29	2	8	6	222
17.	Dr. S. Ezhil Kumar © Associate Professor	19	Molecular Varietal identification, Seed Production and Seed Testing.	15	-	21	5	2	2	1	20
18.	Dr. P. Karthikeyan * Associate Professor	17	Rice Saline Tolerant	7	-	46	9	3	6	5	171
19.	Dr. M. Venkatesan * Associate Professor	17	Rice Breeding, Innovative Breeding, Hybrid rice	10	-	57	9	2	9	9	241

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
							11	7.94	747		
20.	Dr. R. Ebneezer Baburajan * Associate Professor	19	Heterosis Breeding, Resistance Breeding	6	-	34	19	4	3	1	36
21.	Dr. R. Eswaran ** Assistant Professor	19	Heterosis Breeding, Molecular Breeding	12	-	63	22	5	13	15	503
22.	Dr. C. Praveen Sampath Kumar ** Assistant Professor	18	Heterosis Breeding in Bhendi	10	-	73	19	3	8	7	188
23.	Dr. J.L. Joshi ** Assistant Professor	16	Heterosis Breeding in Bhendi	8	-	43	11	2	2	1	31
24.	Dr. R. Anandan # Assistant Professor	16	Plant Molecular Biology and Biotechnology	8	-	33	5	1	8	6	224
25.	Dr. K.R. Saravanan ** Assistant Professor	16	Screening genotypes for saline Ecosystem	12	-	72	21	4	5	1	58
26.	Dr. S. Vennila *© Assistant Professor	16	Mutation Breeding, Cytogenetics	8	-	43	27	5	5	3	75
27.	Dr. S. Suganthi *© Assistant Professor	16	Recombination Breeding, Crop Diversity Analysis	8	-	41	26	4	5	3	105

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94	747		
28	Dr. S. Ranjith Rajaram * <sup>©</sup> Assistant Professor	14	Rice and Sesame Breeding	8	-	31	24	3	5	2	72
29.	Dr. A. Kamaraj <sup>©</sup> Assistant Professor	13	Pre sowing seed enhancement treatment, Seed testing	7	-	34	18	2	3	2	58
30.	Dr. P. Satheesh Kumar * <sup>©</sup> Assistant Professor	13	Heterosis Breeding, Mutation Breeding.	7	-	50	18	4	6	4	160
31.	Mr. V. Arivoli * Assistant Professor	12	Recombination Breeding	-	-	0	-	-	-	-	-
32.	Dr. R. Narayanan * <sup>©</sup> Assistant Professor	12	Recombination breeding, Mutation Breeding	7	-	15	8	2	2	1	23

\* - Genetics and Plant Breeding, <sup>©</sup>- Seed Science and Technology, # - Molecular Biology and Biotechnology

## List of Project Handled - Last five years

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
1.	Screening Bhendi genotypes ( <i>Abelmoschus esculentus</i> (L.) moench) (rice fallow) for resistance to yellow vein mosaic virus disease combined with high yield Suitable for Coastal Ecosystem.	N. Senthil Kumar	2013-2017	UGC	15.42
2.	Exploitation of medicinal herbs to alleviate moisture stress and enhancing yield potential in sesame ( <i>Sesamum indicum</i> L) under rainfed condition through molecular approach	Dr. G. Sathiya Narayanan Dr. B. Sunil Kumar Dr. R. Anandan	2013-2017	UGC	7.95
3.	DST -FIST	Dr. S. Murugan	2013-2018	DST	38.00
4.	Development of stress tolerance varieties for coastal regions of TamilNadu in mandate crops (UGC SAP DRS Phase II)	Dr. M. Prakash Dr. S. Murugan	2015-2020	UGC	102.50
5.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic back ground of Black gram ( <i>Vigna mungo</i> (L.)	Dr. S. Murugan Dr. M. Prakash Dr. R. Anandan Dr. J. Gokulakrishnan	2016 -2017	UGC	1.25
6.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic backgrounds of blackgram ( <i>Vigna mungo</i> L.) (DST PURSE Phase II)	Dr. S. Murugan	2018-2021	DST-PURSE	5.00
7.	Green Super Rice for TamilNadu: Assessing multiple abiotic and biotic stress tolerance and yield potency under varying	Dr. R. Elangaimannan Dr. K. Saravanan Dr. T. Sabesan	2021-2023	RUSA	10.00

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
	environment for sustaining production and ensuring nutritional integrity	Dr. B. Sunilkumar Dr. S. Murugan			
8.	Technology development for biofortification through micronutrients and bioactive compounds for protection and enhancement of human health in coastal ecosystem	Dr. Elayaraja Dr. N. Senthilkumar	2022-2024	RUSA	10.13
<b>TOTAL (A)</b>					<b>190.25</b>
<b>Private Sector Projects</b>					
Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
1.	Efficacy trials with Modulin on the expression ,growth ,development and yield of rice crop	Dr. G. Barathan Dr. S. Murugan	2016-2017	T-Stanes and company Ltd.,Coimbatore	2.10
2.	Evaluation of Methyl violet Dye in the formulation of Carboxin 37.5% +Thiram 37.5% WS on groundnut.	Dr. T. Sabesan	2018 - 2019	Arysta Life Science, Mumbai	0.91
3.	Digitalization of data on Crop cultivation practices of major Agricultural and Horticultural crops	Dr. S. Murugan	2018-2019	Bayer crop Science	1.00
<b>TOTAL (B)</b>					<b>4.01</b>
<b>TOTAL A+B</b>					<b>194.26</b>

## Awards/Recognitions/Countries visited by Faculty

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
1	Dr.S.Murugan	Visiting Professor, North Carolina State University (2017) Fellow of Indian Society of Genetics and Plant Breeding, New Delhi	U.S.A , Water melon and cucumber breeding, North Carolina State University, U.S.A
2	Dr. G. Sathyanarayanan	Excellence in Research Award (2017)	S & T SIRI, Telangana
3	Dr. M. Prakash	Best research publications award, 2012-2017. J JChinoy Gold Medal Award- Indian Society of Plant Physiology, 2017. Fellow - Indian Society of Plant Physiology, New Delhi, 2015. (FISPP). Fellow - National Academy of Biological Sciences, Chennai. 2016 (FNABS).	
4	Dr.S.Thirugnanakumar	Fellow of Indian Society of Oil Seed Research, Fellow of HIND AGRI-HORT Society. ICAR Citation for best Thesis award 2007 Dr.Kannaiyan endowment - Best researcher award -2018	
5	Dr.R. Anandan	Best oral presentation award (2017)	National Conference on Innovations in Biotechnology at Madurai Kamaraj University during 14 <sup>th</sup> & 15 <sup>th</sup> Dec., 2017.
6	Dr. T. Sabesan	Editorial Board Member (2017 onwards)	Journal of Innovative Agriculture (eISSN: 2394-5389)
7	Dr. R.Eswaran	Summer course on "Modern Breeding Techniques for the Improvement of leguminous plants" (2017).	Institute of plant biotechnology for developing countries , Ghent University , Belgium
8	Dr. K.R. Saravanan	Scientist of the year award (2018)	ICFA, Jharkand
9	Dr. K.R. Saravanan	Outstanding Breeder Award (2019)	PRAGATI, Jharkand
10	Dr. S. Murugan	Member, Panel of Examiners, TamilNadu Public Service Commission (TNPSC) ( 2019)	

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
11	Dr. T. Sabesan	Confidential work at TamilNadu Public Service Commission (TNPSC), Chennai (2019)	(TNPSC), Chennai
12	Dr. M. Venkatesan	Best Oral Presentation award (2019)	University of Hyderabad
13	Dr. S. RanjithRajaram	Best Oral Presentation (2019)	PRAGATI, Jharkhand
14	Dr.T.Sabesan	Best paper Award (First Place) in the session Genetics (2020)	In the 6 <sup>th</sup> National Conference in Agricultural Scientific Tamil held International Institute of Tamil Studies, Chennai during Dec 21-22, 2020.
15	Dr.B. SunilKumar	Outstanding Scientist Award (2018)	Conferred by the Society of Tropical Agriculture, New Delhi
16	Dr. G. Sathyanarayanan	Best Researcher Award (2020)	ICEACBS, Puducherry
17	Dr. M. Venkatesan	Best Scientist Award (2020)	ICEAACBS, Puducherry
18	Dr. S. Thirugnanakumar	Editorial member for the journal "Advances in Plant Sciences"	
19	Dr. T. Sabesan	Reviewer Excellence Certificate (2020)	<i>ActaEcologicaSinica</i> (Elsevier), Agricultural Science Digest (ARCC)
22	Dr. S. RanjithRajaram	Academic Excellence Award (2021)	Institute of Researchers, Wayanad, Kerala
23	Dr. M. Venkatesan	Best Teacher Award (2021)	Global Management Council, Ahmadabad
24	Dr. Y. Anbuselvam	Reviewer Excellence Award (2021)	ARCC Journal
25	Dr. T. Sabesan	Excellence in Reviewing (2022)	International Journal of Plant & Soil Science
26.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Asian Journal of Biotechnology and Genetic Engineering
27.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Current Journal of Applied Science and Technology
28.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	International Journal of Environment and Climate Change

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
29.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	Annual Research and Review in Biology
30.	Dr. S. Vennila	Best Oral Presentation (2018)	Dept. of Genetics and Plant Breeding, Faculty of Agriculture, Annamalai University
31.	Dr. S. Vennila	Best Oral Presentation (2020)	Dept. of Plant Pathology, Faculty of Agriculture, Annamalai University
32.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University
33.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Agrl. Extention, Faculty of Agriculture, Annamalai University
34.	Dr. G. Sathiyarayanan	Best Poster Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University

### 6.4.3. Technical and Supporting staff

The technical and supporting staff of the Department of Genetics and Plant Breeding is given below

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
1.	Assistant*	4	4	-	1
2.	Lab assistant*	4	4	-	2
3.	Field assistant*	5	5	-	2
<b>Total</b>		<b>13</b>	<b>13</b>	<b>-</b>	<b>5</b>

S. No.	Sanctioned post	Staff in place	Responsibilities
1.	Supporting Staff*	4	<ul style="list-style-type: none"> <li>Assisting in Data processing and documentation.</li> <li>Maintenance of office files and official records.</li> <li>Execution of purchase and settlement of bills.</li> <li>PG and Ph.D admissions work</li> <li>UG, PG and Ph.D Examination works</li> <li>Computer typing works.</li> </ul>
2.	Technical Staff* (Department)	4	<ul style="list-style-type: none"> <li>Assisting laboratory classes.</li> <li>Supervision of labourers</li> <li>Maintenance of stock registers.</li> </ul>
	Technical Staff* (Research)	3	<ul style="list-style-type: none"> <li>Layout of field trials.</li> <li>Supervision of labourers</li> <li>Maintenance of stock registers.</li> </ul>
3	Field Staff*	2	<ul style="list-style-type: none"> <li>Layout of field trials.</li> <li>Recording of research trial observations.</li> </ul>

\*Assigned responsibilities for multiple programmes

#### 6.4.4. Classrooms and Laboratories

Sl.No.	Abstract of Facilities	Numbers
1.	HOD Room	1
2.	Office Room	1
3.	Staff Rooms	5
4.	UG Laboratories	3
5.	PG Lecture Halls	3
6.	Ph.D. Lecture Halls	3
7.	Field Demonstration Hall	1
8.	PG & Ph.D. Laboratories	5
9.	Department Library	1
10.	Hi-Tech Hall	1
11.	Pot Culture Yard	3
12.	Plant Breeding Experimental Farm (Field No. 13,14,15 & 16)	4

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
1.	HOD Room	1	(15x9.7) 145.5	1	-
2.	Office Room	1	(16x9.7) 155.2	3	-
3.	Staff Room-1	1	(17.8x9.2) 163.76	2	-
4.	Staff Room-2	1	(17.8x9.2) 163.76	3	-
5.	Staff Room-3	1	(17.8x9.2) 163.76	3	-
6.	Staff Room-4	1	(17.8x9.2) 163.76	3	-
7.	Staff Room-5	1	(31.5x19.4) 611.1	13	-
8.	UG Laboratory-1	1	(30x36.2) 1086.75	50	OHP projector, LCD television, monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
9.	UG Laboratory-2	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
10.	UG Laboratory-3	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
11.	PG Lecture Hall (Genetics & Plant Breeding)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like LCD projector and Smart TV.
12.	PG Lecture Hall (Seed Science & Technology)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like Smart TV

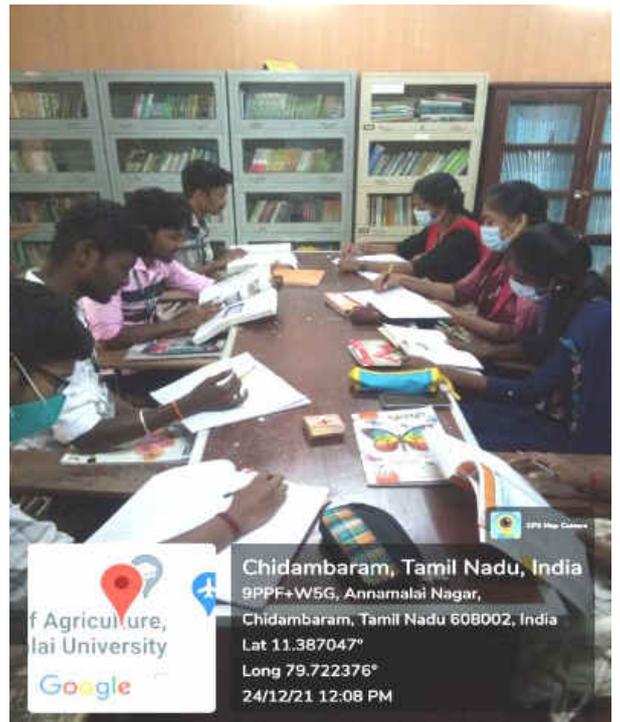
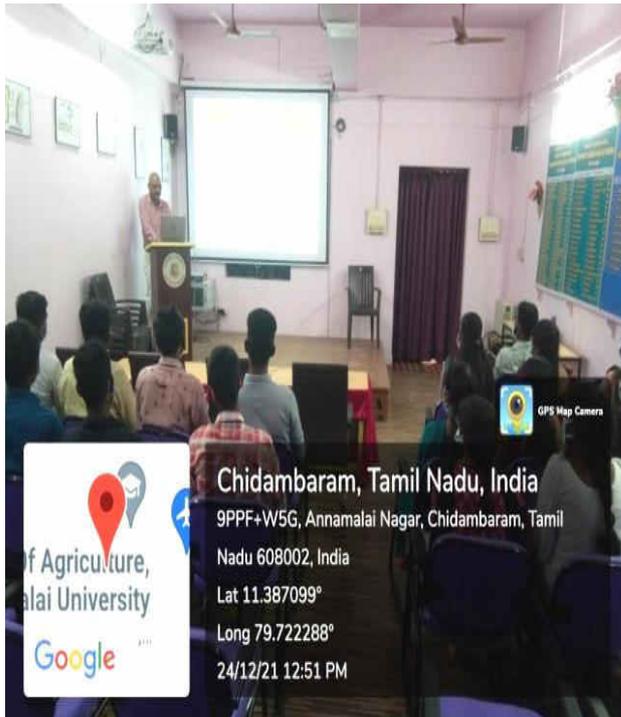
Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
13.	PG Lecture Hall (Molecular Biology & Biotechnology)	1	(30x12.73) 381.98	10	Smart class rooms are available with facilities like LCD projector (Smart board) and Smart TV
14.	Ph.D. Lecture Hall (Genetics & Plant Breeding)	1	(19.8x11) 220	10	Class rooms are available with Smart TV facility.
15.	Ph.D. Lecture Hall (Seed Science & Technology)	1	(19.8x11.6) 229.6	10	Class rooms are available with Smart TV facility.
16.	Ph.D. Lecture Hall (Molecular Biology & Biotechnology)	1	(17.8x9.2) 163.7	6	Class rooms are available with Smart TV facility.
17.	Field Demonstration Hall	1	(30x20) 600	30	For Practical classes
18.	Cytology & Cytogenetics Laboratory	1	(26.5x20) 530	20	The laboratory is equipped with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber).
19.	Seed technology Laboratory	2	(15x6.2) + (15x6.2) 94+94	5+5	The laboratory is equipped with seed technological instruments like seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
20.	Plant Tissue culture Laboratory	1	(10x8) 80	5	Plant tissue culture laboratory is equipped with laminar air flow chamber, autoclave and incubator, mini thermo cycler, electronic weighing balance, gel documentation chamber.
21.	Molecular Biology Laboratory	1	(30x11.3) 339	7	Molecular biology laboratory is equipped with major instruments like BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-8 transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge
22.	Department Library	1	(30x22) 660	25	The Department Library is provisioned with 612 text and reference books, PG and Ph.D. thesis, National and International journals, conference proceedings and volumes, 20 project reports.
23.	Dr. C.N.Sambandam Hi-Tech Hall	1	(30x22) 660	50	Hi-Tech presentation hall
24.	Pot Culture Yard-GPB	1	0.03 ha	-	To conduct preliminary evaluation trials and seed multiplication.
25.	Pot Culture Yard-SST	1	0.03 ha	-	To conduct preliminary trials and germination studies.
26.	Pot Culture Yard-PMBB	1	0.03 ha	-	For hardening and to conduct preliminary trials.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
27.	Plant Breeding Experimental Farm-Field no.13	1	0.73 ha.	-	Conducting trials for post graduate students and AICRIP trials
28.	Plant Breeding Experimental Farm-Field no.14	1	0.58 ha.	-	Conducting trials for post graduate students and AICRIP trials
29.	Plant Breeding Experimental Farm-Field no.15	1	0.80 ha.	-	Conducting trials for post graduate students and AICRIP trials
30.	Plant Breeding Experimental Farm-Field no.16	1	0.69 ha.	-	Conducting trials for post graduate students and AICRIP trials

**Instrument Facilities:**

S.No	Items	Nos.
1.	Dissection Microscope	46
2.	Compound Microscope	10
3.	Electronic Moisture Meter	2
4.	Electronic Balance	4
5.	Seed Germinator	2
6.	Automatic seed / Grain counter	1
7.	Hot air Oven	1
8.	BOD Incubator	1
9.	Fluorescence Microscope	1
10.	Centrifuge	3
11.	Growth Chamber	2
12.	Distillation Assembly	1
13.	PCR	3
14.	Gel document	2
15.	P <sup>H</sup> meter	2
16.	Orbital Shaker	1
17.	Photo synthetic meter	1
18.	Water Potential meter	1
19.	Electrophoresis	4
20.	Deep Freezer	3
21.	Refrigerator	2
22.	UV Nano spectrophotometer	1
23.	Sequencing Gel apparatus	1
24.	Ultra sonicator	1
25.	Desiccator	1
26.	Laminar Airflow chamber	2
27.	Autoclave	1
28.	Micro Air oven	2
29.	Water Bath	2
30.	Vaccum emasculator	1
31.	Triers	4
32.	Seed - Dividers	3
33.	Seed Blower	1
34.	Purity Working Board	4
35.	Seed Pelleting machine	1



**Hands on Training on Molecular Biotechnology (HTMB) 10 – 14, August 2017**

#### 6.4.5. Conduct of Practical and Hands-on-Training is provided

Course	Practicals / Hands-on training	Laboratory Visits
Principles of Biotechnology	<p>Preparation of buffers, reagents, media etc.,</p> <p>Extraction of DNA</p> <p>Gel electrophoresis &amp; autoradiography</p> <p>Agrobacterium-mediated &amp; direct gene transfer</p>	<p>Students are being taught with basic analytical chemistry and knowhow regarding normality, molarity, equivalent weight, and molarity for preparations of buffers / reagents / media / plant growth regulators which are frequently used in several molecular biology techniques.</p> <p>Students are given hands on experience in DNA extraction of Rice, blackgram, sesame and banana by following CTAB method</p> <p>Students are trained on agarose gel electrophoresis and autoradiography for DNA extracted from plants</p> <p>Students are demonstrated with gene gun and <i>Agrobacterium</i> mediated transformation using <i>cry1ACF</i> gene.</p>
Plant Molecular Biology	<p>Extraction of proteins</p> <p>Electrophoretic separation of proteins by SDS-PAGE</p> <p>Western blotting techniques</p>	<p>Students are taught to extract protein of various plant samples using Bradford and Lowrys method at molecular biology laboratory, Department of genetics and plant breeding.</p> <p>Students are trained on electrophoretic separation of proteins by SDS-PAGE technique.</p> <p>Students are given demonstration on western blot technique by using Biorad apparatus at molecular biology laboratory, Department of genetics and plant breeding.</p>
Plant Genome Engineering	<p>Extraction of plant genomic DNA by CTAB method</p> <p>Centrifugation &amp; chromatography techniques</p>	<p>Students are given hands on experience in DNA extraction from Rice, blackgram, sesame and banana by following CTAB method</p> <p>Students are trained with Centrifugation &amp; column and thin layer chromatography</p>

	<p>Restriction digestion DNA</p> <p>Amplification of DNA &amp; analysis of PCR products</p> <p>Primer designing, DNA sequencing &amp; construction of genomic library</p>	<p>techniques at molecular biology laboratory, Department of genetics and plant breeding. Students are given hands on experience in restriction digestion of DNA using EcoR1, BamH1 and HindIII enzymes</p> <p>Students are given hands on experience in DNA amplification, analysis of PCR products and quantification using UV nano spectrophotometer at molecular biology laboratory, Department of genetics and plant breeding.</p> <p>Students are trained with primer designing using Primer3 software, sanger method of DNA sequencing and genome library construction.</p>
Plant Hormones and Signalling	<p>Cell staining &amp; Histochemical techniques</p> <p>Study of various microscopy</p> <p>Bacterial conjugation, transduction &amp; transformation</p> <p>Isolation of nuclear &amp; cytoplasmic genome</p>	<p>Visit to Cytology Laboratory, Department of Botany, Annamalai University.</p> <p>Visit to central instrumentation Laboratory, Annamalai University.</p> <p>Trained with heat shock and electroporation methods of bacterial transformation</p> <p>Students are given hands on experience for extraction of DNA from mitochondria and chloroplast genome</p>
Commercial Plant tissue culture	<p>Preparation of nutrient media</p> <p>Inaculation of Explant, subculturing &amp; plant regeneration</p> <p>Gene cloning &amp; vector construction</p> <p>RT-PCR to study transgenic expression</p>	<p>Visit to plant tissue culture laboratory, KVK, Pondicherry</p> <p>Visit to plant tissue culture laboratory, KVK, Pondicherry</p> <p>Students are given hands on regarding gene cloning vector construction</p> <p>Students are given demonstration on RT-PCR technique for transgene expression</p>
Plant Omics and Molecular Breeding	<p>Physical &amp; Genetic mapping</p>	<p>Visit to The Centre for Plant Molecular Biology (CPMB), Tamil Nadu Agricultural University, Coimbatore</p> <p>Visit to The Centre for Plant Molecular</p>

	<p>Molecular mapping using RFLP, RAPD, AFLP, SNP, etc.,</p> <p>Gene prediction &amp; annotation using database</p> <p>DNA microarray &amp; chip technology</p>	<p>Biology (CPMB), Tamil Nadu Agricultural University, Coimbatore</p> <p>Visit to The Centre for Plant Molecular Biology (CPMB), Tamil Nadu Agricultural University, Coimbatore</p> <p>Visit to The Centre for Plant Molecular Biology (CPMB), Tamil Nadu Agricultural University, Coimbatore</p>
Research	<p>Research on Plant Micropropagation on medicinal plants, secondary metabolites through suspension culture, identification of novel phytochemicals through HPLC and GCMS, genomic diversification using molecular marker and genetic transformation using <i>cry</i> genes</p>	



### Study Tours / Industrial Visits

Students are also taken to different research stations like

Sl. No.	Place of Visit	Year
1	Kerala Agricultural University	2022
2	CTCRI Kerala	2017, 2022
3	Rajiv Gandhi Center for Biotechnology and Botanical Garden, Trivendrum, Kerala	2017, 2022
4	Dr. S. Thirugnanakumar, Coimbatore,	2022
5	Central Instrumentation Laboratory, Annamalai University	2017, 2018, 2022
6	NRCB, Trichy,	2022
7	IICPT, Tanjore,	2017, 2018,
8	Rasi seeds,	2022
9	Maha seeds.	2022
10	Plant Quarantine Centre, Trichy,	2022
11	Indian Institute of Pulse Research, Vamban,	2022
12	Regional Research Station, Aduthurai,	2017, 2022
13	State Seed Farm, Vandrayanpattu,	2022
14	KVK, Pondicherry	2022
15	PAJANCOA, Karaikal.	2017, 2018, 2022

### 6.4.6. Supervision of students in Ph.D.programme

#### Research Advisory Committee (RAC)

Each Ph.D. scholar shall have a Research Advisory Committee(RAC) to guide the scholar in carrying out his/her programme.

A Research Advisory Committee shall be constituted with the approval of the University for each candidate separately, immediately after his/her admission. The purpose of the RAC is to provide expert opinion on frontline research.

There shall be a Research Advisory Committee for every scholar consisting of not fewer than four with the Supervisor as Chairperson. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director DARE for information.

#### Research Supervisor:

Every scholar shall have a Research Supervisor (among the recognized guides), who will be appointed by the Vice-Chancellor on the recommendation of the Head of the Department and the Dean, Faculty of Agriculture. Research supervisors approved by the Vice-Chancellor only can be the guide for the scholars.

A teacher having Ph.D. with 5 years of service and PG teaching is eligible for teaching and guiding Ph. D. scholars. A teacher should have a minimum of three years of service before retirement for allotment of doctoral candidates.

The research supervisors who wish to avail leave/lien/deputation beyond a period of six months shall propose a Co-Supervisor in the concerned subject for the candidates registered with them and it may be intimated to the University well in advance. The final approval of the proposal rests with the Vice-Chancellor.

**Functions of the RAC:**The Research Advisory Committee shall have the following functions:

- Discuss, advice and recommend on all matters connected with the scholar's research from admission till the submission of the thesis.
- Approve the topic of research and the synopsis.
- Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D.
- If necessary, recommend and approve change of title of dissertation / thesis and change of Research Supervisor.
- Conduct and supervise the presentation by the candidate of the final draft of his/her proposed thesis for approval before the submission of synopsis of the thesis to the University and to give a certificate to this effect to be submitted along with the synopsis.
- The Research Advisory Committee will meet every semester.
- To scrutinize the research proposal / progress report submitted by the research scholar.
- To assess the conduct of experiments / field work, peruse laboratory notebooks, data recording, analysis, and publication.
- To review and endorse the annual progress report of the research scholar.
- To approve the synopsis of the thesis.
- The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department.

**Changes in RAC:**The proposals for changes in the RAC are to be sent to the Director, DARE, through HOD and Dean for approval, if it is keenly felt that such changes are absolutely necessary.

### **Change of Research Supervisor**

Change of Research Supervisor shall not be permitted as a routine. In exceptional cases, such change may be permitted, if valid reasons are provided by the candidates. The Committee headed by the Vice-Chancellor shall look into the request of the petitioner, if there is any conflict between the scholar and the research supervisor.

The Research Supervisor under whom the scholar has originally registered shall give a "No Objection Certificate" and the new proposed Research Supervisor should give a "Certificate of Willingness" to guide the candidate. The final decision will rest with the University. However, the Vice-Chancellor, on the recommendation of the RAC and Dean's Committee, has the right to assign a new research supervisor to the research scholar.

When the change of Research Supervisor is approved, the candidate shall work for a minimum of one year with the new Research Supervisor, if the topic of his/her research is different under the new supervisor, provided he/she fulfils the attendance requirements.

### **Change of Topic of Research**

Change of the specific area of research may be permitted within one year from the date of admission and request must be submitted with the recommendations of the RAC. In such cases, the minutes of the RAC meeting must include whether the course work undertaken by the research scholar is relevant to the new research area and the competence of the research supervisor in this field.

If the RAC is of the view that there is a major change in the specific area of research and is not relevant to the course work undertaken, the research scholar will have to go through the process of fresh examination pertaining to the area of research.

### **Absence of Member during Qualifying / Final Viva-Voce Examination**

Under extra-ordinary circumstances if the qualifying / final viva-voce examination to Ph. D. scholar has to be conducted in the absence of one or two RAC members, permission to conduct the examination by co-opting another member in such contingencies should be obtained from the Director, DARE in advance.

### **EVALUATION OF SCHOLAR'S PERFORMANCE**

All scholars shall abide by the rules for evaluating the course work under the semester system of education, as prescribed from time to time by the University.

### **QUALIFYING EXAMINATION**

Only those scholars who successfully complete the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of only *Viva voce* examination.

### **Minimum requirement for qualifying Viva voce Examination**

The scholars who have completed all the courses and earned a grade point average of not less than 7.5 will be permitted to appear for the qualifying examination. Scholars who do not satisfy these requirements shall not be permitted to take up the qualifying examination. The qualifying examination will be conducted after the successful completion of course work.

### **Selection of Examiner**

A panel of five external examiners for qualifying examinations shall be given by the RAC in consultation with HOD before three months of the date of completion of the

scholar's course work to the Director, DARE. One of them will be appointed as external examiner.

### **Qualifying Viva-Voce Examination**

The evaluation should cover both the research problem and theoretical background to execute the project. This shall assess the aptitude of the scholar and suitability of the scholar for the given research topic.

The RAC shall conduct the qualifying viva-voce examination with one external member, who shall be a specialist in the subject from outside the university.

The Head of the Department will monitor and coordinate the conduct of the qualifying viva. The performance of the candidate will be graded as Satisfactory / Unsatisfactory.

### **Communication of Results of Qualifying Examination**

The Research Supervisor shall act as chairperson for the examination committee and shall be responsible for communicating the results of the examination to the Director, DARE through HOD in the prescribed format.

### **Failure /Absence in Qualifying Viva-voce Examination**

When a scholar fails or absents for the qualifying viva-voce examination, he/she may apply again for permission to appear for re-examination to the Director, DARE with the recommendation of the RAC and Head of the Department.

A scholar, who applies for re-examination should attend viva-voce. Re-examination shall not take place earlier than one month after the first examination. It will be conducted by the RAC as previously indicated.

If a scholar fails in the re-examination, further re-examination will be considered on the recommendation of the RAC, HoD and Dean, Faculty of Agriculture. If the scholar fails in the qualifying examination, he/she is not permitted to register for further research credits in the next semester.

## **THESIS RESEARCH**

### **Selection of Topic**

The thesis research for the Ph.D. degree should be of the nature of a definite contribution to the subject and the results should be of sufficient importance to merit publication. The findings should have some practical utility or should lead to theoretical contribution.

The thesis shall be on a topic falling within the field of the major specialization and shall be the result of the scholar's own work. A certificate to this effect duly endorsed by the major advisor shall accompany the thesis

## **Research Proposal**

The research scholars shall present their broad area of research and submit a proposal to the Research Advisory Committee at the end of the first semester.

The research proposal has to be presented by the scholar in a meeting organized by the Head of the Department to get the opinion / suggestion of the faculties of the Department for improving it. Three copies of the research proposal in the prescribed format should be sent to the Director (DARE) through the Head of the Department for approval.

## **Evaluation of Thesis Research**

After assigning the research problem, for each semester, the scholar has to submit a detailed programme of work to be carried out by him/her during the semester in the prescribed proforma. After scrutiny and approval, a copy of the research programme has to be given to the scholar for carrying out the work during that semester.

Attendance register must be maintained in the department by HOD for all the scholars to monitor whether the scholar has 80% of attendance in research.

The scholar has to submit his/her research observation note book to the Research Supervisor, who will scrutinize the progress and sign the note book with remarks as frequently as possible. This note book will form the basis for evaluation of research progress.

After completion of 80% attendance for research and on or before the last day of the semester, the research scholars, shall submit Progress Reports in the prescribed format duly endorsed by the Research Advisory Committee to the Director, DARE until they submit their synopsis.

Failure to submit the progress reports shall entail automatic cancellation of registration.

The minutes of the meeting of the Research Advisory Committee along with enclosures will be sent to the Director, DARE.

Candidates who are recipients of fellowships such as JRF/SRF directly from any of the funding agencies/ shall send the progress reports and the utilization certificates in the format prescribed by the respective funding agency through proper channel.

## **SUBMISSION OF THESIS**

The research credits registered in the last semester should be evaluated only at the time of the submission of thesis, by the RAC. Scholars can submit the thesis at the end of the final semester.

If a scholar has completed the thesis before the closure of the final semester, the research supervisor can convene the RAC meeting and take decision on the submission of the thesis, provided the scholar satisfies 80 per cent attendance requirement.

The candidate shall be allowed to submit his/her thesis after the completion of stipulated period. A grace period of 30 days may be allowed to submit the thesis after the prescribed duration. If the thesis is not submitted even after the grace period, the scholar shall pay the tuition fee for the year.

If a scholar is not able to submit the thesis within the grace period, the scholar has to re-register for the credits in the forthcoming semester. The scholar who re-registers the credits after availing of the grace period will not be permitted to avail of grace period for the second time. The Head of the Departments can sanction the grace period based on the recommendation of advisory committee and a copy of the permission letter along with the receipt for payment of fine should accompany the thesis while submission

Three copies of the thesis (in the approved format) shall be submitted together with the submission fee not later than three months after the submission of the synopsis.

No dues certificates from the Department and Central Libraries, Hostel, Stores, etc. must be submitted with the thesis copies. The Research Supervisor shall forward the thesis copies with the enclosures to the Director, DARE through the HOD and the Dean. A soft copy of the thesis in PDF format as prescribed by Shodhganga, shall also be submitted.

The Ph.D. scholars have to publish a minimum of two research papers in NAAS rated journals with 5 and above rating/ Scopus / Web of Science indexed journals at the time of publication of the papers. The synopsis will be accepted for processing only after showing evidences for publications of two such research papers.

The soft copy of the thesis shall be checked for plagiarism using Turnitin software. Beyond the percentage of reproduction prescribed by UGC, the thesis will not be accepted for valuation.

#### **Pre-submission Presentation**

The pre-submission presentation of the thesis is a requirement to enrich the scholar and to fine tune his/her research presentation. This presentation shall be conducted before the submission of the synopsis in the presence of the RAC, Supervisor/Co-Supervisor, Faculty members, Research Scholars and/or P.G. Scholars.

The scholar is expected to present the first draft of the research work or explain the findings / problems faced. The gathering may suggest ideas / references to be consulted / suggestions to improve the work and so on.

A report on this event along with an attendance sheet shall be forwarded by the Research Supervisor with the endorsement of the RAC and HOD to the Director, DARE.

#### **Submission of Synopsis**

The submission of synopsis may be permitted 3 months before the completion of required duration on successful completion of course work.

The Research Scholar shall submit 3 copies of the synopsis approved by the Research Advisory Committee along with a soft copy to the Director, DARE through the Research Supervisor, the HOD and Dean of the respective Faculty.

Guidelines for the preparation of the synopsis are appended in Appendix I. Name of the candidate and name of the supervisor shall not be mentioned anywhere in the synopsis; enrolment number of the candidate alone shall be given. A model cover page for a synopsis is given in Appendix III.

### **Guidelines for Preparation of Thesis**

The thesis shall not exceed 250 pages excluding the Bibliography, Appendices, etc. If it exceeds the specified number of pages, the Research Supervisor should write to university with the reasons and get prior approval from the University. The candidate shall pay a penalty for the excess number of pages as decided by the Deans Committee. The thesis should be in A4 size.

The specification for the preparation of the thesis is given in Appendix II. A model cover page for a thesis is given in Appendix IV.

The thesis shall be typed on both sides of the page in order to save paper and postage. The thesis shall contain a Certificate from the guide (Appendix V) specifying that the thesis submitted is a record of research work done by the candidate during the period of study under him/her and that the thesis has not previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or similar title.

A statement from the guide indicating the extent to which the thesis represents independent work on the part of the candidate should also be made.

### **VALUATION OF THE THESIS**

#### **Panel of Examiners**

The thesis submitted in partial fulfilment of the Ph.D. degree shall be evaluated by two external experts one from within the country and the other from outside the country appointed by the Vice-Chancellor on the recommendation of the Research Supervisor of the RAC, HOD and Dean.

The external experts shall be chosen from a panel of at least five names of specialists separately from within the country and outside the country in the particular field, suggested by the Research Supervisor.

The external experts shall send their evaluation reports on the thesis directly to the Director, DARE along with the copy of the evaluated thesis. The Director, DARE on receipt of the reports from the two examiners will send them to the concerned Research Supervisor who is the convener of viva-voce board.

The Research Supervisor will send the consolidated report with his remarks to the Director, DARE through the Head of the Department. Based on the satisfactory reports of the evaluation, Viva-voce examination will be arranged.

After a scholar's thesis for Ph.D. degree is evaluated as indicated above, the thesis shall be finally accepted for the award only after the scholar satisfactorily completes the final Viva-voce examination.

The Viva-Voce board comprises the scholar's RAC with the addition of the external examiner who valued the thesis, and the HOD. If the HOD happens to be the Research Supervisor, the Dean, Faculty of Agriculture will nominate a senior member of the staff of the concerned Department as a member.

The candidate is expected to defend the thesis at the Viva-voce examination. The degree shall be awarded on the unanimous recommendation of the Viva-Voce board as satisfactory with regard to the thesis and the performance of the scholar in the final Viva-voce examination.

The recommendation of the Viva-Voce board shall be forwarded to the Director, DARE by the Research Supervisor through HOD and Dean which shall be signed by all members of the committee and the external examiner.

A candidate who is not successful (unsatisfactory) at the Viva-voce examination will be permitted to undergo the Viva-voce examination again within a period of three months.

**6.4.7. Feedback of stakeholders**

The feedback is obtained for every course at the end of each semester and the consolidated action taken report is presented in the following table.

Sl. No.	Stakeholders	Feedback	Action taken
1	Students	Requested special classes for slow learning students	Remedial classes are taken for slow learners.
2		Asked for free ICAR coaching classes.	Special coaching classes for ICAR and competitive examinations.
3		Expressed the need for air conditioned Seminar Hall with A/V facilities.	Established Hi-Tech seminar Hall with funding from Departmental alumni and contribution from department Faculties.
4		Requested for re-fencing of damaged segments.	Re-fencing Plant Breeding Farm for conduct of various field trials.
5		Asked facility to carry out rapid emasculation in short span of time in rice.	Vacuum emasculator for ease and rapid hybridization in rice.
6		Expressed the need for free access to online journals for research at Department itself.	Provided Wi-Fi INFLIB net / MYLOFT for easy access of journals for research.
7		Requested for more seating capacity and books.	Enhanced Department Library facilities in terms of space and inventory.
8		Asked separate area for preliminary screening.	Partitioning of Pot-Culture Yard for three disciplines of study.
9		Requested smart class room facility.	Smart TVs in classrooms for visual presentation of videos and power points.
10		Expected guidance for their Progression.	"WhatNext?!"-A student oriented guidance programme by Experts was conducted on 2022.

Sl. No.	Stakeholders	Feedback	Action taken
11	Students	Asked for exposure to become an entrepreneur.	<ul style="list-style-type: none"> <li>▪ Industrial Visits were made to several Government and private institutes.</li> <li>▪ Guest Lectures from entrepreneur.</li> </ul>
12		During COVID-19 Pandemic students requested for online classes and research updates.	Online-classes and International Webinars.
13		Placement services	Annual Recruitment of students by Private Sector Seed Companies.
14	Parents	Requested minimal Financial support for their wards.	Rs.2000/- financial aid per student for top ranking 3 students in each discipline of study have been disbursed to students in the last five years from the UGC-SAP.
15.		Expressed concern about the safety and progress of their wards.	<ul style="list-style-type: none"> <li>• Mentor-Mentee system was in place to cater the concern of the students.</li> <li>• Department Faculties also serve as Deputy Wardens in various Hostels.</li> </ul>
16	Farmers	Asked for latest developments and happenings.	PPVFRA Training programme to Farmers
17.		Asked for high yielding/remunerative varieties.	<ul style="list-style-type: none"> <li>▪ Annamalai Musk melon.</li> <li>▪ AU-1.</li> <li>▪ Anamalai-Brinjal.</li> <li>▪ AU -1 GSR Rice variety</li> </ul>
18.	Employers , those who come for campus placements banks, private sector seed companies etc.	Expected skilled and technically sound employable candidates with good communication ability.	<ul style="list-style-type: none"> <li>▪ Industrial Tie-up training arranged at various public/private sector.</li> <li>▪ Personality Development Classes</li> <li>▪ Mock-Interviews</li> <li>▪ Group Discussions and Brain Storming Sessions.</li> </ul>

## 6.4.8 Student intake and attrition in the programme for last five years

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
-	-	5	3	1	-	-	-	-	-

## Employment Details of Ph.D. scholars

Academic Year	Number of students graduated (Ph.D.)	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	-	-	-	-	-	-	-	-
2018-19	-	-	-	-	-	-	-	-
2019-20	-	-	-	-	-	-	-	-
2020-21	-	-	-	-	-	-	-	-
2021-22	-	-	-	-	-	-	-	-

## 6.4.9. ICT Application in Curricular Delivery

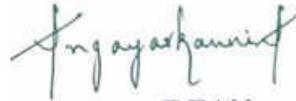
- Videos on Tissue culture, new possibilities of modelling and simulation, shared databases, collaborative tools, remote instrumentation for genetic improvement by gene transfer, protoplasm fusion (in the cell), varieties more tolerant of drought, salt, cold and metals, cloning, micropropagation, plotting the gene maps of plants, bioinformatics.
- Computer tools/Computer-aided algorithms are being used to analyse the behaviour of thousands of genes at a time and are creating a foundation of data for building integrated models of cellular processes
- Practical results have been obtained in identifying active genes in genomic sequences, assembling physical and genetic maps, and predicting protein structure.
- E-resources, PPTs and online journals are also used for effective dissemination of course content.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean ..... **Dr.A.Angayarkanni** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
Ph.D. Seed Science and Technology

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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#### 6.4. Self Study Report for the Programme

**Name of the Degree Programme: Ph.D. in Seed Science and Technology**

**Offered by: Department of Genetics and Plant Breeding**  
(UGC SAP DRS Phase II & DST FIST supported)

##### 6.4.1. Brief History of Ph.D. in Seed Science and Technology

The division of Agricultural Botany came into existence mainly to cater the instructional needs of UG degree in the year 1958. Later the division was upgraded as the Department of Agricultural Botany in the Faculty of Agriculture in 1980.

The Post graduate programme in Seed Science and Technology was started in the year 2006 in the Department of Agricultural Botany. Subsequently, in the year 2010 the Department was renamed as Department of Genetics and Plant Breeding. The Ph.D degree in Seed Science and Technology was offered from 2010..

Historical Itinerary	Year of Commencement/Period
Division of Agricultural Botany	1958
Ph.D. in Agricultural Botany	1965
The Division was upgraded as Department of Agricultural Botany	1980
M.Sc. (Ag.) in Genetics and Plant Breeding	1989
Ph.D. in Genetics and Plant Breeding	1992
M.Sc.(Ag.) in Seed Science & Technology	2006
The Department was renamed as Department of Genetics and Plant Breeding	2010
Ph.D. in Seed Science & Technology	2010
M.Sc. (Ag.) in Agricultural Biotechnology	2012
Ph.D. in Agricultural Biotechnology	2019
Renamed as M.Sc. (Ag.) in Plant Molecular Biology and Biotechnology	2019
Renamed as Ph.D. in Plant Molecular Biology and Biotechnology	2019
Renamed as M.Sc. (Ag.) in Molecular Biology and Biotechnology; Ph.D. in Molecular Biology and Biotechnology	2022

The Ph.D. degree programme in Seed Science and Technology, has a total of 75 credits (2017-18 to 2020-21) which includes 15 credits for major courses, 45 credits for Ph.D. thesis research, 08 credits for minor courses, 05 credits for supporting courses, 2 credits for seminar along with non - credit compulsory courses.

From 2021-22 onwards a total of 100 credits which includes 12 credits for major courses, 75 credits for Ph.D. thesis research, 06 credits for minor courses, 05 credits for supporting courses, 2 credits for seminar along with non - credit compulsory courses.

**Vision**

- To achieve the Status of excellence in Academic and Research
- To promote the use of quality seeds and seed treatment technology for diversifying farmers choice including use of local genetic resources.

**Goals**

- Impart quality education with instructional capacity
- To provide relentlessly pursue new horizons of seed technology through extensive research.
- .Obtain the expected dividends from the use of seeds of improved varieties.

**Objectives**

- To make awareness about seed certification procedures and quality seed production in all the economically important crops for students through Hands on Training.
- To undertake research on need based specific problems in seed science and technology and sort out their solution through scientific and standard procedure.
- Guide the seed techno graduates to identify their professional carrier and emerge as an entrepreneur.

**Strategic plan to achieve Vision and Goal (Seed Science and Technology)**

Goal	Objectives	Implementation of the plan	Performance Matrices/ Timeline	Outcome
Impart quality education with instructional capacity	To make awareness about seed certification procedures and quality seed production in all the economically important crops for students through Hands on Training	Up gradation of course content periodically.  Regular implementation of class and credit seminar to students  Industrial visit, State Seed Farm and Seed Processing Unit	Once in five years	Periodically updated curriculum which helped the students to gain new techniques in seed technology areas  Students were well trained in group discussion and media presentation.
To provide relentlessly pursue new horizons of seed technology through extensive	To undertake research on need based specific problems in seed science and technology	Guest lecture of the Visiting professor from the other Institutions and technical guidance from the private seed companies	Once in semester	Students got wide exposures in the seed technological subjects.  Make the completed PG

Goal	Objectives	Implementation of the plan	Performance Matrices/ Timeline	Outcome
research.	and sort out their solution through scientific and standard procedure.	Conducted training program in various areas of seed production and extraction techniques to student	Twice in the year	students become entrepreneur.
Obtain the expected dividends from the use of seeds of improved varieties.	Guide the seed techno graduates to identify their professional carrier and emerge as an entrepreneur	Technical guidance provided to the student to start the seed business through Training and Placement Cell	Once in a year	The Alumni Mr. U. Tamilmani, (2010-12 Batch) Dr. Dileep kumar (2009-11 Batch) Started successful seed companies in Salem and Cuddalore District

### Accomplishments

#### Research Collaborations

- The Department of Genetics and Plant Breeding has collaborated with various National and International agencies such as **IAEA, FAO, IRRI, IIRR, IIOR, and UGC.**
- The department has strong collaboration with **AICRIP (ICAR) and STRASA (IRRI) (saline tolerant breeding network)** programme.
- Faculties of the Department are actively engaged in **IRRI-Annamalai University (IRRI-AU) MoU on “Multiple Stress tolerant Rice Varieties for TamilNadu”** involving extensive evaluation of elite **Green Super Rice (GSR) lines** since 17.06.2020.

#### Research Fundings

The research environment of the Department got boosted up by funds from

- ✓ **UGC-SAP DRS Phase I & II (102.5 lakhs)**
- ✓ **DST FIST (Rs. 38 lakhs)**
- ✓ **Non-SAP (10 lakhs)**
- ✓ **RUSA (10 lakhs) and**
- ✓ **TNSCST.**

- ✓ **RGNF.**
- ✓ **Fly Ash mission from NLCIL.**

### Research Outcomes

- Standardized hand emasculatation and pollination method for hybrid seed production in Sesame is a major outcome of FAO/IAEA research project.
- Annamalai Melon.
- AU-1 rice are the notable contributions of the department.
- Annamalai Brinjal (National Aphid resistant check variety), a popular and major cultivated variety in Cuddalore district of Tamil Nadu.
- AU-1 GSR (Green Super Rice), an elite high yielding, multiple stress tolerant rice variety was released during December, 2020. It is cultivated in the districts of Nagapattinam, Mayiladuthurai, Cuddalore, Villupuram, Kallakurichi, Thiruvallur, Salem, and Madurai.
- Seed pelleting techniques for sesame, green gram and black gram using fly ash was developed through DST Project.
- Sesame seed hardening technique chicory medicinal herb extract was developed through UGC - MRP project
- Seed halogenation technique for sesame seed storage through TNSCST project
- Seed hardening techniques for paddy, Greengram and brinjal.
- SSR marker techniques for varietal identification.
- Standardized Bio pelleting using *Prosopis* spp.
- Standardization of tissue culture techniques for sesame, green gram and black gram was developed through DST Project.
- Black gram genotypes resistant to YMV was screened using molecular tools through UGC-GDA-XII plan innovative Research project.

### Achievements by Faculty

- Dr. C.N. Sambandam an eminent vegetable breeder and the first Head of the Department spearheaded the release of Annamalai Brinjal.
- Dr. S. Thiruganakumar's Doctoral research scholar Dr. R. Narasimman received **Jawaharlal Nehru Post Graduate Research Award from ICAR.**
- Dr. A. Anandan went for hands-on training at **International Rice Research Institute (IRRI), Philippines.**
- Dr. R. Eswaran had undergone training at **Ghent University, Belgium**
- Dr.S.Murugan was invited as **Visiting Professor** by the Dept. of Horticulture, **North Carolina State University, U.S.A.**
- Dr. S. Murugan was invited as **Visiting Scholar/Researcher** by the **Biomedical Sciences Research Institute, Ulster University, UK.**
- Dr. M. Prakash, Professor served as **UGC-SAP Co-Ordinator** for DRS Phase I and II.
- Dr. S. Murugan, Professor served as **UGC-SAP Deputy -Coordinator** for DRS Phase I and II.
- Dr. M. Prakash, Professor is currently serving as **Controller of Examinations**, Annamalai University since, January, 2022.

- Dr. S. Murugan, Professor is serving as **Joint-Director, Directorate of Research and Development (DRD)**, Annamalai University.
- Dr. S. Padmavathi, Professor is serving as **Academic Council Member**, Annamalai University from 2022 onwards.
- Dr. K. Saravanan, Professor is serving as **Faculty Co-Ordinator, IQAC Cell, Faculty of Agriculture** from 2020 onwards.
- Dr.T. Sabesan, Associate Professor is serving as **Deputy Director, Center for Alumni Relations**, Annamalai University since 2019.
- Dr. M. Venkatesan Associate Professor is serving as **Nodal-Officer, Disability Cell**, Annamalai University.
- Dr. S. Vennila, Assistant Professor is serving as **Associating Scientist, Center for Natural Farming and Sustainable Agriculture**.
- **IRRI-AU MoU Team of Department of Genetics and Plant Breeding include Dr. K. Saravanan, Dr. T. Sabesan, Dr.R.Elangaimannan and Dr. B. Sunilkumar as lead plant breeders.**
- **“AU-1 GSR”** - A multi stress tolerant rice variety was released by IRRI-AU MoU Team of Department of Genetics and Plant Breeding.

The faculties also visited various countries and attended research oriented conferences and workshops. They are also actively involved in professional development activities by becoming members in various professional bodies and published research articles in various peer reviewed and high impact factor journals. The majority of the Staff in this discipline has qualified the National Eligibility Test.

#### Departmental Research Metrics :

Topic	Metrics	Source
'h' Index	11	IRINS, AU
i 10 Index	7.9	Google Scholar
Cross-Ref Citations	338	IRINS, AU
Total Citations	747	IRINS, AU

#### Special Lectures

- Dr.V. Vijayakumar, Eastern Connecticut State University, USA
- Prof. C. Ramasamy, Former Vice Chancellor (TNAU), Coimbatore.
- Dr. K.K.Vinod, Principal Scientist, IARI, Regional Centre, Aduthurai.
- Dr. R. Vijayaraghavan, Dean, Adhiyaman College of Agriculture and Research, Krishnagiri.
- Dr.Mohan Andrew Savery, Senior Rice Breeder, KVK, Puducherry
- Dr. M. Subramanian, Former Director of Research, TNAU
- Dr.MuraliGopal, Principal Scientist, ICAR- Central Plantation Crops Research Institute, Kerala.

- Dr. S. Thirumeni, Professor & Head, PAJANCOA, Karaikal.
- Dr. J. Kannan Bapu, Former Registrar, TNAU
- Dr. Muralidharan, Director, Indian Institute of Pulses Research
- Dr. M. Mageswaran, Director, CPBG, TNAU
- Dr. N. Nadarajan, Professor, Tamil Nadu Agricultural University.
- Mr. Umakanth Dubey, Deputy Registrar, PPVFRA, New Delhi
- Ms. Subashini Sridar, Centre for Indigenous Knowledge Systems (CIKS)

#### International and National Seminars/Conferences/Workshops - Organised (2017-2022)

Topic	Metrics
International Conference	01
National Seminar/Conference/Webinars	09
National/ Workshop	08

The department successfully organized the first policy meeting on “National Consultation Workshop on Agro-biodiversity Hotspots and Access and Benefit Sharing” of National Biodiversity Authority (NBA) and PPVFRA.

In March, 2018 the department successfully organized the Plant variety protection Awareness programme for Farmers under the aegis of PPVFRA.

#### Research Publications and Books (2017-2022)

Journal Articles	302
Books & Book Chapters	91

ICAR has recommended two books namely, “A Text book of Seed Science and Technology” “Quantitative Genetics and Crop Breeding” authored by Dr. S. Thirugnanakumar and Co-authors as well as Dr. S. Padmavathi and Co authors for the aspirants of PG and Ph.D. courses in ICAR and affiliated colleges.

#### Student Progression

Students are constantly motivated to take up national level competitive examinations like National Eligibility Test, ARS and were guided through coaching classes with supporting books. The Department is striving hard to produce excellent researchers with outstanding skill sets. The faculty members periodically organize Seminars, Trainings and workshops to impart knowledge on recent development in crop improvement.

Thrust has been given to impart knowledge to students on various aspects of Seed Science and Technology at Doctoral level. This ultimately encourages the students to improve their competing ability to express their ability in the competitive examinations. Additionally, coaching classes are being conducted to make the students, facing

competitive world. This enables the students to secure placements in World Class coveted overseas institutions, most often with full-funding.

Remedial classes are being offered for slow learners for easy understanding and enhance their performance. By taking Guest lectures with renowned scholars, the knowledge and recent trends of the subjects are being updated.

### Alumni Support

Alumni of the Department placed in SAUs, ICAR Institutions, International Institutes, and Private Sectors act as a major driver of growth providing technical guidance, essential infrastructure, CSR funding and placement.

The alumni donations has resulted in realizing the Dr. C.N. Sambandam Hi-Tech Presentation Hall.

### Departmental Endowment Awards for Students

Sl. No.	Name of the Endowment award/medal for PG
1.	Srilochani Varadarajulu Prize for top ranking student
2.	Vallar Endowment prize.
3.	Dr. C.N. Sambandam Endowment Award for Seed Science & Technology subject for first rank holder in Seed Science & Technology

### Department Snapshot

Category	Total period	Last five year period (2017-2022)
Number of Publications (Journal Articles)	883	345
Number of Publications (Seminars / Conferences/Symposia)	240	80
Number of Books & Book Chapters	161	22
Numbers of Projects obtained	30	11
Grants (Mobilization (Lakh rupees)	343.13	194.26
Number of Ph.Ds. Produced	5	1
Number of PGs Produced	107	44
Number of Seminars/Conference	32	14

#### 6.4.2. Faculty Strength

The permanent faculty strength appointed in the Department of Genetics and Plant Breeding is furnished below.

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Professor*	9	9	-	1
2.	Associate Professor*	10	10	-	1
3.	Assistant Professor*	12	12	-	3
	<b>Total</b>	<b>31</b>	<b>31</b>	<b>-</b>	<b>5</b>

\*Assigned responsibilities for multiple programmes

### Credentials of the Faculty

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others	11	7.94	747
1.	Dr. S. Padmavathi © Professor and Head	26	Hybrid seed production, Seed Treatment techniques	19	3	20	3	1	6	3	114
2.	Dr. M. Prakash ©# Professor	26	Stress Physiology and plant Molecular Biology	25	8	72	15	6	17	31	1142
3.	Dr. S. Murugan *# Professor	26	Cytogenetics, Heterosis Breeding, Molecular Plant Breeding, Molecular marker technology	15	3	50	9	2	9	9	242
4.	Dr. S.Thirugnanakumar * Professor (Retired on 30.06.2022)	26	Molecular genetics, Biotechnology, Mutation Breeding, Recombination breeding	28	7	90	5	2	11	11	296

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
5.	Dr. P. Senthil Kumar *# Professor	24	Heterosis Breeding, Sesame Breeding, Musk melon breeding, Molecular marker technology	22	3	31	-	2	13	16	512
6.	Dr. Y. Anbuselvam * Professor	26	Genetics and Cytogenetics, Biometrics, Biotechnology	23	6	56	10	2	11	12	313
7.	Dr. P. Thangavel * Professor	25	Biometrics, Genetics and Pulse Breeding	18	1	57	3	1	9	9	248
8.	Dr. K. Saravanan * Professor	24	Quantitative Genetics, Biometric analysis	18	4	98	4	3	15	27	1001
9.	Dr. N. Senthil Kumar * Associate Professor	22	Heterosis Breeding in Vegetables	15	3	72	19	9	8	6	231
10.	Dr. Y. Anitha Vasline * Associate Professor	22	Mutation Breeding,	15	1	29	8	4	7	3	89

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
	Associate Professor		Cytogenetics								
11.	Dr. B. Sunil Kumar *# Associate Professor	20	Physiological and Molecular genetics in Pulses	11	1	61	6	4	14	30	1310
12.	Dr. J. Gokulakrishnan * Associate Professor	21	Heterosis Breeding in Rice & Maize	13	2	43	10	6	7	6	169
13.	Dr. R. Elangaimannan *# Associate Professor	21	Heterosis Breeding, Biometrics, physiology & Plant Biotechnology	13	1	43	10	3	6	6	188
14.	Dr. T. Sabesan *# Associate Professor	20	Heterosis breeding, and Molecular Plant Breeding for Abiotic stress.	11	-	61	18	8	13	16	615
15.	Dr. V. Anbanandan * Associate Professor	18	Sugarcane Breeding, Rice Breeding	7	-	33	9	2	5	2	98

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
							11	7.94	747		
16.	Dr.G Sathiyarayanan © Associate Professor	19	Seed Halogenation. Hybrid seed production	16	-	90	29	2	8	6	222
17.	Dr. S. Ezhil Kumar © Associate Professor	19	Molecular Varietal identification, Seed Production and Seed Testing.	15	-	21	5	2	2	1	20
18.	Dr. P. Karthikeyan * Associate Professor	17	Rice Saline Tolerant	7	-	46	9	3	6	5	171
19.	Dr. M. Venkatesan * Associate Professor	17	Rice Breeding, Innovative Breeding, Hybrid rice	10	-	57	9	2	9	9	241
20.	Dr. R. Ebneezer Baburajan * Associate Professor	19	Heterosis Breeding, Resistance Breeding	6	-	34	19	4	3	1	36
21.	Dr. R. Eswaran *# Assistant Professor	19	Heterosis Breeding, Molecular	12	-	63	22	5	13	15	503

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022) <sup>6</sup>
				PG	PhD		Journal	Others			
							11	7.94			
			Breeding								
22.	Dr. C. Praveen Sampath Kumar *# Assistant Professor	18	Heterosis Breeding in Bhendi	10	-	73	19	3	8	7	188
23.	Dr. J.L. Joshi *# Assistant Professor	16	Heterosis Breeding in Bhendi	8	-	43	11	2	2	1	31
24.	Dr. R. Anandan # Assistant Professor	16	Plant Molecular Biology and Biotechnology	8	-	33	5	1	8	6	224
25.	Dr. K.R. Saravanan *# Assistant Professor	16	Screening genotypes for saline Ecosystem	12	-	72	21	4	5	1	58
26.	Dr. S. Vennila *© Assistant Professor	16	Mutation Breeding, Cytogenetics	8	-	43	27	5	5	3	75
27.	Dr. S. Suganthi *© Assistant Professor	16	Recombination Breeding, Crop Diversity Analysis	8	-	41	26	4	5	3	105
28	Dr. S. Ranjith	14	Rice and Sesame	8	-	31	24	3	5	2	72

Sl. No	Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students guided		Total Number of publications	Total Number of publications (2017-2022)		h index	i 10 index	Citations (as on 05/08/2022)6
				PG	PhD		Journal	Others			
							11	7.94	747		
	Rajaram *© Assistant Professor		Breeding								
29.	Dr. A. Kamaraj © Assistant Professor	13	Pre sowing seed enhancement treatment, Seed testing	7	-	34	18	2	3	2	58
30.	Dr. P. Satheesh Kumar *© Assistant Professor	13	Heterosis Breeding, Mutation Breeding.	7	-	50	18	4	6	4	160
31.	Mr. V. Arivoli * Assistant Professor	12	Recombination Breeding	-	-	0	-	-	-	-	-
32.	Dr. R. Narayanan *© Assistant Professor	12	Recombination breeding, Mutation Breeding	7	-	15	8	2	2	1	23

\* - Genetics and Plant Breeding, ©- Seed Science and Technology, # - Molecular Biology and Biotechnology

## List of Project Handled - Last five years

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
1.	Screening Bhendi genotypes ( <i>Abelmoschus esculentus</i> (L.) moench) (rice fallow) for resistance to yellow vein mosaic virus disease combined with high yield Suitable for Coastal Ecosystem.	N. Senthil Kumar	2013-2017	UGC	15.42
2.	Exploitation of medicinal herbs to alleviate moisture stress and enhancing yield potential in sesame ( <i>Sesamum indicum</i> L) under rainfed condition through molecular approach	Dr. G. Sathiya Narayanan Dr. B. Sunil Kumar Dr. R. Anandan	2013-2017	UGC	7.95
3.	DST -FIST	Dr. S. Murugan	2013-2018	DST	38.00
4.	Development of stress tolerance varieties for coastal regions of TamilNadu in mandate crops (UGC SAP DRS Phase II)	Dr. M. Prakash Dr.S.Murugan	2015-2020	UGC	102.50
5.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic back ground of Black gram ( <i>Vignamungo</i> (L.)	Dr. S. Murugan Dr. M. Prakash Dr. R. Anandan Dr. J. Gokulakrishnan	2016 -2017	UGC	1.25
6.	Molecular markers validation for yellow mosaic virus resistance in diverse genetic backgrounds of blackgram ( <i>Vignamungo</i> L.) (DST PURSE Phase II)	Dr. S. Murugan	2018-2021	DST-PURSE	5.00
7.	Green Super Rice for TamilNadu: Assessing multiple abiotic and biotic stress tolerance and yield potency under varying environment for	Dr. R. Elangaimannan Dr. K. Saravanan Dr. T. Sabesan	2021-2023	RUSA	10.00

Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
<b>Government Funded Projects</b>					
	sustaining production and ensuring nutritional integrity	Dr. B. Sunilkumar Dr. S. Murugan			
8.	Technology development for biofortification through micronutrients and bioactive compounds for protection and enhancement of human health in coastal ecosystem	Dr. Elayaraja Dr. N. Senthilkumar	2022-2024	RUSA	10.13
<b>TOTAL (A)</b>					<b>190.25</b>
<b>Private Sector Projects</b>					
Sl.No.	Title of the Project	Name of Principal investigator & Co principal investigator	Period	Sponsoring agency	Out lay (In lakh rupees)
1.	Efficacy trials with Modulin on the expression ,growth ,development and yield of rice crop	Dr. G. Barathan Dr. S. Murugan	2016-2017	T-Stanes and company Ltd.,Coimbatore	2.10
2.	Evaluation of Methyl violet Dye in the formulation of Carboxin 37.5% +Thiram 37.5% WS on groundnut.	Dr. T. Sabesan	2018 - 2019	Arysta Life Science, Mumbai	0.91
3.	Digitalization of data on Crop cultivation practices of major Agricultural and Horticultural crops	Dr. S. Murugan	2018-2019	Bayer crop Science	1.00
<b>TOTAL (B)</b>					<b>4.01</b>
<b>TOTAL A+B</b>					<b>194.26</b>

## Awards/Recognitions/Countries visited by Faculty

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
1	Dr.S.Murugan	Visiting Professor, North Carolina State University (2017) Fellow of Indian Society of Genetics and Plant Breeding, New Delhi	U.S.A , Water melon and cucumber breeding, North Carolina State University, U.S.A
2	Dr. G. Sathyanarayanan	Excellence in Research Award (2017)	S & T SIRI, Telangana
3	Dr. M. Prakash	Best research publications award, 2012-2017. J JChinoy Gold Medal Award- Indian Society of Plant Physiology, 2017. Fellow - Indian Society of Plant Physiology, New Delhi, 2015. (FISPP). Fellow - National Academy of Biological Sciences, Chennai. 2016 (FNABS).	
4	Dr.S.Thirugnanakumar	Fellow of Indian Society of Oil Seed Research, Fellow of HIND AGRI-HORT Society. ICAR Citation for best Thesis award 2007 Dr.Kannaiyan endowment - Best researcher award -2018	
5	Dr.R. Anandan	Best oral presentation award (2017)	National Conference on Innovations in Biotechnology at Madurai Kamaraj University during 14 <sup>th</sup> & 15 <sup>th</sup> Dec., 2017.
6	Dr. T. Sabesan	Editorial Board Member (2017 onwards)	Journal of Innovative Agriculture (eISSN: 2394-5389)
7	Dr. R.Eswaran	Summer course on "Modern Breeding Techniques for the Improvement of leguminous plants" (2017).	Institute of plant biotechnology for developing countries , Ghent University , Belgium
8	Dr. K.R. Saravanan	Scientist of the year award (2018)	ICFA, Jharkand
9	Dr. K.R. Saravanan	Outstanding Breeder Award (2019)	PRAGATI, Jharkand
10	Dr. S. Murugan	Member, Panel of Examiners, TamilNadu Public Service Commission (TNPSC) ( 2019)	

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
11	Dr. T. Sabesan	Confidential work at TamilNadu Public Service Commission (TNPSC), Chennai (2019)	(TNPSC), Chennai
12	Dr. M. Venkatesan	Best Oral Presentation award (2019)	University of Hyderabad
13	Dr. S. RanjithRajaram	Best Oral Presentation (2019)	PRAGATI, Jharkhand
14	Dr.T.Sabesan	Best paper Award (First Place) in the session Genetics (2020)	In the 6 <sup>th</sup> National Conference in Agricultural Scientific Tamil held International Institute of Tamil Studies, Chennai during Dec 21-22, 2020.
15	Dr.B. SunilKumar	Outstanding Scientist Award (2018)	Conferred by the Society of Tropical Agriculture, New Delhi
16	Dr. G. Sathyanarayanan	Best Researcher Award (2020)	ICEACBS, Puducherry
17	Dr. M. Venkatesan	Best Scientist Award (2020)	ICEAACBS, Puducherry
18	Dr. S. Thirugnanakumar	Editorial member for the journal "Advances in Plant Sciences"	
19	Dr. T. Sabesan	Reviewer Excellence Certificate (2020)	<i>ActaEcologicaSinica</i> (Elsevier), Agricultural Science Digest (ARCC)
22	Dr. S. RanjithRajaram	Academic Excellence Award (2021)	Institute of Researchers, Wayanad, Kerala
23	Dr. M. Venkatesan	Best Teacher Award (2021)	Global Management Council, Ahmadabad
24	Dr. Y. Anbuselvam	Reviewer Excellence Award (2021)	ARCC Journal
25	Dr. T. Sabesan	Excellence in Reviewing (2022)	International Journal of Plant & Soil Science
26.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Asian Journal of Biotechnology and Genetic Engineering
27.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2021)	Current Journal of Applied Science and Technology
28.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	International Journal of Environment and Climate Change

Sl.No.	Name of the Faculty	Awards/Recognitions	States & Countries visited / purpose
29.	Dr. S. Vennila	Certificate of Excellence in Reviewing (2022)	Annual Research and Review in Biology
30.	Dr. S. Vennila	Best Oral Presentation (2018)	Dept. of Genetics and Plant Breeding, Faculty of Agriculture, Annamalai University
31.	Dr. S. Vennila	Best Oral Presentation (2020)	Dept. of Plant Pathology, Faculty of Agriculture, Annamalai University
32.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University
33.	Dr. S. Vennila	Best Oral Presentation (2022)	Dept. of Agrl. Extention, Faculty of Agriculture, Annamalai University
34.	Dr. G. Sathiyarayanan	Best Poster Presentation (2022)	Dept. of Soil Science & Agrl. Chemistry, Faculty of Agriculture, Annamalai University

### 6.4.3. Technical and Supporting staff

The responsibility of the technical and supporting staff of the Department of Genetics and Plant Breeding is given below.

Sl. No.	Sanctioned posts	Sanctioned	Filled	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Assistant*	4	4	-	1
2.	Lab assistant*	4	4	-	2
3.	Field assistant*	5	5	-	2
<b>Total</b>		<b>13</b>	<b>13</b>	<b>-</b>	<b>5</b>

S. No.	Sanctioned post	Staff in place	Responsibilities
1.	Supporting Staff*	4	<ul style="list-style-type: none"> <li>Assisting in Data processing and documentation.</li> <li>Maintenance of office files and official records.</li> <li>Execution of purchase and settlement of bills.</li> <li>PG and Ph.D admissions work</li> <li>UG, PG and Ph.D Examination works</li> <li>Computer typing works.</li> </ul>
2.	Technical Staff* (Department)	4	<ul style="list-style-type: none"> <li>Assisting laboratory classes.</li> <li>Supervision of labourers</li> <li>Maintenance of stock registers.</li> </ul>
	Technical Staff* (Research)	3	<ul style="list-style-type: none"> <li>Layout of field trials.</li> <li>Supervision of labourers</li> <li>Maintenance of stock registers.</li> </ul>
3	Field Staff*	2	<ul style="list-style-type: none"> <li>Layout of field trials.</li> <li>Recording of research trial observations.</li> </ul>

\*Assigned responsibilities for multiple programmes

#### 6.4.4. Classrooms and Laboratories

Sl.No.	Abstract of Facilities	Numbers
1.	HOD Room	1
2.	Office Room	1
3.	Staff Rooms	5
4.	UG Laboratories	3
5.	PG Lecture Halls	3
6.	Ph.D. Lecture Halls	3
7.	Field Demonstration Hall	1
8.	PG & Ph.D. Laboratories	5
9.	Department Library	1
10.	Hi-Tech Hall	1
11.	Pot Culture Yard	3
12.	Plant Breeding Experimental Farm (Field No. 13,14,15 & 16)	4

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
1.	HOD Room	1	(15x9.7) 145.5	1	-
2.	Office Room	1	(16x9.7) 155.2	3	-
3.	Staff Room-1	1	(17.8x9.2) 163.76	2	-
4.	Staff Room-2	1	(17.8x9.2) 163.76	3	-
5.	Staff Room-3	1	(17.8x9.2) 163.76	3	-
6.	Staff Room-4	1	(17.8x9.2) 163.76	3	-
7.	Staff Room-5	1	(31.5x19.4) 611.1	13	-
8.	UG Laboratory-1	1	(30x36.2) 1086.75	50	OHP projector, LCD television, monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
9.	UG Laboratory-2	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
10.	UG Laboratory-3	1	(30x20.5) 616.92	35	Monocular microscope, dissecting microscope, digital compound microscope, digital microscope.
11.	PG Lecture Hall (Genetics & Plant Breeding)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like LCD projector and Smart TV.
12.	PG Lecture Hall (Seed Science & Technology)	1	(30x15.12) 453.6	20	Smart class rooms are available with facilities like Smart TV

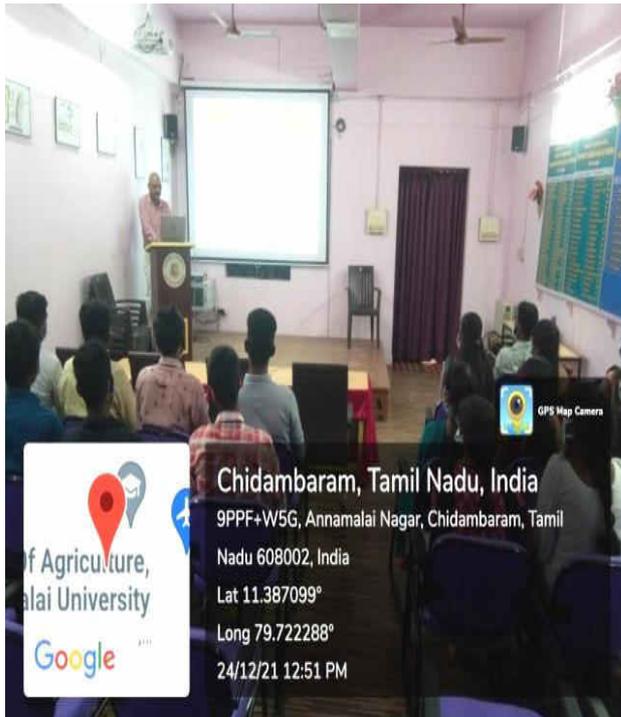
Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
13.	PG Lecture Hall (Molecular Biology & Biotechnology)	1	(30x12.73) 381.98	10	Smart class rooms are available with facilities like LCD projector (Smart board) and Smart TV
14.	Ph.D. Lecture Hall (Genetics & Plant Breeding)	1	(19.8x11) 220	10	Class rooms are available with Smart TV facility.
15.	Ph.D. Lecture Hall (Seed Science & Technology)	1	(19.8x11.6) 229.6	10	Class rooms are available with Smart TV facility.
16.	Ph.D. Lecture Hall (Molecular Biology & Biotechnology)	1	(17.8x9.2) 163.7	6	Class rooms are available with Smart TV facility.
17.	Field Demonstration Hall	1	(30x20) 600	30	For Practical classes
18.	Cytology & Cytogenetics Laboratory	1	(26.5x20) 530	20	The laboratory is equipped with- 4°C refrigerator, -20°C deep freezer, ultra low temperature freezer (-80°C), pharmaceutical refrigerator (4°C), versatile environmental test chamber (plant growth chamber).
19.	Seed technology Laboratory	2	(15x6.2) + (15x6.2) 94+94	5+5	The laboratory is equipped with seed technological instruments like seed pelleting machines, seed counter, digital moisture meter, portable Photosynthetic unit, seed coater, precision divider (gamete type), purity work board and Triers.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
20.	Plant Tissue culture Laboratory	1	(10x8) 80	5	Plant tissue culture laboratory is equipped with laminar air flow chamber, autoclave and incubator, mini thermo cycler, electronic weighing balance, gel documentation chamber.
21.	Molecular Biology Laboratory	1	(30x11.3) 339	7	Molecular biology laboratory is equipped with major instruments like BIORAD-30 wells, GENEI-gel rocker, thermal cycler- gel documentation system , GENEI-gel electrophoresis-8 transilluminator, SDS PAGE apparatus (small, vertical), 15 ml cooling centrifuge
22.	Department Library	1	(30x22) 660	25	The Department Library is provisioned with 612 text and reference books, PG and Ph.D. thesis, National and International journals, conference proceedings and volumes, 20 project reports.
23.	Dr. C.N.Sambandam Hi-Tech Hall	1	(30x22) 660	50	Hi-Tech presentation hall
24.	Pot Culture Yard-GPB	1	0.03 ha	-	To conduct preliminary evaluation trials and seed multiplication.
25.	Pot Culture Yard-SST	1	0.03 ha	-	To conduct preliminary trials and germination studies.
26.	Pot Culture Yard-PMBB	1	0.03 ha	-	For hardening and to conduct preliminary trials.

Sl.No.	Facility	Numbers	Area (Sq. Ft.)	Seating capacity	Descriptions and equipments housed
27.	Plant Breeding Experimental Farm-Field no.13	1	0.73 ha.	-	Conducting trials for post graduate students and AICRIP trials
28.	Plant Breeding Experimental Farm-Field no.14	1	0.58 ha.	-	Conducting trials for post graduate students and AICRIP trials
29.	Plant Breeding Experimental Farm-Field no.15	1	0.80 ha.	-	Conducting trials for post graduate students and AICRIP trials
30.	Plant Breeding Experimental Farm-Field no.16	1	0.69 ha.	-	Conducting trials for post graduate students and AICRIP trials

**Instrument Facilities:**

S.No	Items	Nos.
1.	Dissection Microscope	46
2.	Compound Microscope	10
3.	Electronic Moisture Meter	2
4.	Electronic Balance	4
5.	Seed Germinator	2
6.	Automatic seed / Grain counter	1
7.	Hot air Oven	1
8.	BOD Incubator	1
9.	Fluorescence Microscope	1
10.	Centrifuge	3
11.	Growth Chamber	2
12.	Distillation Assembly	1
13.	PCR	3
14.	Gel document	2
15.	PH meter	2
16.	Orbital Shaker	1
17.	Photo synthetic meter	1
18.	Water Potential meter	1
19.	Electrophoresis	4
20.	Deep Freezer	3
21.	Refrigerator	2
22.	UV Nano spectrophotometer	1
23.	Sequencing Gel apparatus	1
24.	Ultra sonicator	1
25.	Desiccator	1
26.	Laminar Airflow chamber	2
27.	Autoclave	1
28.	Micro Air oven	2
29.	Water Bath	2
30.	Vaccum emasculator	1
31.	Triers	4
32.	Seed - Dividers	3
33.	Seed Blower	1
34.	Purity Working Board	4
35.	Seed Pelleting machine	1



#### 6.4.5. Conduct of Practical and Hands-on-Training is provided

Practical experiments are conducted during the practical classes and imparted with experimental methodology on seed structure, sampling, germination test, seedling evaluation, tetrazolium test and moisture estimation. The existing students and staff ration 1:10. Interactive learning methodology is adopted to make effective learning of the students. Theory classes are handled in single batches. Seminar presentation and assignments are allotted to the students as and when necessary.

Course	Practicals / Hands-on training	Laboratory / Field Visits
Crop Evolution	Study of various types of flowers of monocot and Dicot Pollen Morphology.  Pollen viability studies	Collection of flowers of different crops and study about floral parts  The students have been trained in microscopy and dissection of plant specimens.  Through Acetocaramine dye
Hybrid Seed Production Technology	Exposure about various pollination systems in crop plants  Emasculation and pollination techniques in field crops.  Types of isolation and its impact. Hybrid seed production techniques.	Hands on training imparted to students on the basic tools of plant breeding.  Students are also taken to research stations like TRRI, Aduthurai, State Seed Farm, Milalur and Seed Processing Unit, Vandrayanpattu  Egg Flootation Techniques, Seed dormancy breaking treatment, seed pelleting, seed hardening Acid delinting of cotton Seed extraction in Tomato, Brinjal and Bhendi
Seed Vigour and Crop Productivity	Structure of Monocot and Dicot Seeds  Purity analysis Germination Test Tetrazolium Test Seed health test	Students have been trained in laboratory  Visit to Seed testing Lab, Cuddalore
Advances in Seed Quality Enhancement and Seed Ecology	Packaging Material Accelerated Ageing Estimation of Protein and Carbohydrate	Exhibiting different packaging material based on quantity of seeds per acre Visit to warehouse, Vandrayanpattu

<p>Seed Planning, Trade and Marketing</p>	<p>Field Inspection  Preparation of field visit report  Grow out Test Sampling Procedures</p>	<p>Students have been trained in the Experimental farms Visit to Plant Quarantine lab, Trichy Visit to Seed certification agency Seed Processing Unit, Milalur</p>
<p>Research</p>	<p>Seed Treatment for Abiotic Stress tolerance Varietal identification through Molecular techniques Storage studies of different crops</p>	<p>Collection of seed material from NBPGR, New Delhi, IIHR, Bangalore, RRS, TNAU SAUs, and progressive farmers etc.</p>



### Study Tours / Industrial Visits

Students are also taken to different research stations like

Sl. No.	Place of Visit	Year
1	Kerala Agricultural University	2022
2	CTCRI Kerala	2017, 2022
3	Rajiv Gandhi Center for Biotechnology and Botanical Garden, Trivendrum, Kerala	2017, 2022
4	Dr. S. Thirugnanakumar, Coimbatore,	2022
5	Central Instrumentation Laboratory, Annamalai University	2017, 2018, 2022
6	NRCB, Trichy,	2022
7	IICPT, Tanjore,	2017, 2018,
8	Rasi seeds,	2022
9	Maha seeds.	2022
10	Plant Quarantine Centre, Trichy,	2022
11	Indian Institute of Pulse Research, Vamban,	2022
12	Regional Research Station, Aduthurai,	2017, 2022
13	State Seed Farm, Vandrayanpattu,	2022
14	KVK, Pondicherry	2022
15	PAJANCOA, Karaikal.	2017, 2018, 2022

#### 6.4.6. Supervision of students in Ph.D.programme

##### Research Advisory Committee (RAC)

Each Ph.D. scholar shall have a Research Advisory Committee(RAC) to guide the scholar in carrying out his/her programme.

A Research Advisory Committee shall be constituted with the approval of the University for each candidate separately, immediately after his/her admission. The purpose of the RAC is to provide expert opinion on frontline research.

There shall be a Research Advisory Committee for every scholar consisting of not fewer than four with the Supervisor as Chairperson. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director DARE for information.

##### Research Supervisor:

Every scholar shall have a Research Supervisor (among the recognized guides), who will be appointed by the Vice-Chancellor on the recommendation of the Head of the Department and the Dean, Faculty of Agriculture. Research supervisors approved by the Vice-Chancellor only can be the guide for the scholars.

A teacher having Ph.D. with 5 years of service and PG teaching is eligible for teaching and guiding Ph. D. scholars. A teacher should have a minimum of three years of service before retirement for allotment of doctoral candidates.

The research supervisors who wish to avail leave/lien/deputation beyond a period of six months shall propose a Co-Supervisor in the concerned subject for the candidates registered with them and it may be intimated to the University well in advance. The final approval of the proposal rests with the Vice-Chancellor.

**Functions of the RAC:**The Research Advisory Committee shall have the following functions:

- Discuss, advice and recommend on all matters connected with the scholar's research from admission till the submission of the thesis.
- Approve the topic of research and the synopsis.
- Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D.
- If necessary, recommend and approve change of title of dissertation / thesis and change of Research Supervisor.
- Conduct and supervise the presentation by the candidate of the final draft of his/her proposed thesis for approval before the submission of synopsis of the thesis to the University and to give a certificate to this effect to be submitted along with the synopsis.
- The Research Advisory Committee will meet every semester.
- To scrutinize the research proposal / progress report submitted by the research scholar.
- To assess the conduct of experiments / field work, peruse laboratory notebooks, data recording, analysis, and publication.
- To review and endorse the annual progress report of the research scholar.
- To approve the synopsis of the thesis.
- The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department.

**Changes in RAC:**The proposals for changes in the RAC are to be sent to the Director, DARE, through HOD and Dean for approval, if it is keenly felt that such changes are absolutely necessary.

### **Change of Research Supervisor**

Change of Research Supervisor shall not be permitted as a routine. In exceptional cases, such change may be permitted, if valid reasons are provided by the candidates. The Committee headed by the Vice-Chancellor shall look into the request of the petitioner, if there is any conflict between the scholar and the research supervisor.

The Research Supervisor under whom the scholar has originally registered shall give a "No Objection Certificate" and the new proposed Research Supervisor should give a "Certificate of Willingness" to guide the candidate. The final decision will rest with the University. However, the Vice-Chancellor, on the recommendation of the RAC and Dean's Committee, has the right to assign a new research supervisor to the research scholar.

When the change of Research Supervisor is approved, the candidate shall work for a minimum of one year with the new Research Supervisor, if the topic of his/her research is different under the new supervisor, provided he/she fulfils the attendance requirements.

### **Change of Topic of Research**

Change of the specific area of research may be permitted within one year from the date of admission and request must be submitted with the recommendations of the RAC. In such cases, the minutes of the RAC meeting must include whether the course work undertaken by the research scholar is relevant to the new research area and the competence of the research supervisor in this field.

If the RAC is of the view that there is a major change in the specific area of research and is not relevant to the course work undertaken, the research scholar will have to go through the process of fresh examination pertaining to the area of research.

### **Absence of Member during Qualifying / Final Viva-Voce Examination**

Under extra-ordinary circumstances if the qualifying / final viva-voce examination to Ph. D. scholar has to be conducted in the absence of one or two RAC members, permission to conduct the examination by co-opting another member in such contingencies should be obtained from the Director, DARE in advance.

### **EVALUATION OF SCHOLAR'S PERFORMANCE**

All scholars shall abide by the rules for evaluating the course work under the semester system of education, as prescribed from time to time by the University.

### **QUALIFYING EXAMINATION**

Only those scholars who successfully complete the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of only *Viva voce* examination.

### **Minimum requirement for qualifying Viva voce Examination**

The scholars who have completed all the courses and earned a grade point average of not less than 7.5 will be permitted to appear for the qualifying examination. Scholars who do not satisfy these requirements shall not be permitted to take up the qualifying examination. The qualifying examination will be conducted after the successful completion of course work.

### **Selection of Examiner**

A panel of five external examiners for qualifying examinations shall be given by the RAC in consultation with HOD before three months of the date of completion of the

scholar's course work to the Director, DARE. One of them will be appointed as external examiner.

### **Qualifying Viva-Voce Examination**

The evaluation should cover both the research problem and theoretical background to execute the project. This shall assess the aptitude of the scholar and suitability of the scholar for the given research topic.

The RAC shall conduct the qualifying viva-voce examination with one external member, who shall be a specialist in the subject from outside the university.

The Head of the Department will monitor and coordinate the conduct of the qualifying viva. The performance of the candidate will be graded as Satisfactory / Unsatisfactory.

### **Communication of Results of Qualifying Examination**

The Research Supervisor shall act as chairperson for the examination committee and shall be responsible for communicating the results of the examination to the Director, DARE through HOD in the prescribed format.

### **Failure /Absence in Qualifying Viva-voce Examination**

When a scholar fails or absents for the qualifying viva-voce examination, he/she may apply again for permission to appear for re-examination to the Director, DARE with the recommendation of the RAC and Head of the Department.

A scholar, who applies for re-examination should attend viva-voce. Re-examination shall not take place earlier than one month after the first examination. It will be conducted by the RAC as previously indicated.

If a scholar fails in the re-examination, further re-examination will be considered on the recommendation of the RAC, HoD and Dean, Faculty of Agriculture. If the scholar fails in the qualifying examination, he/she is not permitted to register for further research credits in the next semester.

## **THESIS RESEARCH**

### **Selection of Topic**

The thesis research for the Ph.D. degree should be of the nature of a definite contribution to the subject and the results should be of sufficient importance to merit publication. The findings should have some practical utility or should lead to theoretical contribution.

The thesis shall be on a topic falling within the field of the major specialization and shall be the result of the scholar's own work. A certificate to this effect duly endorsed by the major advisor shall accompany the thesis

## **Research Proposal**

The research scholars shall present their broad area of research and submit a proposal to the Research Advisory Committee at the end of the first semester.

The research proposal has to be presented by the scholar in a meeting organized by the Head of the Department to get the opinion / suggestion of the faculties of the Department for improving it. Three copies of the research proposal in the prescribed format should be sent to the Director (DARE) through the Head of the Department for approval.

## **Evaluation of Thesis Research**

After assigning the research problem, for each semester, the scholar has to submit a detailed programme of work to be carried out by him/her during the semester in the prescribed proforma. After scrutiny and approval, a copy of the research programme has to be given to the scholar for carrying out the work during that semester.

Attendance register must be maintained in the department by HOD for all the scholars to monitor whether the scholar has 80% of attendance in research.

The scholar has to submit his/her research observation note book to the Research Supervisor, who will scrutinize the progress and sign the note book with remarks as frequently as possible. This note book will form the basis for evaluation of research progress.

After completion of 80% attendance for research and on or before the last day of the semester, the research scholars, shall submit Progress Reports in the prescribed format duly endorsed by the Research Advisory Committee to the Director, DARE until they submit their synopsis.

Failure to submit the progress reports shall entail automatic cancellation of registration.

The minutes of the meeting of the Research Advisory Committee along with enclosures will be sent to the Director, DARE.

Candidates who are recipients of fellowships such as JRF/SRF directly from any of the funding agencies/ shall send the progress reports and the utilization certificates in the format prescribed by the respective funding agency through proper channel.

## **SUBMISSION OF THESIS**

The research credits registered in the last semester should be evaluated only at the time of the submission of thesis, by the RAC. Scholars can submit the thesis at the end of the final semester.

If a scholar has completed the thesis before the closure of the final semester, the research supervisor can convene the RAC meeting and take decision on the submission of the thesis, provided the scholar satisfies 80 per cent attendance requirement.

The candidate shall be allowed to submit his/her thesis after the completion of stipulated period. A grace period of 30 days may be allowed to submit the thesis after the prescribed duration. If the thesis is not submitted even after the grace period, the scholar shall pay the tuition fee for the year.

If a scholar is not able to submit the thesis within the grace period, the scholar has to re-register for the credits in the forthcoming semester. The scholar who re-registers the credits after availing of the grace period will not be permitted to avail of grace period for the second time. The Head of the Departments can sanction the grace period based on the recommendation of advisory committee and a copy of the permission letter along with the receipt for payment of fine should accompany the thesis while submission

Three copies of the thesis (in the approved format) shall be submitted together with the submission fee not later than three months after the submission of the synopsis.

No dues certificates from the Department and Central Libraries, Hostel, Stores, etc. must be submitted with the thesis copies. The Research Supervisor shall forward the thesis copies with the enclosures to the Director, DARE through the HOD and the Dean. A soft copy of the thesis in PDF format as prescribed by Shodhganga, shall also be submitted.

The Ph.D. scholars have to publish a minimum of two research papers in NAAS rated journals with 5 and above rating/ Scopus / Web of Science indexed journals at the time of publication of the papers. The synopsis will be accepted for processing only after showing evidences for publications of two such research papers.

The soft copy of the thesis shall be checked for plagiarism using Turnitin software. Beyond the percentage of reproduction prescribed by UGC, the thesis will not be accepted for valuation.

#### **Pre-submission Presentation**

The pre-submission presentation of the thesis is a requirement to enrich the scholar and to fine tune his/her research presentation. This presentation shall be conducted before the submission of the synopsis in the presence of the RAC, Supervisor/Co-Supervisor, Faculty members, Research Scholars and/or P.G. Scholars.

The scholar is expected to present the first draft of the research work or explain the findings / problems faced. The gathering may suggest ideas / references to be consulted / suggestions to improve the work and so on.

A report on this event along with an attendance sheet shall be forwarded by the Research Supervisor with the endorsement of the RAC and HOD to the Director, DARE.

#### **Submission of Synopsis**

The submission of synopsis may be permitted 3 months before the completion of required duration on successful completion of course work.

The Research Scholar shall submit 3 copies of the synopsis approved by the Research Advisory Committee along with a soft copy to the Director, DARE through the Research Supervisor, the HOD and Dean of the respective Faculty.

Guidelines for the preparation of the synopsis are appended in Appendix I. Name of the candidate and name of the supervisor shall not be mentioned anywhere in the synopsis; enrolment number of the candidate alone shall be given. A model cover page for a synopsis is given in Appendix III.

### **Guidelines for Preparation of Thesis**

The thesis shall not exceed 250 pages excluding the Bibliography, Appendices, etc. If it exceeds the specified number of pages, the Research Supervisor should write to university with the reasons and get prior approval from the University. The candidate shall pay a penalty for the excess number of pages as decided by the Deans Committee. The thesis should be in A4 size.

The specification for the preparation of the thesis is given in Appendix II. A model cover page for a thesis is given in Appendix IV.

The thesis shall be typed on both sides of the page in order to save paper and postage. The thesis shall contain a Certificate from the guide (Appendix V) specifying that the thesis submitted is a record of research work done by the candidate during the period of study under him/her and that the thesis has not previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or similar title.

A statement from the guide indicating the extent to which the thesis represents independent work on the part of the candidate should also be made.

### **VALUATION OF THE THESIS**

#### **Panel of Examiners**

The thesis submitted in partial fulfilment of the Ph.D. degree shall be evaluated by two external experts one from within the country and the other from outside the country appointed by the Vice-Chancellor on the recommendation of the Research Supervisor of the RAC, HOD and Dean.

The external experts shall be chosen from a panel of at least five names of specialists separately from within the country and outside the country in the particular field, suggested by the Research Supervisor.

The external experts shall send their evaluation reports on the thesis directly to the Director, DARE along with the copy of the evaluated thesis. The Director, DARE on receipt of the reports from the two examiners will send them to the concerned Research Supervisor who is the convener of viva-voce board.

The Research Supervisor will send the consolidated report with his remarks to the Director, DARE through the Head of the Department. Based on the satisfactory reports of the evaluation, Viva-voce examination will be arranged.

After a scholar's thesis for Ph.D. degree is evaluated as indicated above, the thesis shall be finally accepted for the award only after the scholar satisfactorily completes the final Viva-voce examination.

The Viva-Voce board comprises the scholar's RAC with the addition of the external examiner who valued the thesis, and the HOD. If the HOD happens to be the Research Supervisor, the Dean, Faculty of Agriculture will nominate a senior member of the staff of the concerned Department as a member.

The candidate is expected to defend the thesis at the Viva-voce examination. The degree shall be awarded on the unanimous recommendation of the Viva-Voce board as satisfactory with regard to the thesis and the performance of the scholar in the final Viva-voce examination.

The recommendation of the Viva-Voce board shall be forwarded to the Director, DARE by the Research Supervisor through HOD and Dean which shall be signed by all members of the committee and the external examiner.

A candidate who is not successful (unsatisfactory) at the Viva-voce examination will be permitted to undergo the Viva-voce examination again within a period of three months.



Sl. No.	Name of Faculty / Scientist	Whether qualify for supervision of PG Programme?	Whether qualify for supervision of Ph.D. Programme?	Name of students Guided	Degree Programme	Year awarded	Title of thesis
<b>2018-2019</b>							
1	Dr. S. Padmavathi	Yes	Yes	Mr. J. Gnanasekaran	Ph.D - Agricultural Botany (Seed Science and Technology)	2018	Seasonal Effect on Fruiting behavior, effect of Seed size and invigoration treatments on field performance and storage of cotton ( <i>Gossypium hirsutum</i> L.) Genotypes



#### 6.4.7. Feedback of stakeholders

The feedback is obtained for every course at the end of each semester and the consolidated action taken report is presented in the following table.

Sl. No.	Stakeholders	Feedback	Action taken
1	Students	Requested special classes for slow learning students	Remedial classes are taken for slow learners.
2		Asked for free ICAR coaching classes.	Special coaching classes for ICAR and competitive examinations.
3		Expressed the need for air conditioned Seminar Hall with A/V facilities.	Established Hi-Tech seminar Hall with funding from Departmental alumni and contribution from department Faculties.
4		Requested for re-fencing of damaged segments.	Re-fencing Plant Breeding Farm for conduct of various field trials.
5		Asked facility to carry out rapid emasculation in short span of time in rice.	Vacuum emasculator for ease and rapid hybridization in rice.
6		Expressed the need for free access to online journals for research at Department itself.	Provided Wi-Fi INFLIB net / MYLOFT for easy access of journals for research.
7		Requested for more seating capacity and books.	Enhanced Department Library facilities in terms of space and inventory.
8		Asked separate area for preliminary screening.	Partitioning of Pot-Culture Yard for three disciplines of study.
9		Requested smart class room facility.	Smart TVs in classrooms for visual presentation of videos and power points.
10		Expected guidance for their Progression.	“WhatNext?!”-A student oriented guidance programme by Experts was conducted on 2022.

Sl. No.	Stakeholders	Feedback	Action taken
11	Students	Asked for exposure to become an entrepreneur.	<ul style="list-style-type: none"> <li>▪ Industrial Visits were made to several Government and private institutes.</li> <li>▪ Guest Lectures from entrepreneur.</li> </ul>
12		During COVID-19 Pandemic students requested for online classes and research updates.	Online-classes and International Webinars.
13		Placement services	Annual Recruitment of students by Private Sector Seed Companies.
14	Parents	Requested minimal Financial support for their wards.	Rs.2000/- financial aid per student for top ranking 3 students in each discipline of study have been disbursed to students in the last five years from the UGC-SAP.
15.		Expressed concern about the safety and progress of their wards.	<ul style="list-style-type: none"> <li>• Mentor-Mentee system was in place to cater the concern of the students.</li> <li>• Department Faculties also serve as Deputy Wardens in various Hostels.</li> </ul>
16	Farmers	Asked for latest developments and happenings.	PPVFRA Training programme to Farmers
17.		Asked for high yielding/remunerative varieties.	<ul style="list-style-type: none"> <li>▪ Annamalai Musk melon.</li> <li>▪ AU-1.</li> <li>▪ Anamalai-Brinjal.</li> <li>▪ AU -1 GSR Rice variety</li> </ul>
18.	Employers , those who come for campus placements banks, private sector seed companies etc.	Expected skilled and technically sound employable candidates with good communication ability.	<ul style="list-style-type: none"> <li>▪ Industrial Tie-up training arranged at various public/private sector.</li> <li>▪ Personality Development Classes</li> <li>▪ Mock-Interviews</li> <li>▪ Group Discussions and Brain Storming Sessions.</li> </ul>

## 6.4.8 Student intake and attrition in the programme for last five years

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
2	1	6	2	2	-	-	-	-	-

## Employment details of Ph.D. Scholars

Academic year	Number of Scholars (Ph. D.)	Employed in					Total	Percent employed
		Central	State	Bank	Private	Entrepreneur		
2017-18	-	-	-	-	-	-	-	-
2018-19	1	-	-	-	1	-	1	100
2019-20	-	-	-	-	-	-	-	-
2020-21	-	-	-	-	-	-	-	-
2021-22	-	-	-	-	-	-	-	-

## 6.4.9. ICT Application in Curricular Delivery

- Videos on seed extraction technique, purity separation, seed germination, seed upgrading based on length, shape, size, colour, texture, seed hydration – dehydration techniques, seed priming using various plant products, seed coating treatment and seed pelleting techniques.
- Software on Agres, WASP and Agri Stat, e-resources, PPTs and Online journals are used for effective dissemination of course content.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean .....**Dr.A.Angayarkanni**..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

  
 DEAN  
 FACULTY OF AGRICULTURE  
 ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
Ph.D. Soil Science**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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## 6.4. Self-Study Report for the Programme

Name of the Programme: Ph.D., Soil Science

Offered by: Department of Soil Science and Agricultural Chemistry

### 6.4.1 Brief History of Ph.D Soil Science

The Department of Soil Science and Agricultural Chemistry was functioning as a division under the Department of Agriculture. The Department of Agriculture was elevated to the faculty status in 1963 the Division of Soil Science and Agricultural Chemistry was actively involved in teaching from 1963 to 1978. During 1979 the Division of Soil Science and Agricultural Chemistry was upgraded as a full-fledged department. Realizing the importance of Soil Science in the field of Agricultural education, the Post-Graduate programme in Soil Science and Agricultural Chemistry was started in 1980.

Historical Itinerary	Year of Commencement/Period
Division of Soil Science and Agricultural Chemistry	1963
Ph.D. Programmes	1966
Department Status	1979
Post graduate Programmes in Soil Science and Agricultural Chemistry	1980

The Ph.D degree programme in Soil Science offers a total of 100 credits, which includes 12 credits for major courses, 6 credits for minor courses, 05 credits for supporting courses, , 02 credits for seminar and 75 credits for master's research and thesis submission. Based on the ICAR 5<sup>th</sup> Dean's Committee recommendations, the latest revision of the curriculam was carried out in the academic year 2022-23. The syllabus covers various aspects viz., Soil Physics, Soil fertility and fertilizer use, Soil Chemistry, Soil Genesis, Analytical Techniques, Remote sensing and soil degradation, etc.,

### SEMESTER WISE DISTRIBUTION OF CREDIT

Semester	Major Course	Minor Course	Supporting Course	Seminar	Research	Total credit	Non credit Compulsory course
I	7	4	2	1	2	15	-
II	5	2	3	1	10	22	-
III	-	-	-	-	16	16	Research and Public Ethics
IV	-	-	-	-	16	16	MOOC
V	-	-	-	-	16	16	-
VI	-	-	-	-	15	15	-
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>	<b>100</b>	<b>-</b>

## Distribution of Courses

Course code	Course Title	Credit hour (Theory + Practical)
<b>Major Courses (Any five out six)</b>		12
SOL603	Physical chemistry of soil	2 ( 2 +0)
SOL 604	Soil genesis and micromorphology	2 ( 2 +0)
SOL 602	Modern concept in soil fertility	2 (2 +0)
SOL 608	Clay Mineralogy	3(2 +1)
SOL 606	Soil resource management	3 (3+0)
SOL 609	Recent trends in soil microbial biodiversity	3(2 +1)
<b>Minor courses (Any three out of four)</b>		
SOL 601	Recent trends in soil physics	2 ( 2 + 0)
SOL605	Bio-chemistry of soil organic matter	2 (2 + 0)
SOL 607	Modelling of soil plant system	2 (2 + 0)
SOL 610	Soil and Water Pollution and Remediation	2 ( 2 + 0)
<b>Supporting Courses</b>		5
COM 601	Advances in Computer Applications (1+1)	2
STA 601	Advances in Designs of Experiments (2+1)	3
<b>Seminar</b>		
SOL691	Doctoral Seminar - I (0+1)	1
SOL 692	Doctoral Seminar - II (0+1)	1
<b>Research</b>		
SOL699	Doctoral Research (0+75)	75
<b>Noncredit compulsory courses</b>		
NGC611	Research and Publication Ethics (2+0)	-
NGC612	MOOC (2+0)	-

### Vision:

- To produce Soil Scientists who have cutting-edge scientific skills and expertise in creating, acquiring and disseminating knowledge in Soil Science
- To support sustainable and productive use of natural resources for the welfare of humankind and to help the farming community solve problems arising due to climate change

### Goals

- Imparting practical oriented knowledge and providing training in the field of Soil Science with an array of new analytical procedures
- Scientists who are adept in the art of providing judicious recommendations to farmers

- Strengthening infrastructure facilities by mobilizing grants from funding agencies
- Finding out ways and means to sustain soil health and create awareness among farmers regarding importance of soil testing and package of practices to be followed for efficient use of nutrients and higher crop yields

### Objectives

- To understand current problems through intensive seminars and group discussions with stake holders.
- To impart formal training to students in the field of Soil Science and produce world class Scientists
- To mobilize grants through projects funded by Government as well as private agencies so as to strengthen the infrastructure of the department.
- To carryout research on soil especially physical, chemical and biological processes related to management of nutrients, water, agrochemicals and energy

### Strategic Plans to achieve Vision and Goal

Goals	Objectives	Implementation plan	Performance Metrics/Timeline
Imparting practical oriented knowledge and providing training in the field of Soil Science with an array of new analytical procedures	<b>Advances in Soil Science</b> To understand current problems through intensive seminars and group discussions with stake holders and to expose the budding scientists to the recent advances in soil science	Periodical up gradation of syllabi	Once in three years.
Soil scientists who are adept in the art of providing judicious recommendations to farmers	<b>Training to Students</b> To impart formal training to students in the field of Soil science and produce world class Scientists who can significantly fulfil the requirements of Soil Scientists	Definitive implementation of class seminars & credit seminar to impart interactive ability among students	Once in a semester
Strengthening infrastructure facilities by mobilizing grants from funding agencies	<b>Research activities</b> To mobilize Grants through projects funded by Government as well as private agencies so as to strengthen the infrastructure of the department.	Organising periodical guest lectures for knowledge enlightenment and campus interviews for prospective placements.	Once in three months & yearly
Finding out ways and means to sustain soil health and create awareness among farmers regarding	<b>Extension (scientific knowledge to farmers)</b> To carry research on soils especially physical,	Motivating staff to apply for various projects and encourage faculty members to publish their research	Throughout the year

Goals	Objectives	Implementation plan	Performance Metrics/Timeline
importance of soil testing and package of practices to be followed for efficient use of nutrients and higher crop yields	chemical and biological processes related to management of nutrients, water, agrochemicals and energy	findings in peer reviewed journals. Disseminate and promote technologies for sustainable management of soil and water resources and efficient use of nutrients, water agrochemicals and energy	Throughout the year

### Accomplishments

The department was nurtured under the headship of the renowned Soil Scientist, Dr. S. Chandrasekaran. A reputed Soil Scientist and Best Teacher awardee (1987-1988) by the Government of Tamil Nadu, Dr. S. Chandrasekaran was the first Head of the Department who was responsible for **the release of the salt-tolerant highyielding rice variety Annamalai Uvar Nel (AU-1)**. Salinity tolerance is a special characteristic of this variety. It tolerates soil salinity up to 6.0 dSm<sup>-1</sup> (soil water extract 1:1) at which level the popular Kuruvai varieties do not survive. The plants of AU-1 are semidwarf in nature (about 95 cm. in height) with erect, non lodging habit, moderately photoinensitive with a duration of 105 days in Kuruvai and 115 days in Navarai. The variety can yield 6.2 t ha<sup>-1</sup> in normal soil with good quality water. However, when irrigated entirely with water of salinity level 2 dSm<sup>-1</sup> during Kuruvai season, this variety can yield 3. 2 t ha<sup>-1</sup>. Dr. S. Chandrasekaran, during his tenure did pioneering work on **the use of lignite humic acid and lignite flyash in maximizing crop yields**. He also served as the Dean, Faculty of Agriculture during 1986-1989

Prof. S. Kaliyaperumal succeeded Dr. S. Chandrasekaran and made significant contribution to the development of the department.. Dr. B.Raghupathy was the Head of the Department from 14.03.1991 to 30.06.2002. His contributions on the use of lignite fly ash as source of silica and other nutrients in improving soil fertility and productivity are worthmentioning.

Dr. R. Govindasamy, succeeded Dr. B. Raghupathy and served as the Head of the Department from 01.07.2002 to 31.07.2004. He made remarkable studies on the use of lignite derived humic acid for sustainable crop yields. Dr. M. Ravichandran, Professor of Soil Science and Agricultural Chemistry served as the Head of the department from 01.08.2004 to 18.01.2015. His work on Diatomaceous earth as a source of silicon in different crops of Tamil Nadu is significant. Dr. A. Angayarkanni, Professor of Soil Science and Agricultural Chemistry, served as the Head of the Department from 19.01.2015 to 28.02.2018. She made significant research **on recycling of agricultural and agro industry wastes for enhanced nutrient uptake and yield of rice**. Dr. K. Arivazhagan served as the Head of the Department from 1-3-2018 to 28-2-2021. He served as a consultant Scientist for NTPC on use of Fly ash in Agriculture. Dr. M .V. Sriramachandrasekharan is currently holding the post Professor and Head from 1-3-

2021. His area of specialization is **integrated soil fertility management in rice and silicon research in normal and abiotic stress**. From the inception of the department, one hundred and eighty nine M.Sc.(Ag.) and 26 Ph.D. students have passed out from the portals of this department with a high degree of accomplishment. The passed out students are working in different fields with zeal and commitment and have reached pinnacle of glory with their will and self-determination

The following research work carried out by the faculty stand as testimony to the research competence of the staff of the department.

- Release of saline-tolerant rice variety Annamalai UvarNel (AU 1)
- Lignite fly ash dosage optimized for crops viz., rice, sorghum, maize, groundnut and sugarcane grown in lateritic soils
- Consultancy services offered on use of fly ash in agriculture for NTPCs
- Rate of lignite derived humic acid in combination with RDF rationalized for vegetable crops viz., radish, Bendi and tomato
- Technology for restoring soil fertility and productivity of degraded soils of coastal eco-system using bio-resources established
- Methods of recycling of agricultural and agro industry wastes for enhanced nutrient uptake and yield of rice developed
- Critical limits for sulphur and micronutrients established and levels optimized for rice, groundnut and vegetables
- Silicon research on rice and banana
- Soil resource inventory and soil erosion assessment through remote sensing and GIS techniques

A collaborative research project between the Department of Soil Science and Agricultural Chemistry, Annamalai University and University of Agricultural Sciences, Bangalore, entitled "**Diatomaceous earth as a source of silicon in different crops of Tamil Nadu**" was carried out during year 2012-2014 with an outlay of Rs. 7.84 lakh. Another collaborative research project between the Department of Soil Science and Agricultural Chemistry, Annamalai University and International Potash Institute Switzerland, entitled "**Assessment of Potassium on Turmeric at Different Farmers' location in Inceptisols**" was conducted during 2010-12 with an outlay of 2.70 lakhs.

Category	Upto 2016	July 2017- June 2022
Number of Publications (Journal articles)	561	394
Number of Publications (Seminars/Conferences/Symposia)	466	380
Number of Books & Book chapters	12	15
Number of Projects obtained	40	8
Grant mobilization(Rs. Lakhs)	100	22
Number of Ph.D s produced	26	5
Number of PG s produced	147	43
Number of Seminars/Conferences/Workshops Organized	8	2
Number of Awards received by the Faculty	21	11

Number of countries visited by the Faculty (Professional visits)	6	4
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### Salient Research achievements of the Department

Area of Research	Salient Findings
Use of Lignite flyash for improving productivity of crops	<ul style="list-style-type: none"> <li>• LFA was used as a source of silica for rice, maize and sugarcane in lateritic soil and addition of LFA as silica source released much P in these lateritic loamy soils.</li> <li>• LFA was used as a source of nutrient for sorghum and groundnut in lateritic loamy sand soils.</li> <li>• LFA was tried as source of sulphur and it was comparable to gypsum for groundnut and sunflower.</li> <li>• Application of LFA and pressmud in combination was found to be efficient in improving productivity of blackgram.</li> <li>• Application of LFA along with gypsum as a source of sulphur improved the yield and quality of radish</li> </ul>
Lignite derived humic acid for enhancing nutrient availability and yield of crops	<ul style="list-style-type: none"> <li>• Lignite derived humic substances viz., humic acid, nitro humic acid and poly carboxylic acid were characterized using IR and NMR spectroscopy</li> <li>• The dose of Lignite humic acid for rice, sorghum, sugarcane, groundnut, bhendi, brinjal and tomato was optimized through field trials</li> <li>• The role of humic acid in improving the use efficiency of 1. nitrogen in rice soils was established through humic acid coated urea. 2. Zn and Fe in Sugarcane was established using zinc and iron humate. 3. Boron use efficiency was established in tomato using calcium boro humate 4. The role of humic acid in improving saline tolerance of rice crop was established through field trials</li> </ul>
Restoring fertility in degraded	<ul style="list-style-type: none"> <li>• Characterisation of degraded soils of coastal eco</li> </ul>

Area of Research	Salient Findings
soils of coastal eco-system	<p>system of Tamil Nadu was undertaken.</p> <ul style="list-style-type: none"> <li>• In coastal degraded soils to sustain soil health and yield of crops the bio resource technology in soil using microbial consortium and organic manure was evolved.</li> <li>• To increase the efficiency of micro nutrient and coastal degraded environment technology was developed to prepare nutrient fortified organic manure and demonstrated and their coastal irrigated and upland conditions.</li> <li>• As an alternate land use practice to increase the income of coastal farmers, suitable medicinal plants were suggested.</li> <li>• Standardization of agro-techniques for medicinal plant cultivation using INM practices and micro nutrients were developed.</li> <li>• Leaching loss of nutrients such as nitrogen and zinc and coastal environment was assessed and its preventive measure was developed using clay and organic amendments.</li> </ul>
Recycling of agricultural and agro industry wastes for enhancing yield of crops	<ul style="list-style-type: none"> <li>• Recycling of agricultural and agro industry wastes provides early nitrogen, enhances nutrient availability, provides nitrogen, phosphorus, potassium, calcium, sulphur and micronutrients.</li> <li>• It energizes soil microorganisms, prevents nutrient elements from leaching and increases nutrient use efficiency.</li> <li>• Pressmud + crop residue compost blended with LFA followed by dairy farm waste + crop residue compost blended with LFA proved to be superior and this was reflected in use efficiency of nutrients and yield of rice, groundnut and maize.</li> </ul>
Soil resource inventory and soil erosion assessment through remote sensing and GIS	<ul style="list-style-type: none"> <li>• Annual soil erosion rate of Manimuthanadhi watershed was assessed using revised universal soil loss equation (RUSLE) and GIS.</li> </ul>

Area of Research	Salient Findings
techniques	<ul style="list-style-type: none"> <li>The soil loss classes very high and severe covers about 2369 km<sup>2</sup> and 15.44 km<sup>2</sup> , respectively.</li> <li>This study identifies the location which is needed to take soil conservation measure to reduce soil loss in the study area.</li> </ul>
Micronutrient research	<ul style="list-style-type: none"> <li>Studies were conducted to delineate, characterize and find the response of Zinc to rice in soils of Chidambaram Taluk.</li> <li>It was found that , to overcome zinc deficiency and achieve maximum yield in rice-pulse cropping system in soils of Chidambaram Taluk, soil application of Zn kg<sup>-1</sup> along with poultry manure or vermicompost can be resorted.</li> <li>The critical limit of Zn was 0.85 and 0.84 mg kg<sup>-1</sup> for Vertisol and Entisol of Chidambaram taluk, respectively.</li> </ul>

#### 6.4.2. Faculty Strength

The Department's teaching, research and extension are taken care of by twenty faculty members who have specialized in Soil Fertility, Soil Chemistry and Pedology.

Sl.No.	Sanctioned Faculty	Faculty in place As on August,2022	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	6	-	-
2	Associate Professor	4	-	1
3	Assistant Professor*	9	-	2+3

\* Engaged in UG, PG and Ph.D. programme

### Services of Faculty from other Departments

Sl.No.	Sanctioned Faculty	Faculty in place As on August,2022	Other Departments As on August,2022	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1	Professor*	1	STATISTICS	-
2	Associate Professor	1	COMPUTER SCIENCE	-
3	Assistant Professor*	1		-

## 1. Accomplishment by Teachers

S.No	Name	Designation	Total service (Years)	Field of Specialization	Total Number of students guided		Total number of publications	Total number of Publications (July 2017-June 2022)	
					PG	Ph.D		Journals	others
1	Dr. M.V. Sriramachandrasekharan	Professor and Head	27	Soil Fertility & Analytical Chemistry	11	3	171	48	5
2	Dr. A.Angayrakanni	Professor	33	Soil Fertility & Soil Ecology	8	3	78	10	1
3	Dr.K.Arivazhagan	Professor	30	Soil Fertility and Soil Physics	9	1	25	3	....
4	Dr. P.Poonkodi	Professor	29	Soil Fertility and Pedology	8	1	47	14	10
5	Dr. R.Singaravel	Professor	24	Soil Fertility&plant nutrition	4	4	86	3	1
6	Dr. K.Dhanasekaran	Professor	24	SoilFertility,Humus Chemistry	7	3	54	14	3
7	Dr. D.Venkatakrishnan	Associate Professor	21	Soil Fertility& Environment	5	Nil	20	10	----
8	Dr. S. Srinivasan	Associate Professor	21	Soil Fertility	7	Nil	55	22	8
9	Dr. N. Senthilkumar	Associate Professor	18	Soil Fertility & Environmental pollution & pesticide	6	Nil	38	18	6
10.	Dr. D. Elayaraja	Associate Professor	18	Soil Fertility and Soil Biology	7	Nil	89	40	7
11	Mr. M. Rasavel	Asst. Professor	19	Soil Fertility	-	Nil	3	----	-----
12.	Dr. P. K. Karthikeyan	Asst. Professor	18	Soil Fertility	6	Nil	32	22	1
13	Dr. R. Manivannan	Asst. Professor	16	Soil Fertility& Plant nutrition	2	Nil	46	32	4
14	Dr. S. Sathiyamurthi	Asst. Professor	16	Soil Fertility and GIS	3	Nil	34	19	1
15	Dr. P. Kamalakannan	Asst. Professor	16	Soil Fertility	3	Nil	35	24	2
16	Dr. R. Bhuvanewari	Asst. Professor	16	Soil Chemistry& Soil Fertility	4	Nil	43	21	3
17	Dr. T. Muthukumararaja	Asst. Professor	16	Soil Fertility & plant nutrition	4	Nil	28	20	4
18.	Dr. P. Senthilvalavan	Asst. Professor	15	Soil Fertility & Radioisotopes	1	Nil	72	55	15
19	Dr. K. Suhathiya	Asst. Professor	13	Soil Fertility	Nil	Nil	8	4	---

## 2. Publications and Seminars, Conferences, Workshop and Symposia attended/organized

S.No.	Name of the Teacher	Number of Publications (Upto July 2017 - June 2022)		360 degree	h- index	i-10 index	Citation	Number of seminars attended (July 2017- June 2022)	Number of seminars organised (July 2017- June 2022)
		Journal	Book & Chapters						
1.	Dr. M.V. Sriramachandrasekharan	48	5		11	15	478	13	1
2.	Dr. A.Angayarkanni	10	-	109	6	4	145	18	-
3.	Dr.K.Arivazhagan	3	-	-	-	-	-	1	-
4.	Dr. P.Poonkodi	14	-	-	-	-	-	11	-
5.	Dr. R.Singaravel	7	-	-	-	-	-	11	-
6.	Dr. K.Dhanasekaran	16	-	-	5	-	45	12	1
7.	Dr. D.Venkatakrishnan	12	4	-	3	-	-	16	1
8.	Dr. S. Srinivasan	23	9	146	4	1	28	41	1
9.	Dr. N. Senthil Kumar	24	6	131	4	-	40	37	-
10.	Dr. D. Elayaraja	41	6	195	8	3	163	24	1
11.	Mr. M. Rasavel	-	-	--	-	-	-	--	-
12.	Dr. P. K. Karthikeyan	22	1	--	4	-	50	15	1
13.	Dr. R. Manivannan	32	1	118	5	3	62	29	1
14.	Dr. S. Sathiyamurthi	19	1		3	1	38	1	-
15.	Dr. P. Kamalakannan	24	2	187	3	1	36	23	-
16.	Dr. R. Bhuvanewari	21	3	150	4	2	48	14	-
17.	Dr. T. Muthukumararaja	19	6	-	-	-	-	25	1
18.	Dr. P. Senthilvalavan	53	15	289	5	3	106	80	1
19.	Dr. K. Suhathiya	4	--	89	2	-	17	26	-

S.No.	Type (seminar/conference/ Symposia/workshop/ Colloquium)	Date	Title	Number of Participants	Sponsoring Agency
1.	National Seminar	26 & 27 <sup>th</sup> October, 2018	Technological interventions to enhance nutrient use efficiency to meet food security and environment sustainability	250	DST-Purse
2.	Webinar	13-8-2020	Significance of Space Technology on Crop and Soil Sustainability	434	Dept. of SS
3.	Webinar	4-9-2020	Relevance of Modelling in Nutrient and Water Management	397	Dept. of SS
4.	National Virtual Conference	11-10-2021	Challenges and opportunities for integrated soil fertility management in India(COISFMI-21)	200	IQUART
5.	National Seminar	28-29 Mar, 2022	Revitalising soil health through natural resource management in a climate change era(RSHNRM-21)	140	DST- PURSE-II

#### 6.4.3. Technical and Supporting staff

The list of technical and supporting staff of the Department of Soil Science is given below

Sl.No.	Sanctioned posts	Staff in place	Responsibilities
1	Assistant Section Officer	1	Preparation of files for the purchase of chemicals
2	Assistant Programmer	1	Office computer work
3	Lab Technician	2	Maintenance of laboratories and preparation of solution for class.
4	Helper	5	Issue of glasswares
5	Deputy Garden Superintendent	2	Pot-culture maintenance - Maintenance of Garden
6	Maistry	2	Cleaning - sand filling for pots in pot-culture Yard

#### 6.4.4. Classrooms and Laboratories

The classrooms and laboratories available in the Department of Soil Science for M.Sc. (Ag.) programme are given below. The department is fully equipped PG and instrumentation laboratories apart from a pot culture yard for teaching and research programs. In addition, an ICT laboratory with ten computers is available for staff and students' use.

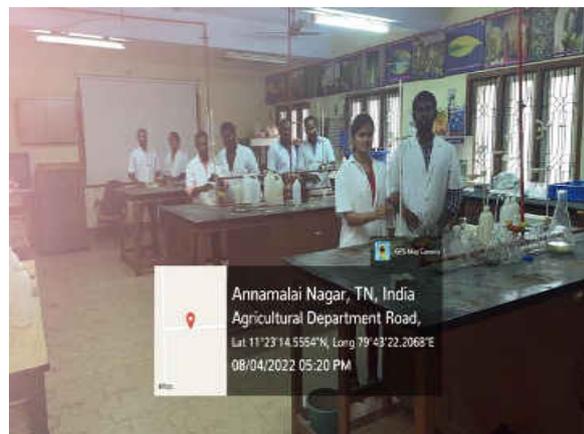
Sl.No.	Facility	Number	Area (sq. ft)	Description & Equipment housed
1	Class room	1	180	A class room with audio visual facility is available
2	Post-graduate Laboratory	1	740	A full-fledged-laboratory with all basic facilities such as Soil grinder-1, Kjeltex N Analyser-1, Soxhlet's apparatus-1, Laminar Flow Chamber-1, Aggregate analyser-1, mantle-1, Doublebeam Spectrophotometer-1, Flame photometer-1, distillation unit-1, Electronic weighing balance-1, Bremner apparatus-1, micro Kjeldahl unit-1 and Hot air Oven-3.
3.	Instrumentation Laboratory	1	620	An air conditioned laboratory with all basic instruments such as Centrifuge-1, Spectrophotometer-3, pH meter-1, EC meter-1, Electronic weighing balance-2, Incubator -1, Pressure plate apparatus-1, C: N Analyser-1, Li-COR methane analyser-1, Atomic Absorption Spectrophotometer-1, Chlorophyll meter - Spade 502-1, Ground Truth Radio meter with 4 filters-1
4.	Library cum ICT Laboratory	1	646	An air conditioned laboratory with 10 computers loaded with statistical softwares connected through LAN with Infnlibnet facility. One computer with GIS and remote sensing software is also available. It also houses 909 books , 15 Journals and 45 CDs.
5.	Gas Plant	1	110	Fuel Gas generation
6.	Glass house	1	660	To conduct incubation and pot experiments
7.	Pot culture yard	1	2500	To conduct pot experiments



### Laboratory Equipments



**PhD., Theory Classroom**



**Ph.D., Practical Laboratory**

#### 6.4.5. Conduct of Practical and Hands-on-Training

- ❖ AV aids are used both for theory as well as practical classes, class seminars and group discussions
- ❖ Field visits are arranged to research stations for providing them with knowledge on different types of soils, crops and cropping pattern.
- ❖ Students are taken to soil testing labs so as to gain knowledge on the procedures followed for soil testing, interpreting results and giving fertilizer recommendation to different crops grown on farmers' fields.
- ❖ Students are exposed to fertilizer testing labs and pesticide testing labs so that they can be aware of the methods followed at the labs for testing fertilizers and pesticide
- ❖ Frequent visits are made to progressive and innovative farmers' fields to learn new technologies.
- ❖ Students are motivated to participate in National and International seminars and conferences and interact in scientific discussions.
- ❖ Invited lectures are also arranged under the aegis of the Indian Society of Soil Science chapter for the benefit of the staff and students.



### **Preparation of vegetable compost at sivapuri village, Chidambaram**

#### **6.4.6. Supervision of Students in Ph.D programme**

During their research, each Ph.D student shall have an advisory committee which is formed before the end of the first semester to facilitate the student in carrying out the assigned thesis program. The advisory committee comprises of a chairman and two members, of which one member is from the major discipline and another from any other discipline in the related field of research. The chairman of the advisory committee will guide the student throughout the program for selecting appropriate major and minor courses, guide in the selection of topic for thesis research and seminar, monitor the research work and maintain a research monitoring register for each student.

Students' progress is reviewed by the chairman once in a week. The Professor and Head of the Department take up monthly review to assess the progress of research done by Ph.D students. At the end of each semester, evaluation of research work carried out by the student is done by the advisory committee members by presenting their progress of research at the Department level where they offer their remarks/ suggestions for improvement of their research.

### Ph.D. Soil Science - Thesis Submission (2017-2022)

S.No.	Name of student	Name of the Guide	Year of submission	Title of thesis
1	R. Manivannan	Dr.M.V. Sriramachandrasekharan	2019	Nitrogen management through organics in rice based cropping system of Cauvery delta
2	K.Suhathiya	Dr. M. Ravichandran	2019	Yield maximization of blackgram through management of nutrient and growth regulators.
3	AbdallaAhmed Mohammad Adda	Dr.M.V. Sriramachandrasekharan	2019	Restoration of sustainable rice productivity and soil quality through integration of industrial waste, organics and chemical fertilizers in rice based cropping system of Cauvery delta
4	S. Venkatasen	Dr. K. Dhanasekaran	2019	Integrated soil resource analysis of sollapura subwatershed in chikmagalur district of Karnataka using remote sensing and GIS
5	V. Prabhu	Dr. R. Singaravel	2022	Nutrient management for maximizing yield and sustaining soil quality under various rice production systems

#### 6.4.7. Feedback of stakeholders (Students, farmers, company, parents etc.)

- Evaluation of teachers by students is done at the end of each semester through a specific feedback form prescribed by UGC
- An effective Mentor - mentee system is functioning at Department level to get feedback from students about hostel facilities and other amenities available
- Feedback from farmers is obtained during RAWE programme
- At the time of campus placement meeting the views of the Company representatives regarding syllabus revision and areas to be emphasized are obtained
- Feedback from parents regarding the views of their wards about the institution are obtained periodically

#### Action taken

1.	Feedback obtained from students is used to rate the teaching methodology followed by the teacher and improvements are suggested to the concerned teacher by the Head of the Department.
2.	Feedback is obtained from the students regarding the facilities required and based on the feedback necessary improvements are being carried out Diagnostic field visits are performed as and when required.+
3.	Enquiry on various problems like soil testing, irrigation water salinity, nutrient management

	and deficiency symptom are received from farmers of Southern zone. The Soil scientists diagnose the problems and suggest necessary solution to the farmers.
4.	Discussions are made with Company representatives and alumni so as to update the curriculum based on market requirements
5.	Feedback obtained from parents is also considered during the process of framing rules and regulations to be adhered to by students and facilities to be created for their welfare.

#### 6.4.8 Students intake and attrition

Actual students admitted (2017- 2022)					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
2	2	8	2	3	0	50	12.5	-	-

#### 6. 4.9. ICT Application in Curricula Delivery

The classrooms are equipped with LCD facilities. A separate computer lab with internet connectivity (ICT - Lab) is also available for use. The teaching faculty has updated the usage of IT enabling gadgets. Postgraduate classes are equipped with audio visual aids and. Staff make presentations in recent topics of relevant subjects with the use of ICT tools. In practical classes lab instrument operations are explained through video clippings to gain operational skill. To enhance quality in research, students are encouraged to access relevant literature from various e – websites.

6.4.10 The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean .....**Dr.A.Angayarkanni**..... hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college. and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### ICAR ACCREDITATION

Self Study Report (2017 to 2022) for  
Ph.D. Plant Pathology

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022



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6.4.11	Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.	30
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#### 6.4. Self Study Report for the Programme

**Name of the Programme: Ph.D. in Plant Pathology**

**Offered by: Department of Plant Pathology**

##### 6.4.1. Brief History of Ph.D. in Plant Pathology Programme

The discipline of Plant Pathology was an integral part of Department of Agriculture during its formative years and later on, became a part of the Department of Microbiology. The starting of a post-graduate course in Plant Protection in 1972, combining both Plant Pathology and Entomology heralded a new line of thinking. With the reorganization of the Faculty of Agriculture in 1984, M.Sc. (Ag.) in Plant Pathology was offered as a separate discipline.

<b>Historical Itinerary</b>	<b>Year/Period</b>
Division of Plant Pathology	1958
Post graduate Programmes in Plant Protection	1972 -1984
Department Status	1984
Post graduate Programmes in Plant Pathology	1984
Ph.D. Programme	1984

Currently the Ph.D. Plant Pathology degree programme has 100 credits in six semesters which includes 12 credits for major courses, 06 credits for minor courses, 05 credits for supporting courses, 02 credit for seminar and 75 credits for Ph.D. thesis research. The latest revision of the curricula was carried out based on the recommendation of Fifth Dean's committee in the academic year 2022-2023.

##### Semester wise distribution of credit

<b>Semester</b>	<b>Major Course</b>	<b>Minor Course</b>	<b>Supporting Course</b>	<b>Seminar</b>	<b>Research</b>	<b>Total credit</b>	<b>Non credit Compulsory course</b>
I	6	4	2	1	2	<b>15</b>	-
II	6	2	3	1	10	<b>22</b>	-
III	-	-	-	-	16	<b>16</b>	Research and Publication Ethics
IV	-	-	-	-	16	<b>16</b>	MOOC
V	-	-	-	-	16	<b>16</b>	-
VI	-	-	-	-	15	<b>15</b>	-
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>	<b>100</b>	-

<b>Course code</b>	<b>Course Title</b>	<b>Credit hour (Theory + Practical)</b>
<b>Major Courses</b>		
PAT 601	Advances in mycology	3(2+1)
PAT 602	Advances in virology	3(2+1)
PAT 603	Advances in plant pathogenic prokaryotes	3(2+1)
PAT 604	Molecular basis of host-pathogen interaction	3(2+1)
PAT 605	Principles and procedures of certification	1(1+0)
PAT 606	Plant biosecurity and biosafety	2(2+0)

PAT 607	Nanotechnology in plant disease management	3(2+1)
<b>Minor Course</b>		
PAT 608	Insect vector of plant viruses and other pathogens	2(1+1)
PAT 609	Mushroom production technology	3(2+1)
PAT 610	Plant health diagnostics and management	2(1+1)
PAT 611	Seed health technology	1(1+0)
<b>Supporting Courses</b>		
COM 601	Advances in Computing Applications	2 (1+1)
STA 601	Advances in Designs of Experiments	3 (2+1)
<b>Seminar</b>		
PAT 691	Doctoral Seminar – I	1 (0+1)
PAT 692	Doctoral Seminar – II	1 (0+1)
<b>Research</b>		
PAT 699	Doctoral Research	75 (0+75)
<b>Non credit compulsory courses</b>		
NGC 611	Research and Publication Ethics– <b>Contact hours: 2</b>	-
NGC 612	<b>MOOC - Contact hours: 2</b>	-

### Vision

- To impart quality education in Plant Pathology and enable students to qualify for various competitive examinations
- To develop technologies for early detection, diagnosis and management of plant diseases to cater the needs of the farming community

### Goals

- To provide quality education with updated and latest developments in the subject
- To develop students with entrepreneurial skills
- To promote research on sustainable and eco-friendly approaches in crop disease management
- To popularize edible mushroom production

### Objectives

- To impart quality education in Plant Pathology involving biotechnological aspects on detection, diagnosis and management of plant diseases
- To undertake research on location specific problems and developing technologies of crop disease management for sustainable crop production.
- To ensure practical exposure in molecular studies for the PG and Ph.D. scholars
- Impart training for transfer of technology

**Strategic plan to achieve Vision and Goal**

Goals	Objectives	Implementation plan	Performance Metrics/Timeline	Out come
<p>To provide quality education with updated and latest developments in the subject</p>	<p><b>Quality education</b>                      To impart quality education in Plant Pathology involving biotechnological aspects on detection, diagnosis and management of plant diseases                      To undertake research on location specific problems and developing technologies of crop disease management for sustainable crop production.                      To guide graduates and post graduates in identifying professional and research career opportunities</p>	<p>Periodical up-gradation of course contents                      Implementation of class seminars to impart interactive ability among students                      Organising periodical on campus interviews for prospective placements                      E – Access bay for acquiring up-to-date subject knowledge.</p>	<p>Every year</p>	<p>PG students are motivated to get job opportunities in UPSC, ICAR, SAU, SSC, Ministry of Agriculture and Farmer’s Welfare, State Agriculture department.</p>
<p>To develop students with entrepreneurial skills</p>	<p><b>Progress of entrepreneurial skills</b>                      To ensure practical exposure in molecular studies for the Ph.D. scholars                      To extend technical expertise and assistance in testing newer compounds developed by pesticide establishments</p>	<p>Proposing extramural funded projects through Government agencies like DST, DST-FIST, DST-SERB, DBT, UGC, ICAR etc.,                      Giving assignments to PG students and encouraging them to present research findings in national and international seminars /symposia.                      Faculty is encouraged to present their research findings and innovative ideas in “In-house science forum” – <b>AUPPA - Annamalai University Plant Pathologists Association</b>                      Motivating PG students to conduct laboratory and field trials.</p>	<p>Every year</p>	<p>The students will develop self confidence in handling advanced instruments for their research programme.                       The students are trained to refer books and e-journals to enhance their knowledge. Their instructional capacity is also increased through assignments and seminars.</p>

Goals	Objectives	Implementation plan	Performance Metrics/Timeline	Out come
To promote research on sustainable and eco-friendly approaches of crop disease management	<p><b>Research promotion</b> To offer hands on training in IDM, techniques to the farmers and extension workers.</p>	Imparting hands on trainings on bio control agents mass production tech., Use of plant products and natural products for disease management etc.,	Every year	To motivate the rural youth on the use of mushroom cultivation; bio-compost and bio-control agents in agriculture
To popularize edible mushroom production	<p><b>Transfer of technology</b> Conduct training for transfer of technology</p>	Impart hands on trainings on edible mushroom production and training on value addition	Every year	To achieve overall rural development and national food security in the state particularly in the south east coastal districts of Tamilnadu

## Accomplishments

The Department of Plant Pathology emerged during 1984. **Dr. G. Rangaswami, student of Nobel laureate S.A. Waksman was instrumental in initiation of the Department.** So far **308 M.Sc. (Ag.)** Plant Pathology degrees and **35 Ph.D.** degrees have been awarded. The PG students reflect a scenario of national unity as they represent every part of India. The Department was first Headed by Prof. R. Ramabadrana, a student of Dr. G. Rangaswami. Prof. K. Ramanujam graduated Ph.D., from IARI and did his post doctoral fellow at Belgium was our second Head of the Department. He was followed by Prof. V. Kurucheva as Head of the Department, who initiated a great deal of research on use of natural products for crop disease management. After him Prof. A. Eswaran and Dr. S. Usharani Headed the Department. Presently the Department is headed by Dr. D. John Christopher, Professor of Plant Pathology. The alumni of the Department have occupied prestigious positions in various government and private organizations. Our distinguished alumni's occupied in higher positions in various government organisations viz., FAO - Rome Italy, National Rice Research Institute- ICAR, Odisha; UAS, Raichur, Karnataka; Tamil Nadu Agricultural University, Tamilnadu; University of West Indies; PANJANCOA&RI; Sugarcane Breeding Institute-ICAR, Coimbatore; CTCRI-ICAR, Trivandrum; Gandhigram Rural Institute, Dindigul; Mahwah Forest Division, HQ- Kishtwar, Jammu & Kashmir; Directorate of Vigilance and Anti corruption, Andhra Pradesh; Division of Insect Ecology, National Bureau of Agricultural Insect Resources-ICAR, Bengaluru; IIHR-ICAR, Odisha; TRRI, Aduthurai; Department of Agriculture, Tamil nadu and Pondicherry.

Apart from teaching, the staffs in the Department are actively involved in research. **During the academic year 2018-2019 department of Plant Pathology was supported by DST-FIST and received Rs. 89.00 lakh** for establishment of a well equipped laboratory. Several projects have been taken up by the staffs with funding from agencies like **Ministry of Coal and Environment, Neyveli Lignite Corp., IIRR-ICAR, Hyderabad, DBT, DST, DST-SERB, UGC, UGC Non-SAP, FIST, NAIP, TNSCST and private funding agencies like, BASF, Coromandel, Indofil, PI-Industries, UPL Ltd., NACL, Sulphur mills Ltd., Atul Ltd., Syngenta India Ltd., T.Stanes etc., and NGO's like CIKS and MSSRF.**

The Department offered a training programme for the rural youth regarding **edible mushroom production** and processing with funding support from **DBT**. Also, a training programmes were conducted on **production of eco-friendly pesticides, enriched compost and growth promoting substances** funded by **TNSCST**. Besides, the Department offers consultancy service in the management of crop diseases to the farmers of Cauvery delta region who visit the Department with their crop disease problems. Also, **Consultancy services in the technology development for mushroom production are being offered.**

### Salient Research achievement of the Department

Developed new package of cultivation practices for *Calocybe indica* and *Pleurotus* spp. under coastal climatic conditions and **Coiled rope method of mushroom bed preparation was first introduced.** The use of F class Fly ash (fortified lignite fly ash) for disease management has been brought out, the pathogenic nature of *Fusarium fusarioides* causing **wilt of tomato** was identified for the first time. *Alternaria* blight of Mondo grass, Die-back on hippeastrum and Damping-off disease in mint crop were reported for the first time. **Several antimicrobial (antimycotic and antibacterial) compounds were identified from seaweeds, plant, animal products and bioformulations** against the management of crop diseases and crude extracts of plants were formulated and standardized the dosage against seed and soil borne pathogens. Use of

different animal excreta and their combinations (Annamalai Mixture) for the management of viral diseases of pulses have been reported. **Also, 85 new strains of microbes have been identified and deposited in NCBI.** For the past five years **96 new fungicide molecules** were tested for their bio-efficacy against various pathogens for different Agro-chemical industries

Category	In Total		Last five year period	
	Nos.	Outlay	Nos.	Outlay
Projects Handled				
Govt. funded Project	09	1.65 Cr.	04	1.23 Cr.
Private funding Agencies	150	5.92 Cr.	109	5.26 Cr.
Ph.D. Thesis Awarded	35		06	
PG Thesis Awarded	308		90	
Publications	466		234	
Books	12		07	
Book chapters	133		129	
Practical manuals	16		07	
Endowments offered by the Dept.	05		05	
International and National Workshops, Seminar, Conferences organized	11		05	
Awards by the Faculty	55		21	
Visits of Foreign countries	09		06	

#### 6.4.2. Faculty Strength

Presently 22 faculty members are available in the Department with different areas of specialization *viz.*, biological control, natural products, new generation fungicides in crop disease management and edible mushroom production technologies.

Sl.No.	Cadre	Sanctioned	Filled (as on July 2022)	Vacant position	Faculty Recommended by ICAR/UGC/ VCI/ other regulatory bodies
1.	Professors*	03	03	0	-
2.	Associate Professor*	06	06	0	01
3.	Assistant Professors*	13	13	0	02
<b>Total</b>		<b>22</b>	<b>22</b>		<b>03</b>

\* Engaged in UG, PG and Ph.D. Programmes

**Faculty deputed from other Departments to handle supporting courses**

<b>Sl.No.</b>	<b>Cadre</b>	<b>Sanctioned</b>	<b>Filled (as on August 2022)</b>	<b>Vacant position</b>	<b>Faculty Recommended by ICAR/UGC/ VCI/ other regulatory bodies</b>
1.	Professors	-	-	0	-
2.	Associate Professor	1	1(Computer science)	0	-
3.	Assistant Professors	1	1(Statistics)	0	-
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>-</b>

## Credentials of the faculty

Name & Designation	Total Service (Years)	Field of Specialization	Total number of Students Guided		*Total number of Publications	Total number of Publications (July 2015 to June 2017)		Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others	Journals	**Others
Dr. D. John Christopher Professor & Head	24	Eco-friendly Management of Plant Diseases	17	05	37	32	03	05	03
Dr. A. Eswaran Professor	29	Edible Mushroom and disease identification	33	11	50	02	01	05	00
Dr. S. Usha Rani Professor	29	Biological control of Plant Diseases	25	05	40	02	00	03	00
Dr. P. Balabaskar Associate Professor	22	Biological management of crop diseases	16	04	56	21	02	08	00
Dr. P. Renganathan, Associate Professor	20	Post-Harvest disease management, Mushroom Technology.	09	01	75	10	00	36	16
Dr. K. Sanjeevkumar Associate Professor	19	Biological Management of Crop diseases and Mushroom	11	01	96	12	02	35	22
Dr. A. Muthukumar; Associate Professor	18	Biological control of soil and foliar borne plant pathogens	08	01	158	07	02	38	55
Dr. T. Sivakumar Associate professor	18	Biological control, IDM, Antimicrobial activity of medicinal plants against plant pathogen	10	01	42	05	00	23	00
Dr. L. Darwin Christdhas Henry Associate Professor	22	Mushrooms	10	01	46	08	10	21	07
Dr. J. Raja Assistant Professor	22	Diagnosis of plant pathogens	03	00	05	00	0	01	00

Dr. C. Kannan Assistant professor	17	Biological control of Plant diseases	07	00	90	00	00	51	39
Dr. T. Suthin Raj Assistant Professor	17	Plant disease management using seaweeds	08	02	84	18	00	24	08
Dr. K. Rajamohan Assistant Professor	17	Biological control for soil borne diseases	06	01	21	04	Nil	14	04
Mr. R. Kannan Assistant professor	17	Biotechnology and disease management	04	00	83	8	00	52	23
Dr. M. Thamarai Selvi. Assistant Professor	17	Biological disease management	05	00	18	01	00	08	04
Dr. R. Sutha Raja Kumar Assistant Professor	17	Edible mushroom cultivation	05	00	45	10	00	30	05
Mrs. S. Sudhasha, Assistant Professor	16	Biological control, Botanicals in plant disease management	04	00	29	00	00	12	14
Dr. V. Jaiganesh Assistant Professor	16	Rice Pathology	02	00	125	01	00	69	49
Dr. S. Sanjaygandhi Assistant Professor	16	Biological control of plant disease management	05	01	54	02	00	31	21
Dr. R. Udhayakumar Assistant Professor	16	Post harvest Pathology & Bio control	5	00	103	06	2	48	27
Dr. L. Vengadeshkumar Assistant Professor	15	Nano science in Plant Pathology, Biopesticides in plant disease management	05	01	45	Nil	Nil	41	23
Dr. S. Sundaramoorthy Assistant Professor	13	Plant Quarantine; Pl. Protection; Mycology	Nil	Nil	15	02	01	02	Nil

\*Includes journal, books, book chapters, conference proceedings

\*\* Includes books, book chapters, conference proceedings

**Awards/Recognitions**

Sl.No	Name of the faculty	Year	Awards	Venue	National / International
1.	Dr. A. Muthukumar	2017	Best Researcher Award	IRDP Group of Journals, Uttar Pradesh	National
2.	Dr. A. Muthukumar	2017	Excellence in Research Scientist Award	International Conference on ABCD, Advances in Agricultural and Bio-diversity conservation for sustainable development, Uttar Pradesh	International
3.	Dr. A. Muthukumar	2017	Best poster presentation Award	Annamalai University	National
4.	Dr. S. Sundaramoorthy	2017	Member in Expert Committee on Invasive Alien Species	National Biodiversity Authority, Chennai	National
5.	Dr. P. Renganathan	2018	Excellence In Research Award	Endling conferences society & ICFA, Jhanbad, Jharkhand	International
6.	Dr. L. Darwin Christdhas Henry	2018	Outstanding Pathologist Award	International conference on interdisciplinary research Technology, Thailand	International
7.	Dr. S. Sundaramoorthy	2018	Member in Expert Committee on Invasive Alien Species	National Biodiversity Authority (NBA), Chennai	National
8.	Dr. S. Sundaramoorthy	2018	In charge of Ramanad District, Krishi Kalyan Abhiyan (KKA) accomplishment	Krishi Kalyan Abhiyan (KKA) accomplishment, Ramnad, Tamil Nadu	National
9.	Dr. C. Kannan	2019	Outstanding Pathologist Award	National College, Trichy	National
10.	Dr. P. Balabaskar	2019	Best researcher award for Grant Generation	Annamalai University	National
11.	Dr. P. Renganathan	2019	Distinguished Scientist Award	ASTHA foundation & ICAR- (GRISAAS)	International
12.	Dr. T. Suthinraj	2019	Excellence in Teaching Award	3 <sup>rd</sup> International conference on GIASE-2019, Tribhuvan University, NEPAL	International

13.	Dr. T. Suthinraj	2019	Best Presentation Award	International conference on current immunological tools for biodiversity and status, CAS in Marine Biology, Annamalai University	International
14.	Dr. V. Jaiganesh	2019	Excellence in Research Award	Award– National college, Trichy	National
15.	Dr. V. Jaiganesh	2019	Best Young Teacher Award	AMITY University, Raipur	National
16.	Dr. L. Vengadeshkumar	2019	Best oral presentation award	Amity University, Raipur	International
17.	Dr. S. Sundaramoorthy	2019 –2020	Successfully accomplished the Locust Control Operation in Scheduled Desert Area (SDA) in Rajasthan and Gujarat	Desert Area (SDA) in Rajasthan and Gujarat, Jodhpur	National
18.	Dr. K. Sanjeevkumar	2020	Best Scientist Award	National conference on SUMMIT-2020 (Science, Medicine, Agriculture, Research and Technology) Bangalore, India	National
19.	Dr. L. Vengadeshkumar	2020	Best oral presentation award	Periyar University	National
20.	Dr. T. Suthinraj	2021	Innovative Article Award	Agriculture and Food e-Newsletter, New Delhi	National
21.	Dr. V. Jaiganesh	2021	Young Agricultural scientist Award	Dr. B. Vasantharaj David Foundation, Chennai.	National

**Abroad visit**

Sl. No.	Name of the Faculty	Country visited	Purpose of visit
1	Dr. P. Renganathan	Bangkok, Thailand, 2019	International conference on food, Agriculture and innovation
2	Dr. K. Sanjeev Kumar	Bangkok, Thailand, 2019	International conference on food, Agriculture and innovation
3	Dr. A. Muthukumar	Tribhuvan University, Nepal, 2019	International Conference on Global Initiatives in Agricultural and Applied sciences for Eco-friendly Environment
4	Dr. T. Sivakumar	Bangkok, Thailand, 2019	International conference on food, Agriculture and innovation
5	Dr. T. Suthin Raj	Tribhuvan University, Nepal, 2019	International Conference on Global Initiatives in Agricultural and Applied sciences for Eco-friendly Environment
6.	Dr. S.Sunadamoorthy	Canada, 2018	Import of Pulses from Canada in respect of MBr fumigation relaxation

**List of funded Projects**

Sl. No.	Year	Sponsored Agency	Total (lakh)	2017-2022 (lakh)
1.	2018-2023	DST-FIST Phase-I	89.00	89.00
2.	2009-2022	Government funding agency	76.00	33.99
3.	2002- 2022	Private Agro-chemical industries	592.00	526.39
<b>GRAND TOTAL</b>			<b>757.00</b>	<b>649.38</b>

**Government funding agency (2017-2022)**

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Funding Agency
1.	2018-2023	Co-ordinators Dr. S. Usharani & Dr. D. John Christopher	DST-FIST Phase-I	89.00	DST
2.	2018-2019	Dr. D. John Christopher	Transfer of technology for income generation to Kaja cyclone affected of carvery delta region through production of indigenous eco-friendly practices	0.50	TNSCST
3.	2015-2018	Dr. T. Suthinraj	Comparative Efficacy of Seaweed spp. for Elicitor value and management of rice foliar disease	20.54	DST, New Delhi
4.	2015-2018	Dr. D. John Christopher	Development and evaluation of bio-inoculants fortified lignite ash (LFA) against major disease of rice in Cauvery delta region of Tamil nadu	12.95	UGC, New Delhi
<b>Total</b>				<b>122.99</b>	

**Private Agro-chemical industries (2017-2022)**

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Funding Agency
1.	2018-2019	Dr. S. Usha Rani	Bio-efficacy of Pyroclostrobin 20% sulphur against early blight of tomato	1.50	M/s. Crystal Crop Protection Ltd.,
2.	2018-2019	Dr. S. Usha Rani	Bio-efficacy of Pyroclostrobin 20% sulphur against tikka leaf spot of tomato	1.50	M/s. Crystal Crop Protection Ltd.,
3.	2018-2019	Dr. D. John Christopher	Bio-efficacy evaluation of microbial formulation against late blight of Potato & downy mildew of Grapes	3.12	M/s. Coromandel Int. Ltd., Chennai

4.	2019-2020	Dr. D. John Christopher	Bio-efficacy study of SAAF GR (Carbendazim 1.92 + Mancozeb 10.08 GR) in Sugarcane against pokkah boeng disease & cuperofix Dispers (Copper Sulphate 47.15 + mancozeb 30% WG) in Pomegranate against disease complex of <i>Cercospora</i> spot and <i>Alternaria</i> spot and bacterial blight	9.05	M/s. UPL India Ltd., Mumbai
5.	2019-2020	Dr. D. John Christopher	Evaluation of Bio efficacy of Thiophanate Methyl 70% WDG for the control of downy mildew, Powdery mildew, and of Anthracnose of Grapes.	4.75	M/s.Sulphur Mills Ltd,Mumbai
6.	2019-2020	Dr. D. John Christopher	Bio efficacy trial of Pluton Azoxystrobin 11.5 %+Mancozeb 30%WP) against downy mildew of Grapes.	1.50	M/s.Crystal Crop Science Ltd.
7.	2019-2020	Dr. D. John Christopher	Bio efficacy trial of Pluton Azoxystrobin 11.5 %+Mancozeb 30%WP) against downy mildew of Grapes.	3.30	M/s.Crystal Crop Science Ltd.
8.	2020-2021	Dr. D. John Christopher	Bio-efficacy and phytotoxicity studies of Zineb75% WP against Greasy spot ( <i>Mycosphaerella citri</i> ) disease of citrus	5.15	M/s. Indofil industries, Ltd., Mumbai
9.	2020-2021	Dr. D. John Christopher	Evaluation of Bio-efficacy and phytotoxicity of Azoxystrobin12.5 + Tebuconazole 12.5 EC against blast and sheath blight of rice	4.95	M/s. Sumitoma chemical India Pvt. Ltd., Mumbai
10.	2020-2021	Dr. D. John Christopher	Bio-efficacy evaluation of Laminarin against powdery mildew of grapes and cucumber	11.05	M/s. UPL India, Ltd., Mumbai
11.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of Mancozeb 75% against leaf blight of onion	5.95	M/s. UPL India, Ltd., Mumbai
12.	2022-2023	Dr. D. John Christopher	M/s. UPL India, Ltd., Mumbai	5.95	M/s. UPL India, Ltd., Mumbai
13.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of Thiphanate Methyi 70 WP Mango diseases	4.5.0	NACL Ltd
14.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of UPST 220 against the diseases of Maize	6.15	M/s. UPL India, Ltd., Mumbai
15.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of Thiphanate WDG against Chilli Diseases	4.75	Sulphur Mills
16.	2022-2023	Dr. D. John Christopher	Bio-efficacy evaluation of UPST 220 against the diseases of Soybean	6.15	M/s. UPL India, Ltd., Mumbai
17.	2016-2017	Dr. P. Balabaskar	Studies on Bio-efficacy of Dimethomorph 50 WP an Azoxystrobin 23 SC against diseases of Grapes	3.77	M/s. Coromandel Int. Ltd.,
18.	2016-2017	Dr. P. Balabaskar	Evaluation of Bio-efficacy, phytotoxicity and residue assessment of Picoxystrobin 22.52% SC on diseases of Grapes and Carbendazim 50% WP on diseases of Grapes and Brinjal	4.23	M/s. Coromandel Int. Ltd., Secunderabad

19.	2016-2018	Dr. P. Balabaskar	Studies on the Bio-efficacy of SAAF against diseases of Mandarin	3.38	M/s. UPL Ltd., Mumbai
20.	2017-2018	Dr. P. Balabaskar	Evaluation of bioefficacy and phytotoxicity of Picoxystrobin 22.52% SC against paddy blast of rice.	1.0	Bharat Rasayan Ltd., New Delhi
21.	2017-2018	Dr. P. Balabaskar	Studies on the bioefficacy of Pyraclostrobin 20% WG against Tikka disease of Groundnut	1.69	Coromandel International Ltd., Secunderabad
22.	2017-2018	Dr. P. Balabaskar	Studies on the bioefficacy of Boscalid fungicide against Powdery mildew and Downy mildew disease in grapes	1.69	Coromandel International Ltd.,
23.	2016-2018	Dr. P. Balabaskar	Bio-efficacy of Juniper against diseases of Groundnut and Paddy	6.24	M/s. UPL Ltd., Mumbai
24.	2017-2018	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity evaluation of spirint (Carbendazim 25% + mancozeb 50 % WS) as soil application against paddy disease complex	3.90	Indofil industries, Mumbai
25.	2018-2019	Dr. P. Balabaskar	Evaluation of Bio-efficacy and phytotoxicity and residue trails of Mancozeb 40 % + Azexystrobin 7% against diseases of Paddy, Chilli and Potato	12.27	M/s. Coromandel Int. Ltd.,
26.	2018-2020	Dr. P. Balabaskar	Evaluation of Bio-efficacy and phytotoxicity of Kasugamycin 3% SL against Xanthomonas leaf spot ( <i>Xanthomonas campestris</i> ) of Cabbage	4.94	Biostd India Ltd., Mumbai
27.	2018-2019	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity evaluation of Kasugamycin 1.5% + validamycin 2.5% SL in transplanted rice.	4.94	M/S sumitomo chemicals Pvt. Ltd., New Delhi.
28.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC 019 against soft rot disease ( <i>Pythium</i> spp.) of Ginger	4.94	Indofil industries, Mumbai
29.	2018-2020	Dr. P. Balabaskar	Evaluation of Bio-efficacy and phytotoxicity of UPF 1317 and UPF 116 against downy mildew, powdery mildew and anthracnose of grapes	8.89	M/s. UPL India Ltd., Mumbai
30.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC014 against purple blotch ( <i>Alternaria porri</i> ) disease of onion.	4.68	Indofil industries, Mumbai
31.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC009 against late blight ( <i>Phytophthora infestans</i> ) and Early blight ( <i>Alternaria solani</i> ) disease of potato.	4.94	Indofil industries, Mumbai
32.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity of IFC017 against downy mildew ( <i>Pseudoperonospora cubensis</i> ) disease of cucumber.	4.68	Indofil industries, Mumbai

33.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC021 against downy mildew ( <i>Pseudoperonospora destructor</i> ) disease of onion	4.68	Indofil industries, Mumbai
34.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFC017 against <i>Alternaria</i> blight disease of carrot.	4.68	Indofil industries, Mumbai
35.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC020 against purple blotch ( <i>Alternaria porri</i> ), leaf blight ( <i>Stemphylium vesicarium</i> ) and anthracnose ( <i>Colletotrichum</i> spp) disease of onion.	4.68	Indofil industries, Mumbai
36.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC008, IFFC009 and IFFC010 against major disease of grapes	14.82	Indofil industries, Mumbai
37.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC010 against purple blotch ( <i>Alternaria porri</i> ) and leaf blight ( <i>Stemphylium vesicarium</i> ) disease of onion.	4.68	Indofil industries, Mumbai
38.	2018-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IFFC017 against leaf spots caused by <i>Alternaria macrospora</i> and <i>Cercospora gossypina</i> and boll rot disease of cotton.	4.94	Indofil industries, Mumbai
39.	2019-2020	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity evaluation of Validamycin 5% + Tebuconazole 15% SC against sheath blight ( <i>Rhizoctonia solani</i> ) and Blast ( <i>Pyricularia oryzae</i> ) diseases of rice	4.94	M/s. Sumitoma chemical India Pvt. Ltd., Mumbai
40.	2019-2020	Dr. P. Balabaskar	Evaluation of bio-efficacy and phytotoxicity of UPF 1317 and UPF 116 against downy mildew, powdery mildew and anthracnose of Grapes	8.89	M/s. UPLIndia, Ltd., Mumbai
41.	2020-2020	Dr. P. Balabaskar	Evaluation of Bio –efficacy, Phytotoxicity of Mancozeb 75% WP as seed treatment & foliar application against Disease complex of Groundnut	2.52	M/s. Indofil industries, Ltd., Mumbai
42.	2020-2020	Dr. P. Balabaskar	Evaluation of Bio –efficacy, Phytotoxicity and residues sample collections of Mancozeb 75% WP as against Disease complex of Grapes	2.70	M/s. Indofil industries, Ltd., Mumbai
43.	2020-2021	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Zineb75% WP against downy mildew ( <i>Plasmopara viticola</i> ) of disease of grapes	5.40	M/s. Indofil industries, Ltd.,
44.	2020-2021	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Zineb75% WP against fruit rot and leaf spot disease of chilli	5.40	M/s. Indofil industries, Ltd., Mumbai
45.	2020-2021	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Zineb75% WP against blast ( <i>Pyricularia oryzae</i> ) disease of rice	5.30	M/s. Indofil industries, Ltd., Mumbai

46.	2020-2021	Dr. P. Balabaskar	Evaluation of Bio-efficacy, Phytotoxicity of Mancozeb 75 % WP as seed treatment & foliar application against disease complex of Ground nut	2.52	M/s. Indofil industries, Ltd., Mumbai
47.	2020-2021	Dr. P. Balabaskar	Evaluation of Bio-efficacy, Phytotoxicity and residue samples collections of Mancozeb 75 % WP against disease complex of Grapes	2.70	M/s. Indofil industries, Ltd., Mumbai
48.	2021-2023	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Cuprous oxide 86.2% WG(IFC067) against diseases of Rice	5.80	M/s. Indofil industries, Ltd., Mumbai
49.	2021-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of impression (Tricyclazole 45% + Hexaconazole 10% WG) against blight ( <i>Alternaria porri</i> ) disease of onion	5.60	M/s. Indofil industries, Ltd., Mumbai
50.	2021-2023	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of IIF-1516 against disease of Rice	5.80	M/s. Indofil industries, Ltd., Mumbai
51.	2021-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of Mancozeb 75% WP against major diseases of Banana	5.80	M/s. Coromandel Int. Ltd., Secunderabad
52.	2021-2023	Dr. P. Balabaskar	Bio-efficacy and phytotoxicity studies of Merger (Tricyclazole 18% + Mancozeb 62% WP) against Leaf spot ( <i>Phylosticta zinziberis</i> ) disease of Ginger	6.00	M/s. Indofil industries, Ltd., Mumbai
53.	2021-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of Mancozeb 75% WP against major diseases of Chilli	5.80	M/s. Coromandel Int. Ltd., Secunderabad
54.	2021-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of Mancozeb 75% WP against major diseases of Cauliflower and Maize	11.21	M/s. Coromandel Int. Ltd.,
55.	2022	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity of bio stimulants - seaweed extract (Indolizer/Maxilizer) granules on growth and yield of Paddy	5.90	M/s. Indofil industries, Ltd., Mumbai
56.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of CIX- 3013 against major disease of Tomato	5.80	M/s. Coromandel Int. Ltd., Secunderabad
57.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of CIX- 3016 against major disease of Paddy	5.80	M/s. Coromandel Int. Ltd., Secunderabad

58.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of CIX- 3013 against major disease of Potato	5.80	M/s. Coromandel Int. Ltd., Secunderabad
59.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of CIX- 3013 against major disease of Grapes	5.80	M/s. Coromandel Int. Ltd., Secunderabad
60.	2022-2023	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity studies of mPGP and AbdA granules on paddy	5.49	M/s. Coromandel Int. Ltd., Secunderabad
61.	2022-2024	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity of Famoxadone 16.6% Cymoxanil +22.1% Sc against downy mildew disease of grape	3.00	Rainbow Ltd.,
62.	2022-2024	Dr. P. Balabaskar	Evaluation of Bio-efficacy and Phytotoxicity of Pyraclostrobin 133g 1% + Epoxiconazole 503 SE against Sigatoka leaf spot of banana	2.25	Rainbow Ltd.,
63.	2016-2018	Dr. T. Sivakumar	Bio-efficacy and Phytotoxicity of Azoxystrobin + Tebuconazole SC on Chilli and Rice diseases	5.70	M/s. Nagarjuna Agrichem Ltd., Hyderabad
64.	2017-2019	Dr. T. Sivakumar	Bio-efficacy and phytotoxicity studies of Bio nematon, Bio dewcon and Sting on Chilli, Cucumber, Grapes and Tomato diseases	7.04	M/s. T. Stanes & Co., Coimbatore
65.	2017-2019	Dr. T. Sivakumar	Bio-efficacy and Phytotoxicity of Bio-cure F WP on Chilli <i>Fusarium</i> Wilt; Bio-cure B WP and Bio Nematon WP on Tomato against <i>Alternaria solani</i> and root knot nematode	4.20	M/s. T. Stanes & Co., Coimbatore
66.	2018-2019	Dr. T. Sivakumar	Bio-efficacy of TS-2018 (Hydrophobic volatile oil) on chilli bacterial leaf spot ( <i>Xanthomonas campestris</i> ) diseases	1.50	T. Stanes @ Co., Coimbatore
67.	2018-2020	Dr. T. Sivakumar	Evaluation of a fungicide PIF 320 5 % SC against Powdery mildew of Chilli	3.90	M/s. PI Industries, Gurgaon
68.	2018-2020	Dr. T. Sivakumar	Evaluation the bio-efficacy of liquid formulation of bio-dewcon ( <i>Ampelomyces quisqualis</i> 5% $1 \times 10^8$ / ml) against Powdery mildew in Grapes	1.40	M/s. T-stanes & company Ltd, Coimbatore
69.	2022	Dr. T. Sivakumar	Evaluation of Bio-efficacy and Phytotoxicity studies of Platina and fantac plus on Cotton	5.488	Coromandel international Ltd., Secunderabad.
70.	2022	Dr. T. Sivakumar	Evaluation of Bio-efficacy and Phytotoxicity studies of AbdA foliar, fantac plus and platina on Chilli	5.488	Coromandel international Ltd., Secunderabad.

71.	2020-2021	Dr. T. Sivakumar	Evaluation of Bio-efficacy, Phytotoxicity of Zineb 75 % WP against Blight and Rust disease of wheat	5.40	M/s. Indofil industries, Ltd., Mumbai
72.	2018-2020	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of IFFC020 against late blight ( <i>Phytophthora infestans</i> ) and Early blight ( <i>Alternaria solani</i> ) disease of tomato.	4.68	Indofil industries Ltd, Mumbai
73.	2018-2020	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of IFFC008 against late blight ( <i>Phytophthora infestans</i> ) and Early blight ( <i>Alternaria solani</i> ) disease of tomato.	4.68	Indofil industries Ltd, Mumbai
74.	2018-2020	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of IFFC014 against late blight ( <i>Phytophthora infestans</i> ) and Early blight ( <i>Alternaria solani</i> ) disease of tomato.	4.68	Indofil industries Ltd, Mumbai
75.	2018-2020	Dr. K. Sanjeev Kumar	Studies on the bio-efficacy of Azoxystrobin +Cyproconazole fungicide on fungal diseases of maize	1.85	Coromandel international Ltd., Secunderabad.
76.	2020-2021	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of Mancozeb75% WP against early blight ( <i>Alternaria solani</i> ) and late blight ( <i>Phytophthora infestans</i> ) disease of potato	5.40	M/s. Indofil industries, Ltd., Mumbai
77.	2020-2021	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of Zineb75% WP against early blight ( <i>Alternaria solani</i> ) and late blight ( <i>Phytophthora infestans</i> ) disease of potato	5.40	M/s. Indofil industries, Ltd., Mumbai
78.	2021-2023	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of AVATAR (Hexaconazole 4% + Zineb 68% WP) against Powdery Mildew ( <i>Oidium manifeferae</i> ) and Anthracnose ( <i>Colletotrichum</i> sp.) diseases of Mango	5.60	M/s. Indofil industries, Ltd., Mumbai
79.	2021-2023	Dr. K. Sanjeev Kumar	Bio-efficacy and phytotoxicity studies of AVATAR (Hexaconazole 4% + Zineb 68% WP) against Rust of Soya Bean <i>Phakopsora pachyrhizi</i> , PSS (Purple seed stain) and leaf spot diseases of soyabean	5.60	M/s. Indofil industries, Ltd., Mumbai
80.	2022	Dr. K. Sanjeev Kumar	Evaluation of Bio-efficacy and Phytotoxicity studies of AbdA drip and Fantac plus on Tomato	5.488	Coromandel international Ltd., Secunderabad.
81.	2022	Dr. K. Sanjeev Kumar	Evaluation of Bio-efficacy and Phytotoxicity studies of AbdA foliar and Guard -5 on Tomato	5.488	Coromandel international Ltd., Secunderabad.

82.	2022	Dr. K. Sanjeev Kumar	Evaluation of Bio-efficacy and Phytotoxicity studies of Guard –5and Fantac plus on Grapes	5.488	Coromandel international Ltd., Secunderabad.
83.	2022	Dr. K. Sanjeev Kumar	Evaluation of Bio-efficacy, Phytotoxicity of Bio stimulants – seaweed extract (Indolizer and Maxilizer) granules on growth and yield of onion	5.80	M/s. Indofil industries, Ltd., Mumbai
84.	2015-2017	Dr. A. Muthukumar	Testing of new seed treatment fungicides Sedaxane 3% + Fludoxanil 4.63% 90 FS against disease complex in Potato	2.00	M/s. Syngenta India Ltd., Coimbatore
85.	2016-2018	Dr. A. Muthukumar	Testing of new fungicide Sedaxane + Fludoxanil + Mefonoxam 300 FC against Corn diseases and Pydiflumetofen + Difenconazole 200 SC against Tomato, Chilli and Grapes diseases	8.00	M/s. Syngenta India Ltd., Coimbatore
86.	2017-2018	Dr. A. Muthukumar	Testing of Carbendazim 50% WP against Powdery mildew in Pea	2.60	M/s. Crystal Crop Protection Ltd., Delhi
87.	2017-2018	Dr. A. Muthukumar	Evaluation and bio-efficacy of Azoxystrobin 23 SC against mango and chilli diseases	2.50	M/s Bhagiradha Chemicals Ltd., Hyderabad
88.	2017-2019	Dr. A. Muthukumar	Bio-efficacy and phytotoxicity evaluation of Metiram 70% WG against early blight of Tomato	2.50	M/s. Crystal Crop Protection Ltd., Delhi
89.	2017-2019	Dr. A. Muthukumar	Bio-efficacy and phytotoxicity evaluation of Metiram 70% WG against tikka leaf spot in Groundnut	2.50	M/s. Crystal Crop Protection Ltd., Delhi
90.	2017-2019	Dr. A. Muthukumar	Testing of new fungicide Amistar Top 325 SC against Groundnut, Black gram and Banana diseases	6.00	M/s Syngenta India Ltd, Coimbatore
91.	2017-2019	Dr. A. Muthukumar	Testing of new fungicide viz., Vibrance Maxx against Groundnut diseases, TASP 30EC against Mango and Black gram diseases	6.00	M/s Syngenta India Ltd, Coimbatore
92.	2017-2019	Dr. A. Muthukumar	Testing of new fungicide viz., APN+DFZ 200SC against Potato early blight, IZM+DFZ 250SC against Rice diseases and Amistar Top 325 SC against Okra diseases	6.00	M/s Syngenta India Ltd, Coimbatore
93.	2017-2019	Dr. A. Muthukumar	Bio-efficacy and phytotoxicity evaluation of Metiram 70% WG against early blight of Tomato & Groundnut	5.00	M/s. Crystal Crop Protection Ltd.,

94.	2017-2019	Dr. A. Muthukumar	Bio-efficacy studies of a novel combination fungicide CCP-1409 SC against sheath blight of Paddy	3.32	M/s. Crystal Crop Protection Ltd., Delhi
95.	2018-2019	Dr. A. Muthukumar	Bio-efficacy and Phytotoxicity evaluation of Picoxystrobin 22.52% SC against powdery mildew and downy mildew in grapes	1.50	M/s. Crystal Crop Protection Ltd., Delhi
96.	2018-2019	Dr. A. Muthukumar	Bio-efficacy and Phytotoxicity evaluation of Picoxystrobin 22.52% SC on Rice	1.50	M/s. Crystal Crop Protection Ltd., Delhi
97.	2019-2020	Dr. A. Muthukumar	Testing of coded molecule CCP-2806 against rice sheath blight and brown spot disease.	1.50	M/s Crystal Crop Protection Ltd., New Delhi
98.	2020-2021	Dr. A. Muthukumar	Testing of coded molecule CCP-2806 against rice sheath blight and brown spot disease.	1.50	M/s Crystal Crop Protection Ltd., New Delhi
99.	2020-2021	Dr. A. Muthukumar	Evaluation of Tubuconazole 12.5%+Carbendazim 12.5% SC on Rice	3.50	Bioscience Research Foundation Project, Chennai
100.	2022-2023	Dr. A. Muthukumar	Bio efficacy studies of CF-1020 SC for downy mildew and anthracnose disease on grapes	2.00	M/s Crystal Crop Protection Ltd., New Delhi
101.	2020-2021	Dr. T. Suthinraj	Evaluation of KK-21 against powdery mildew ( <i>Uncinula necator</i> ) and Anthracnose ( <i>Elsinoe ampelina</i> ) diseases on Grape	4.50	M/s Sulphur Mills Ltd., Mumbai
102.	2022-2023	Dr. T. Suthinraj	Bio-efficacy of ALFI 216 against Whit grubs, Termites, Collar rot, Sclerotium rot and root rot in groundnut field.	5.50	Atul Ltd.
103.	2022-2023	Dr. T. Suthinraj	Bio-efficacy of ALF 400 as a fungicide product against sheath blight and blast in rice field.	5.50	Atul Ltd.
104.	2015-2017	Dr. R. Udhayakumar	Testing of new fungicides viz., Bravo top 550 SC on Tomato and Chilli and Moddus EC on Rice	6.00	M/s. Syngenta India Ltd., Coimbatore
105.	2016-2018	Dr. R. Udhayakumar	Testing of new fungicide viz., Bravo Top 550 EC, Pydiflumetofen+ Difenconazole 200 SC, Paclobutrazole 25 SC against groundnut diseases and Penconazole 10 EC against mango diseases	6.00	M/s. Syngenta India Ltd., Coimbatore

106.	2017-2019	Dr. R. Udhayakumar	Testing of new fungicide Mandipropamid 23 SC against Cucumber, Watermelon and Bitter gourd diseases	6.00	M/s. Syngenta India Ltd., Coimbatore
107.	2017-2019	Dr. R. Udhayakumar	Testing of new fungicide Orondis Ulta 280SC, 170 SC against Grapes and Tomato diseases and APN+DFZ 200 SC against Mango disease	6.00	M/s. Syngenta India Ltd., Coimbatore
108.	2017-2019	Dr. R. Udhayakumar	Testing of new fungicide Folio Gold 36.4 SC against citrus and ginger diseases	4.00	M/s. Syngenta India Ltd., Coimbatore
109.	2019-2021	Dr. R. Udhayakumar	Testing of new fungicide Orondis Flexi 170SC against watermelon diseases and Miravis ace 275 SE against cotton diseases	4.00	M/s. Syngenta India, Ltd., Coimbatore
<b>Total</b>				<b>526.39</b>	

### 6.4.3. Technical and Supporting staff

The technical and supporting staffs of the Department of Plant Pathology is given below

Sl. No.	Sanctioned Posts	Staff in place	Designation (number within parentheses)	Responsibility	Administrative staff requirement as per the ICAR
1	Secretarial staff	1	Special officer	Establishment Admirative work for Department of Plant Pathology	-
2	Technical staff	2	Deputy Farm Superintendent	Maintenance of laboratory and stock, glass house and experimental plots	Lab Assistant -1
3	Ministerial staff	5	Helper (3) Gardener (2)	Dispatch of letters, circular maintenance, assisting practical classes	Field Assistant -1 Assistant - 1

### 6.4.4. Class room and laboratories

The Department has well equipped class rooms and laboratories with large collections of disease specimen and photographs, including a bio-technological laboratory for genetic identification of pathogenic races.

Sl. No.	Name of the Instructional Unit	Size (ft) /Area (sq. ft)	Seating capacity	Description & Equipment's housed
1	PG & Ph.D.- Lab 1	29' × 20' = 580 sq.ft	20	<ul style="list-style-type: none"> <li>➤ PCR-Thermocycler</li> <li>➤ Gel Documentation System</li> <li>➤ Electrophoresis Unit</li> <li>➤ UV Transilluminator</li> <li>➤ Fermentor</li> <li>➤ Microscope with bright field Phase contrast and digital SLR Camera</li> <li>➤ ELISA Reader</li> <li>➤ Spectrophotometer</li> <li>➤ Cooling Centrifuge</li> <li>➤ Deep freezer</li> <li>➤ Micro centrifuge</li> <li>➤ Camera lucida</li> </ul>
2	PG & Ph.D. -Lab 2	31' × 20' = 620 sq.ft	20	<ul style="list-style-type: none"> <li>➤ Bio safety cabinet</li> <li>➤ Laminar Air Flow</li> <li>➤ Hot Air Oven</li> <li>➤ BOD</li> <li>➤ Shaking incubator</li> <li>➤ Autoclave</li> <li>➤ Cooling orbital shaking incubator</li> </ul>

3	PG & Ph.D. -Lab 3 (Biotechnology Lab)	08' × 20' = 160 sq.ft	10	<ul style="list-style-type: none"> <li>➤ RT-PCR</li> <li>➤ Western blot unit</li> <li>➤ Growth Chamber</li> <li>➤ Lyophilizer</li> <li>➤ -80°C deep freezer</li> <li>➤ Fluorescent Phase contrast Microscope</li> <li>➤ Digital microscope</li> <li>➤ Fluorometer</li> </ul>
4	Ph.D. Class room (Smart Class room)	21' × 20' = 420 sq.ft	20	<ul style="list-style-type: none"> <li>➤ Smart classroom</li> </ul>
6	UG -Lab 1	42' × 25'=1050 sq.ft	30	<ul style="list-style-type: none"> <li>➤ LED TV and LCD projector</li> <li>➤ Student microscope- 30 nos.</li> <li>➤ Ocular Micrometer</li> <li>➤ Stage Micrometer</li> <li>➤ Plant disease images</li> </ul>
7	UG -Lab 2	36' × 25' = 900 sq.ft	30	<ul style="list-style-type: none"> <li>➤ LED TV and LCD projector</li> <li>➤ Student microscope- 30 nos.</li> <li>➤ Plant disease images</li> </ul>
8	UG -Lab 3	42' × 30'=1260 sq.ft	30	<ul style="list-style-type: none"> <li>➤ LED TV and LCD projector</li> <li>➤ Student microscope- 30 nos.</li> <li>➤ Plant disease images</li> </ul>
9	Mushroom Lab	31' × 15' = 465 sq.ft		<ul style="list-style-type: none"> <li>➤ Edible mushroom production</li> </ul>
10	Mushroom shed	30' × 15' = 450 sq.ft		<ul style="list-style-type: none"> <li>➤ Exclusive for milky mushroom cultivation</li> </ul>
11	Glass house	38' × 15' = 570 sq.ft		<ul style="list-style-type: none"> <li>➤ To carry out the pot culture experiments</li> </ul>
12	Pot Culture Yard	40 cents		<ul style="list-style-type: none"> <li>➤ To carry out the pot culture experiments</li> </ul>
13	Experimental trial Plot	60 cents		<ul style="list-style-type: none"> <li>➤ To conduct the Experimental trials for research scholars</li> </ul>
14	Library	250 sq.ft	20	<ul style="list-style-type: none"> <li>➤ Books - 342</li> <li>➤ E-Books - 155</li> <li>➤ M.Sc. (Ag.) Thesis - 308</li> <li>➤ Ph.D. Thesis - 035</li> <li>➤ E-Journals - 032</li> <li>➤ Journals - 012</li> </ul>

Lab -1

Lab-2



Lab -3



PG Class room



UG -Lab



Mushroom shed



#### 6.4.5. Conduct of Practical and Hands-on-Training

<p>Hands on training during classes</p>	<p><b>Plant Pathogenic fungi</b></p> <ul style="list-style-type: none"> <li>➤ Identification of fungi up to species level</li> <li>➤ Isolation and purification of Nucleic acid from fungal pathogens</li> <li>➤ Detection of phytopathogenic fungi using specific primers</li> <li>➤ Molecular characterization and dendrogram analysis for identification of fungal species</li> </ul> <p><b>Plant Virology</b></p> <ul style="list-style-type: none"> <li>➤ Isolation and purification of plant viruses</li> <li>➤ SDS-PAGE for molecular weight determination</li> <li>➤ Detection and diagnosis of plant viruses with serological (ELISA)</li> <li>➤ DAC- ELISA</li> <li>➤ DAS-ELISA</li> <li>➤ DIBA</li> <li>➤ Western blots (v) (ab) 2-ELISA.</li> <li>➤ Electron microscopy for studying viral particle morphology</li> <li>➤ Identification and quantification of virus from infected plants through RT-PCR</li> </ul> <p><b>Plant Pathogenic Prokaryotic organisms</b></p> <ul style="list-style-type: none"> <li>➤ Isolation and identification of Phytopathogenic bacteria up to race level - Enumeration and Purification methods</li> <li>➤ Isolation of genomic DNA and molecular characterization</li> <li>➤ Identification of prokaryotic organisms using 16S rDNA, and other gene sequences</li> <li>➤ Specific detection of phytopathogenic bacteria using specific primers</li> </ul>
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	<ul style="list-style-type: none"> <li>➤ RAPD profiling of bacteria</li> <li>➤ Diagnosis and management of important diseases caused by Bacteria and Mollicutes</li> </ul> <p><b>Integrated Disease Management</b></p> <ul style="list-style-type: none"> <li>➤ Early detection of plant diseases using molecular tools RT-PCR, ELISA and DIBA,</li> <li>➤ Screening of natural antagonistic bio agents, plant products against crop disease management</li> <li>➤ Estimation of an innate immunity enzymes and Phenolic compound in the induction systemic resistance of crop plants.</li> <li>➤ Evaluation of chemicals and antibiotics against plant pathogens</li> <li>➤ Evaluation of fungal and bacterial bio solutions against plant pathogens</li> <li>➤ Different methods of application of fungicides and bio solutions</li> <li>➤ Artificial epiphytotic and screening of resistance against crop diseases</li> </ul> <p><b>Mushroom</b></p> <ul style="list-style-type: none"> <li>➤ Studies on various cultivation practices for edible mushroom</li> <li>➤ Studies on influence of mushroom diet on the haematological and lipid profile of Albino rats with due approval from animal ethical committee.</li> <li>➤ Isolation of anti microbial compounds from mushrooms against plant diseases (GC-MS, LC-MS/MS)</li> </ul>
<p>Field visits/ visit to renowned institutes, industries, progressive farms etc.,</p>	<ul style="list-style-type: none"> <li>➤ Field visits are arranged for the students to research institutes like NIFTEM – Thanjavur, Pondicherry University, CUTN- Tamil Nadu.</li> <li>➤ Institutional visits are arranged to ICAR-NRCB Trichy, ICAR-SBI Coimbatore for acquainting knowledge in the identification of different types of diseases in crops</li> <li>➤ Educational tour is arranged for the students to visit ICAR and Central Govt. institutes located at Western ghats areas such as Rubber board, UPASI, CTCRI, ICRI to acquire the knowledge of disease epidemiology of spices and plantation crops</li> <li>➤ Visit to bio-control lab PASIC, Puducherry to gain knowledge on the establishment of bio-control unit.</li> <li>➤ Visit to mushroom production unit to gain knowledge to set up an economically viable mushroom production unit.</li> <li>➤ Visit to Progressive farmers field to know the adoption of disease management technologies</li> </ul>

#### 6.4.6. Supervision of students in Ph.D. programme

Every scholar shall have a Research Supervisor (among the recognized guides), who will be appointed by the Vice-Chancellor on the recommendation of the DRC (Doctoral Research Committee), Head of the Department and the Dean, Faculty of Agriculture. Research supervisors approved by the Vice-Chancellor only can be the guide for the students.

A teacher having Ph.D. with 5 years of service and PG teaching is eligible for teaching and guiding Ph. D. scholars. A teacher should have a minimum of three years of service before retirement for allotment of doctoral candidates. DRC will discuss, advice and recommend on all matters connected with the scholar's research from admission till the completion of the programme.

Each Ph.D. scholar shall have a Research Advisory Committee (RAC) to guide the scholar in carrying out his/her programme. RAC for every student consisting of not fewer than four

members with the Supervisor as Chairperson. The RAC should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the RAC at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director, DARE for information.

A Research Advisory Committee shall be constituted with the approval of the University for each candidate separately, immediately after his/her admission. The purpose of the RAC is to provide expert opinion on frontline research.

#### **Functions of RAC**

- RAC will discuss, advice and recommend on all matters connected with the scholar's research from admission till the completion of the programme.
- Approve the topic of research and the synopsis.
- Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D.
- If necessary, recommend and approve change of title of dissertation / thesis and change of Research Supervisor.
- Conduct the pre-submission presentation (before the submission of synopsis) and to give a certificate to this effect to be submitted along with the synopsis.
- The Research Advisory Committee will meet every semester to scrutinize the research proposal / progress report submitted by the research scholar.
- To assess the conduct of experiments / field work, peruse laboratory notebooks, data recording, analysis & publication and review and endorse the annual progress report of the research scholar.

#### **Submission of Thesis**

- The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department. Conduct the pre-submission presentation (before the submission of synopsis) and to give a certificate to this effect to be submitted along with the synopsis

<b>Sl.No</b>	<b>No. of recognised Teachers for Ph.D. guidance</b>	<b>Academic year</b>	<b>Intake of students</b>	<b>Student teacher ratio</b>
1	22	2021-2022	02	1:11.0
2	21	2020-2021	04	1:5.25
3	21	2019-2020	08	1:2.62
4	21	2018-2019	02	1:10.5
5	21	2017-2018	-	-

**List of Ph.D. Degree Awarded (2017-2022)**

Sl. No	Year of Awarded	Name of the Faculty	Name of the student Guided	Title of thesis
1.	2017	Dr. P. Balabaskar	L.Vengadesh kumar	Studies on the effect of plant protects against bacterial blight of rice
2.	2017	Dr. A. Eswaran	R. Sudha Raja kumar	Studies on the cultural, physiological and medicinal aspects of blue oyster mushroom ( <i>Hypsizygus ulmarius</i> )
3.	2019	Dr. T. Suthin Raj	K. Hane Graff	Comparative efficacy of seaweeds for the production of elicitors and management of <i>Rhizoctonia solani</i> (Kuhn) causing sheath blight of rice
4.	2021	Dr. A. Muthukumar	A. Karmel reetha	Studies on the management of tomato ( <i>Solanum lycopersicum</i> L.) damping-off caused by <i>Pythium</i> species.
5.	2021	Dr. L. Darwin Christdhas Henry	A. Amutha	Antifungal potential of seaweeds against <i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i> – a threatful plant pathogen causing fusarial wilt in tomato
6.	2022	Dr. D. John Christopher	D.E. Kavi Newton	Studies on the antagonistic and antimicrobial potential of certain eco-friendly components against major diseases of rice incited by <i>Pyricularia oryzae</i> , <i>Bipolaris oryzae</i> , <i>Rhizoctonia solani</i> and <i>Sarocladium oryzae</i> in the Cauvery delta region of Tamil Nadu

**Ph.D. Scholars awarded with fellowships**

Year	No. of Candidate	Name of the student	Fellowship	Sponsored by
2020-2021	02	Livitha R Evanjalin, J	Project Fellow	UPL India Ltd., Mumbai
2019-2020	02	Manikada Choudhry Livitha R	Project Fellow	UPL India Ltd., Mumbai
2018-2020	02	Karmel reetha A Kavi Newton D. E	Project Fellow	DST-PURSE
2015-2018	02	Hane Graff K. Kavi Newton D. E	SRF Project Fellow	DST – SERB (Young scientist) UGC (MRP)
2015-2020	01	Andeeswari D	SRF	Rajiv Gandhi National Fellowship (RGNF) – UGC

#### **6.4.7. Feedback of stakeholders (Students, farmers, company, parents)**

##### **Feedback from the students.**

To facilitate a good relationship with students a mentor-Mentee system is being followed, in which each staff is allotted with a student. The staff will guide and address the student's grievances including personal problems. Feedback from will be received from the students accordingly action will be taken.

1. During the academic year 2019-20 the Ph.D. scholars placed a request to introduce a new course instead of MOOC course in their curriculum, since the scholars felt it very difficult to clear the subject.
2. Scholars earnestly requested for the conduct of an educational tour to visit various ICAR institutes and to directly experience the hot spot disease incidence of crop plants
3. Scholars requested the provision of chemicals and specific primers for fungal pathogens to carry out their molecular work to gain practical knowledge in biotechnological aspects.
4. The scholars requested 20 days prior notification for the conduct of their credit seminars
5. The scholars placed a request for the provision of bio-safety equipment's to be used during isolation and inoculation of plant pathogenic cultures and to avoid the inhaling of pathogens while working in the Laminar flow chamber.

##### **Action taken**

1. According to the request made by the students a 'Topical research course' was introduced in the curriculum instead of MOOC Course, with the approval of academic council and syndicate.
2. As per the request received from the scholars an educational tour was conducted during the academic year 2020-2021 which enabled the scholars to visit various ICAR and Central Government institutes such as CTCRI, CPCRI, ICRI, Rubber board and to organize field trips along the western ghats to observe the disease incidence of spices and plantation crops.
3. Immediately the required chemicals were purchased from the University A1 account and from private funding agencies for the benefit of the scholars for their uninterrupted work on molecular aspects.
4. The Head of the Department directed the respective research supervisors to consider the request favourably.
5. The request was brought to the notice of the University authorities and immediately a bio-safety cabinet was purchased and commissioned in the Department, from the fund provided by DST-FIST.
6. Once in a month research review meeting is conducted for the PG students and the chairman with the advisory committee members review the students research work and suggestions are given for further improvement.

##### **Farmers**

Feedback from farmers is obtained during their visit to the Department with their crop disease problems.

1. The Technology developed by the Department regarding the package of practices for disease management is effectively transferred through the RAWE programmes and during regular field visits by the staff.
2. Consultancy services in the technology development for mushroom production are being offered.
3. Training programmes are conducted to transfer of Technology on Fortified Lignite Flyash, Enriched compost and Indigenous eco-friendly pesticides for Improvement in the livelihood status of the farmers.

### Company

The staffs maintain a good relation with the agro industries/pesticide industries. Through their interactions, information on the development of new molecules and details on emerging diseases/pests are obtained.

### Parents

Feedback is obtained from the parents in every semester and the academic and personal problems of the students are solved.

#### 6.4.8. Student intake and attrition in the programme for last five years (Ph.D. Programme)

Actual student admitted in last five years					Attrition (%)				
2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
--	2	8	4	2	0	0	0	0	0

#### Student intake and progression in the programme for last five years (M.Sc.(Agri.) Programme)

Academic Year	Number of students graduated	Employment			Total	Percent Progression
		State Govt.	Private	Entrepreneur		
2021-2022	1	-	-	1	1	100
2020-2021	2	-	2	-	2	100
2019-2020	1	-	1	-	1	100
2018-2019	-	-	-	-	-	-
2017-2018	2	2	-	-	1	100

### ICAR – NET Qualified

Year of Ph.D. Awarded	Name	Roll Number
2017	L. Vengadeshkumar	1610800394
	R. Sudha Raja Kumar	1080800607
2021	A. Karmal Reeta	2080801051

#### 6.4.9. ICT Application in Curricula Delivery

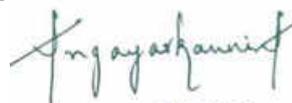
The class rooms are equipped with LED TVs and LCD facilities. Computers with internet connectivity (10 nos.) are also available for the faculty and students use. The teaching faculty has updated the usage of IT enabled gadgets. All the classes (Diploma/UG/PG/Ph.D.) are handled with audio visual aids and video clippings. Students are made to make presentations in the recent topics of relevant subjects with the use of ICT tools. To enhance quality in research, students are encouraged to access relevant literatures from various e – sources.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All-India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. A. Angayarkanni** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & Seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
Ph.D. Fruit Science**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)



**FACULTY OF AGRICULTURE**

**Department of Horticulture**

**SELF STUDY REPORT OF**

**PH. D. (HORT.) FRUIT SCIENCE**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## Self-Study Report

### 6.4 Name of the programme: Ph. D. (Hort.) Fruit Science

Offered by: Department of Horticulture

#### 6.4.1. Brief History

The Division of Horticulture came into existence in 1958 with an objective of offering horticultural subjects to B.Sc. (Ag.) graduates. In the early stages, the Division was attached with the Department of Agricultural Botany. Under the leadership of renowned Horticulturist of International repute, Dr. S. Krishnamoorthy, a pioneering post graduate course in Horticulture was introduced for the first time in South India in 1958-59. With further expansion, the erstwhile Division of Horticulture functioning from 1958-59 onwards was upgraded as a Department in 1991 with the revival of a full fledged doctoral programme - Ph. D. in Horticulture and later on Ph.D. in Horticulture with course work from 2013 onwards. This integrated Ph.D. in Horticulture programme was continued upto 2021. However, during last board of studies held on 14<sup>th</sup> May 2022 the existing Ph.D in Horticulture was bifurcated into four specialized degree programme *viz.*, Fruit Science, Vegetable Science, Floriculture and Landscaping and Plantation, Spices, Medicinal and Aromatic Crops based on BSMA recommendation of 5<sup>th</sup> Deans committee of ICAR.

Historical Itinerary	Year/Period
Division of Horticulture	1958
First PG Programme in Horticulture	1958-59
Upgraded as a Department	1991
Post graduate Programme M.Sc. (Ag.) in Horticulture	1991
M.Sc. (Hort.) in Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2012 -2013
Ph. D. in Horticulture	1991
Ph. D. in Horticulture with course work	2013
Ph. D. Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2022 - 2023 onwards

The Ph. D. (Hort.) Fruit Science has 100 credits in 6 semesters which includes 12 credits for major courses, 6 credits for minor courses, 05 credits for supporting courses, 02 credits for seminar and 75 credits for Ph.D thesis research. In addition to 100 credits, 02 contact hours for non credit compulsory courses and 02 contact hours for MOOC have been included to improve the research acumen and employability of the students. Revision of the curricula was carried out in the academic year 2022-2023 in concurrence with the latest recommendations from BSMA and 5<sup>th</sup> Deans Committee of ICAR.

#### Semester wise Distribution of Credits

Semester	Major Course	Minor Course	Supporting Course	Seminar	Research
I	6	4	2	1	2
II	6	2	3	1	10

III	-	-	-	-	15
IV	-	-	-	-	16
V	-	-	-	-	16
VI	-	-	-	-	16
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>

#### Distribution of Courses

Course code	Course Title	Credit hour (Theory + Practical)
<b>Major Courses</b>		12
FSC 601*	Innovative Approaches in Fruit Breeding	3+0
FSC 602*	Modern Trends in Fruit Production	3+0
FSC 603	Recent Developments in Growth Regulation	3+0
FSC 605	Arid and Dry Land Fruit Production	2+0
FSC 608	Smart Fruit Production	2+0
<b>Minor Course</b>		6
FSC 604	Advanced Laboratory Techniques	1+2
FSC 606	Abiotic Stress Management in Fruit Crops	2+1
FSC 607	Biodiversity and Conservation of Fruit Crops	2+1
<b>Supporting Courses</b>		5
COM 601	Advances in Computer Applications (1+1)	2
STA 601	Advances in Designs of Experiments (2+1)	3
<b>Seminar</b>		
	Doctoral Seminar - I (0+1)	1
	Doctoral Seminar - II (0+1)	1
<b>Research</b>		
	Doctoral Research (0+75)	75
<b>Non credit courses</b>		
	<b>MOOC (2+0)</b>	-
	Research and Public Ethics (2+0)	-

#### Vision

- Imparting quality education.

- Increasing employability of graduates in Fruit Science to meet the industrial demand and societal need by providing updated syllabus content on par with National and global standards.

### Strategic plan to achieve Vision and Goal

Goal	Programme Objectives	Implementation Plan	Performance Metrics /Timeline
Quality education	To prepare students to generate knowledge on management, production and strategies leading to the development of research philosophies, concepts and methodologies.	Classes are handled by experienced Faculty through class room teaching and practical demonstration.	Periodical class tests, practical assignments, quiz and end term exams are conducted to evaluate the performance of students.
Employability and National standards	To inculcate ability in students to critically analyze and comprehend the knowledge gained from a range of scientific data to approach cultivation problems and reach appropriate solutions in the area of their specialization.	The students are guided to collect literature, identify gaps and propose research problem and conduct research on it.  Timely revision of curriculum according to BSMA and ICAR Deans committee.	The advisory committee supervises and evaluates the students during end of every semester.
Professional ethics	To enhance capability of students to adhere to professional ethics and responsibilities related to horticultural practices.	The curriculum includes field / lab research activities making the students aware of professional norms and resource usage in cautious manner.	The student is continuously monitored by periodical review of work done in field, use of agricultural inputs, recording timely observations and verification of data by advisory committee.
Technology	To facilitate exposure of students to function	The interdisciplinary research approach is	The activity of students in related

transfer	effectively as an individual and as a member or leader in diverse teams or interdisciplinary environment.	encouraged in making the students work in a diverse environment.	research labs is evaluated by the major supervisor from time to time.
Lifelong learning	To engage the students in life-long learning and professional development through self- directed studies.	The programme includes compulsory courses along with research, seminars and publication of research work.	The continuous evaluation of courses is done through theory and practical exams while research is evaluated based on research progress in each semester and thesis submission at the end of the degree.

### Accomplishments

The Department of Horticulture is a pioneer institute which offered post graduate Horticultural programme in South India during 1958-59. The Horticulturists of international repute like Dr. S. Krishnamoorthy, Prof. P. Kalyanasundaram and Dr. L. R. Rajasekaran have fuelled the growth of this Department in its early stage and formed the basis of its present state of existence. The Department has been imparting quality education by using updated technologies in the field of education with audio visual aids, method demonstrations and participatory approach and interactive practical experiments. **The Department was awarded with DST - FIST funds for infrastructure development. The syllabus content are updated as per suggestions by stake holders, lead organisations in agriculture and scientific experts. The students are given practical exposure in horticulture industries by hands- on - training and by study tours and industrial trainings.** The students are given counselling by the teachers for their academic improvement and future planning. Special coaching for ICAR JRF, SRF and NET examinations are provided.

The Department of Horticulture has contributed to the horticulture sector by researching upon the need based objectives in the coastal area. The location specific research outcomes are disseminated to the farmers in the coastal Tamil Nadu to propel horticultural crops in the coastal farming system. The department distributes certified seeds of "Annamalai brinjal" to the farmers. **The standardized package of practices developed for rice-fallow vegetable production, common tropical vegetables and introduction of nutritionally rich/economically feasible less known crops has been carried out. For the industrial sector stake holders, the Department is providing its research expertise by conducting product evaluation research.**

The Department is training the farmers in new technologies that are upcoming in the field of horticulture and creating awareness among the farmers about the new crops, varieties and techniques. Diagnostic services to the farmers are provided for various production problems. Demonstration of technologies through Rural Horticultural Work Experience is done every year. Periodically workshops and seminars are conducted for the benefit of industrial stake holders, scholars and scientists.

Category	Upto 2016	Last five year period (2017-2022)
Number of Publications (Journal articles)	724	338
Number of Books	13	20
Number of Book chapters	45	232
Number of Projects Handled	21	26
Grant mobilization ( <b>Rupees in Lakhs</b> )	188.48	57.04
Number of Ph.D.'s produced	43	10
Number of PG's produced	328	180
Number of Seminars/Conferences/Workshops/Webinars Organized	6	25
Number of Awards/recognition received by the Faculty	113	51
Countries visited by the Faculty (Professional Visit)	9	9

#### 6.4.2. Faculty Strength

Presently 35 staff members are available in the Department specialized in different aspects of Horticulture

S. No.	Sanctioned posts	Sanctioned	Filled	Vacant	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1	Professor*	6	6	-	1
2	Associate Professor*	5	5	-	1
3	Assistant Professor*	24	24	-	3
	<b>Total</b>	<b>35</b>	<b>35</b>	<b>-</b>	<b>5</b>

\* Engaged in UG, PG and Ph.D programmes

#### Number of Faculty designated for Fruit Science

Professor\* - 01

Associate Professor\* - 02

Assistant Professor\* - 06

\*Commonly engaged for other courses also

#### Faculty engaged for common courses from the other Departments

S.No	Cadre	Faculty in place (as on August, 2022)	Vacancy position	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1.	Professor	1	-	
2.	Associate Professor	3	-	
3.	Assistant Professor	5	-	

### Credentials of the Faculty

Name & Designation	Total Service (Years)	Field of Interest / Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others
Dr. K. Haripriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
Dr. Arumugam Shakila Professor	30	Fruit Science	46	3	115	4	6
Dr. A. Anburani Professor	28	Vegetable Science	28	3	61	14	10
Dr. P. Karuppaiah, Professor	28	Floriculture and Landscaping	26	7	110	15	8
Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11
Dr.S.Rameshkumar	23	Fruit Science	14	6	52	20	16

Professor							
Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
Dr. S. Kamalakaran Assoc. Professor	19	Vegetable Science	9	-	86	32	25
Dr. R. Sudhagar Associate professor	20	Floriculture and Landscaping	12	1	71	40	22
Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	37	22	9
Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	33	10	23
Dr. C. Muruganandam Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	10	1	41	17	16
Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	6	-	54	18	-
Dr. R. Sendhilynathan, Assistant	20	Floriculture and Landscaping	10	-	39	13	18

Professor							
Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28
Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	37	11	23
Dr. K. Sha Assistant Professor	20	Vegetable Science	9	-	32	-	24
Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	9	-	16	13	11
Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10
Dr. T. Uma Maheswari Assistant Professor	19	Fruit Science	8	1	89	42	25
Dr. D. Dhanasekaran Assistant Professor	19	Floriculture and Landscaping	8	1	47	39	20
Dr. A. R. Lenin Assistant Professor	18	Floriculture and Landscaping	5	-	14	4	6
Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22

Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
Mr.S.Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7
Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	13	12
Dr. G.Samlind Sujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	4	-	31	6	5
Dr. S. Sivasankar Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	20	4

**Publication details (2017-2022)**

S.No.	Title	Authors	Journal	Year
1.	Studies on the effect of media on sucker production of banana cv. Poovan	Esakkimuthu,D. and Arumugam Shakila	The Asian Journal of Horticulture.12 (1):85-88.	2017
2.	Effect of media on growth parameters of banana cv. Poovan	Esakkimuthu,D. and Arumugam Shakila	The Asian Journal of Horticulture. 12 (1):133-135.	2017
3.	Effect of pruning intensities on yield of guava ( <i>Psidium guajava</i> ) cv. Lucknow 49.	Aswathy Suresh and Arumugam Shakila	The Asian Journal of Horticulture. 12(2): 202-205.	2017
4.	Influence of time and intensity of pruning on quality of guava ( <i>Psidium guajava</i> ) cv. Lucknow 49	Aswathy Suresh and Arumugam Shakila	The Asian Journal of Horticulture. 12(2):189-192.	2017
5.	Studies on effect of different seasons on softwood grafting in aonla ( <i>Phyllanthus emblica</i> L.).	Barathkumar,T.R	European J.Biotech. and Biosci. 5(4):83-84.	2017
6.	Study on performance of Different genotypes in Jack fruit ( <i>Artocarpus heterophyllus</i> Lam.)	Muruganandam,C. S.R. Rajamohan and S.Sivasankar	Intl.J. Curr. Res. Life Sci. 6: 607	2017
7.	Evaluation of sapota cultivars for yield characters	Ramadoss, N. and E. Arivazhagan	International J. Agric. Sci. 13(1): 9-13.	2017
8.	Influence of bioregulators on quality of guava ( <i>Psidium guajava</i> ) cv. Arka Mridula and Arka Amulya	Jayalakshmi, C. and Arumugam Shakila	International Journal of Chemical Studies. 6(1):45-47.	2018
9.	. Influence of bioregulators on yield of guava ( <i>Psidium guajava</i> ) cv. Arka Mridula and Arka Amulya	Jayalakshmi, C. and Arumugam Shakila	International Journal of Chemical Studies. 6(5): 718-722.	2018
10.	Effect of edible coating to extend the shelf life of guava var. L-49 stored at room temperature.	Narmadhadevi. A and S. Venkatesan,	Pl. Archives. 18: 303 -307.	2018
11.	Influence of SOP on growth, yield and quality of characters of grapes cv. muscat	P.Suresh and M.Rajkumar	IJRAR. 5(4):141-149.	2018
12.	Effect of Potassium on Quality characters of grapes cv. Muscat.	P.Suresh and M. Rajkumar.	JETIR. 5(9):474-481.	2018
13.	Influence of potassium on growth parameters and yield of grapes cv. Muscat.	M. Rajkumar.	JETI. 5(9):294-302.	2018

14.	Effect of growth regulators and organic substances on rooting of Grapes ( <i>Vitis vinifera</i> L.) Cv. Muscat.	Sarmista Chakraborty and M. Rajkumar, M.	Asian Journal of Science and Technology. 9(8):8418-8421.	2018
15.	Effect of integrated nutrient management on growth characters in sapota.	Sheik RoohiTasleema, Kamalakannan, S., Rajeswari, R. and Sudhagar, R.	Plant Archives. 19 (1):1086-1088.	2019
16.	Influence of plant growth regulators on growth parameters jack fruit ( <i>Artocarpus heterophyllus</i> Lam.)	Muruganandam, C. S.R. Rajamohan and S.Sivasankar	J. of Pharmacognosy and phytochemistry. 2: 20-21	2019
17.	Leaf nutrient content in sapota as influenced by integrated nutrient management.	Kamalakkannan, S., Sheik RoohiTasleema, Rajeswari, R., Sudhagar, S. and Kumar, S.	Journal of Pharmacognosy and Phytochemistry. 8(3):2340-2341.	2019
18.	Effect of plant growth regulators on rooting of hardwood cuttings in guava ( <i>Psidium guajava</i> L.) cv. Lucknow-49.	M.Gayathiri and S.Vijayaraj.	International Journal of Advance and Innovative Research, Volume 6(2): 35-36.	2019
19.	Studies on the influence of potassium on growth, yield and quality of hill banana var. Sirumalai	Sathappan. CT., K. Sivanesh and D. Dhanasekaran	Plant Archives. 19(supplement 2): 1603-1605.	2019
20.	Studies on influence of different seed treatments on dormancy breaking in aonla ( <i>Phyllanthus emblica</i> L.)	Barathkumar, T.R	J.Pharmacognosy and Phytochemistry. 131-133.	2019
21.	Influence of nutrient management through bio-organic manures on fruit yield and its attributes of acid lime ( <i>Citrus aurantifolia</i> Swingle)	Barathkumar, T.R., G.Pradeepkumar, R.Sendhlnathan, R.Sureshkumar, M.Rajkumar, C.Muruganandan and S.Mullaimaran	J. Emerging Tech. and Innov. Res. 6(3):246-252.	2019
22.	Influence of nutrient management through bio-organic manures on bio-chemical attributes of acid lime ( <i>Citrus aurantifolia</i> swingle)	Barathkumar, T.R .G.Pradeepkumar, R.Sendhlnathan, R.Sureshkumar, M.Rajkumar, C.Muruganandan and S.Mullaimaran.	Plant Archives. 19(2): 3763-3766.	2019
23.	. Variability and correlation analysis in sapota ( <i>Manilchara sapota</i> ) under coastal ecosystem	Arivazhagan, E and R. Kandasamy	Plant archives. 19(1): 652-654.	2019

24.	Effect of seed treatments on germination of growth and vigour of papaya ( <i>carica papaya</i> ) cv.red lady.	Thirupathi.M and S.Mullaimaran	International Journal of chemical studies. 8(4):3528-3531.	2020
25.	Effect of nutrient management through bio-organic manures on fruit setting, fruit drop and fruit retention of acid lime ( <i>Citrus aurantifolia</i> Swingle).	BarathkumarT.R, G.Pradeepkumar, R.Sureshkumar and C.Muruganandam.	Plant Archives. 20(1): 1570-1572.	2020
26.	Anti-cancer activity of red banana wine against colon cancer cells (HCT-15).	T. Uma Maheswari, M.Karuppaiya, S.Subhagar, R.Rahul and P. Sivasakthivelan.	Research Journal of Agricultural Sciences.11(2):420-423.	2020
27.	Organoleptic and nutritional quality evaluation of jackfruit bulbs preserved in sugar syrup.	T.Uma Maheswari, , Vidhu Valsan and J.Padmanaban.	Journal of Postharvest Technology.8(2):18-21	2020
28.	Value addition of jackfruit through production of chips.	Uma Maheswari, T. and Vidhu Valsan.	Science Archives.1(2):50-52	2020
29.	Preparation, Processing and Optimization of Guava Ready to Serve (RTS) Health Drink using Fenugreek Seed Flour - A novel formulation.	T. Uma Maheswari M. Karuppaiya, J. Jaya Kowsalya and P. Sivasakthivelan.	Research Journal of Agricultural Sciences.11(3):530-535	2020
30.	Response of plant growth regulators on rooting of hardwood cuttings in guava, ( <i>Psidium guajava</i> L.) cv.Lucknow-49	M.Gayathiri and S. Vijayaraj	Plant archives. 20 (1): 3011-3013	2020
31.	Effect of plant growth regulators on seed germination and seedling vigour in Jack ( <i>Artocarpus heterophyllus</i> ).	S.Madhavan, K.Sha, S.Kumar, M.Gayathiri and S.Elakkuvan.	Alochana chakra journal. 9 (12): 146-152	2020
32.	Integrated use of organic and inorganic fertilizers with bio - inoculants on physiological characteristics of acid lime ( <i>citrus aurantifolia</i> swingle).	BarathkumarT.R., G.Pradeepkumar, R.Sureshkumarand C.Muruganandam	Plant Archives. 20(1):1769-1772.	2020

33.	Influence of plant growth regulators and organic substances on rooting of guava cutting cv.	P. Nandhinidevi, M. Rajkumar, R. Sureshkumar, R. Sendhilmathan and T. Uma Maheswari.	Plant Archives. 20(2): 6.	2020
34.	Enhancement of agronomic traits and yield of rice var. ADT 43 grown in typic ustifluent soil through silicon fertilization.	Arthi, V., M. V. Sriramachandrasekaran, R. Manivannan and Arumugam Shakila.	International Journal of Chemical Studies. 6(5): 718-722.	2021
35.	Effect of IBA on rooting of grapes cuttings ( <i>Vitis vinifera</i> ).	S.Madhavan, S.Sivasankar, S.Elakkuvan and M.Gayathiri.	International journal of botany studies. 6(5): 288-289.	2021
36.	Processing and quality evaluation of banana fig.	T.Uma Maheswari, N.Suganth and J.Padmanaban.	Research Journal of Agricultural Sciences.12(1):294-297	2021
37.	Effect of auxins in rooting of cuttings in pear ( <i>Pyrus communis</i> L.).	S.Sinduja and T.Uma Maheswari.	Research Journal of Agricultural Sciences12(4):1237-1239	2021
38.	Study on development and various physiological properties of banana flour.	T.Uma Maheswari and N.Suganth.	Research Journal of Agricultural Sciences.12(3): 749-752	2021
39.	Effect of auxins on survival percentage of cuttings in pear ( <i>Pyrus communis</i> L.).	S.Sinduja and T.Uma Maheswari and S.Kamalakaran.	Research Journal of Agricultural Sciences.12(5):1756-1759	2021
40.	Bio-regulators and its applications in enhancing flowering and fruit characters of Pomegranate ( <i>Punica granatum</i> L. var Baghwa)	Sam Ruban, J.Ilakiya, T.Dhivya Shree,	Plant archives. 21(2):1742-1746.	2021
41.	Influence of Pre-sowing treatments on Germination, Growth and Vigour of Mango.	V.Gopi and Sam Ruban J,	International Journal of Current 40Microbiology and Applied Sciences. 10(02):2086-2090.	2021
42.	Effect of Foliar Application of Potassium Nitrate and Ethephon on Yield Characters of Papaya ( <i>Carica papaya</i> L.) cv. Red Lady	S. Elakkuvan, G. Samlind Sujin, S. Madhavan and R. S. Sugavanam	Research Journal of Agricultural Sciences. 12(4): 1462-1466.	2021

43.	Influence of plant growth regulators on rooting of hardwood cuttings in guava ( <i>Psidium guajava</i> . L) cv. Lucknow-49	M.Gayathiri, S.Madhavan and S.Vijayaraj	International Journal of emerging technologies and innovative research. 9(1): 162-165.	2022
44.	Studies on development, quality evaluation and storage stability of banana jam ( <i>Musa spp.</i> ).	T.Uma Maheswari and N.Suganth and R.Sendhilmathan	Research Journal of Agricultural Sciences.13(3):902-905.	2022

#### Workshop/Symposium/Webinars organized from 2017-2022

S.No	Title of the Programme	Name of the Faculty	Date
1.	Workshop on Roof Garden	Dr. R. Sudhagar Dr. S. Venkatesan Dr. T. Uma Maheswari	2 <sup>nd</sup> & 3 <sup>rd</sup> February 2018
2.	National workshop on BHUVAN Geo portal for Precision farming	Dr. S. Venkatesan Dr. R. Sudhagar	8 <sup>th</sup> January 2019
3.	National symposium on Horticulture in the Vanguard of climate change and urban environment	Dr. R. Ramesh Kumar Dr. D. Dhanasekaran Dr. CT. Sathappan	7 <sup>th</sup> & 8 <sup>th</sup> February 2019
4.	Webinar on Recent advances in the improvement of cucurbitaceous vegetables and Bhendi	Dr. S. Kamalakannan	11 <sup>th</sup> & 16 <sup>th</sup> July 2020
5	Webinar on Emerging trends in temperate fruit production	Dr. CT. Sathappan	12 <sup>th</sup> & 13 <sup>th</sup> July 2020
6	Webinar on Strategies to combat recent challenges in Floriculture Industry	Dr. S. Rameshkumar Dr. D. Dhanasekaran	18 <sup>th</sup> July 2020
7	Webinar on Landscape tools for smart societies	Dr. S. Rameshkumar Dr. D. Dhanasekaran	19 <sup>th</sup> July 2020
8	Webinar on New normal in floriculture	Dr. S. Rameshkumar	23 <sup>rd</sup> July 2020

		Dr. D. Dhanasekaran	
9	Webinar on Recent advances in strawberry production	Dr. CT. Sathappan Dr. D. Dhanasekaran	24 <sup>th</sup> July 2020
10	Webinar on Research Advances in kiwi production	Dr. CT. Sathappan Dr. D. Dhanasekaran	31 <sup>st</sup> July 2020
11	Webinar on Health foods from fruits and vegetables - An Imminent need	Dr. CT. Sathappan Dr. D. Dhanasekaran	1 <sup>st</sup> August 2020
12	Webinar on Banana - Fruit for Nutritional and livelihood security	Dr. R. Sendhilnathan Dr. S. Sivasankar	2 <sup>nd</sup> August 2020
13	Webinar on Annona - The super fruit of 21 <sup>st</sup> century	Dr. R. Kandasamy Dr. E. Arivazhagan	3 <sup>rd</sup> August 2020
14	Webinar on Nutraceuticals from flower crops	Dr. S. Rameshkumar Dr. N. Dhamodharan	4 <sup>th</sup> August 2020
15	Webinar on Flower seed production - challenges and opportunities	Dr. S. Rameshkumar Dr. D. Dhanasekaran Dr. CT. Sathappan	5 <sup>th</sup> August 2020
16	International workshop on Naunces in Floriculture industry ( <a href="#">Webinar 1.pdf</a> )	Dr. S. Sivasankar	6 <sup>th</sup> September 2021
17	International workshop on Naunces in landscape industry ( <a href="#">Webinar2.pdf</a> )	Dr. S. Rameshkumar Dr. CT. Sathappan Dr. D. Dhanasekaran	13 <sup>th</sup> September 2021
18	International workshop on Naunces in Post harvest horticulture ( <a href="#">Webinar3.pdf</a> )	Dr. CT. Sathappan Dr. J. Padmanaban Dr. D. Dhanasekaran	20 <sup>th</sup> September 2021
19	National work shop - Emerging trends in production and processing of guava ( <a href="#">Webinar 4.pdf</a> )	Dr. S. Kamalakannan Dr. S. Kumar	25 <sup>th</sup> September 2021
20	International workshop - Opportunities and challenges in horticultural technologies	Dr. A. Anburani Dr. C. Muruganandam	30 <sup>th</sup> September 2021

	( <a href="#">Webinar 5.pdf</a> )	Mr. S. Elakkuvan Dr. R. Rajeswari	
21	International Virtual conference – Startups in Horticulture Industry (SUHI - 21) ( <a href="#">Webinar 6.pdf</a> )	Dr.R.Sendhinathan Dr. M. Rajkumar Dr. P. Madhana Kumari	20 <sup>th</sup> October 2021
22	International Virtual Workshop – Scope and opportunities in plantation crops (SOPC - 21) ( <a href="#">Webinar 7.pdf</a> )	Dr.R.Kandasamy Dr. E. Arivazhagan Dr. A. R. Lenin	27 <sup>th</sup> October 2021
23	International Virtual conference – Innovative trends in horticulture production (ITHP - 21) ( <a href="#">Webinar 8.pdf</a> )	Dr.R.Suresh Kumar Dr. T.R. Barathkumar Dr. T. Uma Maheswari	29 <sup>th</sup> October 2021
24	National Virtual workshop – Procurement, processing and product promotion in horticulture crops ( <a href="#">Webinar 9.pdf</a> )	Dr.R.Sudhagar Dr. S. Venkatesan Dr. M. Gayathiri	16 <sup>th</sup> November 2021
25	International Virtual conference – Healthy horticulture for wealthy environment (file:///H:/webinar/Webinar%2010.pdf)	Dr.S.Kamalakannan Dr. S. Kumar Dr. R. Rajeswari	18 <sup>th</sup> November 2021

#### Awards/Recognition's from 2017 to 2022

S. No	Name of the faculty	Awards
1.	Dr. K. Haripriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	1. Subject matter Specialist in selection committee, ICAR-National Research Centre for Banana Trichirapalli. 09.04.2021 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 22.06.2021 3. External expert member, expert committee for restructuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021 4. Board of studies in Agriculture – (GRI), Gandhigram

		Rural Institute, Gandhigram, Dindigul. 2021-2024 5. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019
3	Dr. A. Anburani	1.APSI Honours award by Acadamy in Plant Sciences, India. 2. Best oral presentation award at international symposia, Hyderabad.
4	Dr. S. Anuja	1. Received best paper award, Annamalai University. 2. Received certificate of achievement award.
5	Dr. S. Rameshkumar	1. Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu
6	Dr. J. Samruban	1. 1 <sup>st</sup> poster presentation award in 9 <sup>th</sup> Indian Horticulture congress 2021, Kanpur
7	Dr.R.Kandasamy	1.Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry
8	Dr. CT. Sathappan	1. Fellow of National Gladiolus Trust.
9	Dr. S. Venkatesan	1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Utterpredesh, India. On the occasion of International Conference on GRISAAS- 2019 2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Utterpredesh, India. On the occasion of International Conference on GRISAAS- 2019. 3. Best Horticulturalist Award- Agricultural & Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3 <sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 & 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India. 4. Best oral presentation Award- 3 <sup>rd</sup> National Conference on Promoting & Reinvigorating Agri - Horti, Technological Innovations (24 <sup>th</sup> & 25 <sup>th</sup> December, 2019) held at Danbad Jharkhand, India. 5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment(VOICE) & Pondicherry Institute of Agricultural Sciences( PIAS ) in Association with Murray State University, USA. Supported by Centre for Environment & Agricultural Development(CEAD)- 2020 6. Excellence in Research award-3 <sup>rd</sup> International

		<p>Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>8. Best Horticulturist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</p> <p>10. Best Poster Award- Two days DST PURSE - II Sponsored National conference on “Transforming Agricultural Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 &amp; 22, 2022.</p>
10	Dr. T. R. Barath Kumar	<p>1. PRAGATI, Organizing Committee, Dhanbad, Jharkhand, India. 2017</p> <p>2. TECHSEAR, Organizing Committee, ICAR-IIRR- Rajendranagar, Hyderabad, India. 2017</p> <p>3. Endling conferences society, ICFA-2018, Pune, Maharashtra, India. 2018</p> <p>4. NSPOFED, Organizing Committee, School of agriculture and animal sciences, Gandhigram rural institute-Deemed to be University, Gandhigram, Dindigul, Tamil Nadu, India. 2019.</p> <p>5. Astha foundation (Meerut,U.P) &amp; Organizing Committee GRISAAS, ICAR, NAARM, Rajendranagar, Hyderabad, Telangana, India. 2019.</p> <p>6. ICEACBS, Organizing Committee, VOICE, PIAS,</p>

		<p>Murray State University (USA) and CEAD Puducherry, India. 2020.</p> <p>7. "3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)" Ranchi, Jharkhand. 2022</p> <p>8. "3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)" Ranchi, Jharkhand. 2022</p>
11	Dr. R. Sendhilnathan	<p>1. Awarded Best poster presentation. in 21<sup>st</sup> century (NSPOFED -in 21<sup>st</sup> century. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of Agriculture and animal sciences, Gandhigram Rural Institute, Dindigul.</p> <p>2. Excellence in Research award for outstanding contribution in the field of "Floriculture and landscape gardening" at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019 at ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India.</b></p> <p>3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.</p>
12	Dr. S. Madhavan	<p>1. Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources</p>
13	Dr. P. Madhana Kumari	<p>1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry</p> <p>2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.</p>
14	Dr. T. Uma Maheswari	<p>1. Best oral presentation award- AIASA, 2020</p> <p>2. Best women scientist award- ICEACBS, Puducherry, 2020</p>
15	Dr. D. Dhanasekarn	<p>1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018)</p> <p>2. Best Oral Presentation II<sup>nd</sup> Prize, NABS Conference, Pondicherry (2019)</p> <p>3. Young Scientist Award, National Gladiolus Trust (2020)</p> <p>4. Best Oral Presentation, III<sup>rd</sup> Prize, First NABS (2021)</p> <p>5. Best Oral Presentation II<sup>nd</sup> Prize, 7<sup>th</sup> National Youth</p>

		Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA, TNAU & ICAR, Coimbatore, 24-25 March, 2022
16	Dr. S. Kumar	1. Best oral presentation award- 3 <sup>rd</sup> ICFAI, Jharkhand. 2. Excellence in teaching award- ICEACBS, Puducherry, 2020
17	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
18	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry
19	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy - 2019. Thangavur. 2. Best faculty award in horticulture - CNRTSPA 2019-William research award, Kanyakumari

#### Abroad visit

S. No	Name of the Faculty	Country visited	Purpose of visit
1.	Dr. R. Suresh Kumar	Thailand 2018	International Conference of Food Agriculture and Innovation (ICFAI)
2.	Dr. J. Padmanaban	Switzerland 2019 Italy 2019 France 2019	Academic collaboration with Tamil education Development council (TEDC)

#### Details of Project (2017-2022)

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Type	Funding Agency
1.	2019-2021	Dr. P. Karuppaiah (PI)	Doubling the farmers income through protected cultivation technology - An economic evaluation study in Tamil Nadu.	8.0	Govt.	Indian Council of Social Science Research
2.	2017-2018	Dr. S. Rameshkumar (PI)	As PI : Evaluation of Picoxystrobin 22.52% w/w SC against Powdery	1.50	Non-Govt.	M/S. Bharat Rasayan

			mildew and Downy mildew of Grapes			
3.	2017-2019	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	4.42	Non-Govt.	M/S. T Stanes & Co
4.	2018-2020	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Effect of Active ORG on the nutrient availability, growth, metabolism and yield of <i>Lycopersicon esculentum</i> Mill.	1.36	Non-Govt.	M/S. T Stanes & Co
5.	2021-2022	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Evaluation of bio efficacy of Dr.ROOT on the yield of Onion –PI	1.56	Non-Govt	M/S. T Stanes & Co
6.	2021-2022	Dr. S. Rameshkumar (PI)	As PI : Technology Dissemination Project for “Tree transplantation in Thenkasi to Thirunelvel Highway Extension Site”	1.18	Non-Govt	P & C Projects (P) Ltd.
7.	2018-2019	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Bio – efficacy of Nano nutrients on growth and yield of capsicum	3.88	Co-op. Govt.	IFFCO, Chennai
8.	2020-2023	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Effect of Nano DAP on vegetable cowpea	4.88	Co-op. Govt.	IFFCO, Chennai
9.	2019-20	Dr. M. Rajkumar (PI) Dr. J. Sam Ruban (Co-PI)	Evaluation of bio-efficacy of crop tiger on Banana	2.50	Private	PEPTECH, Bioscience limited, New Delhi
10.	2022 onwards	Dr. R. Kandasamy (PI), Dr. E. Arivazhagan (Co-PI) and Dr. C. Kathirvelu	Efficacy of Bio-stimulants, Zymgold Liquid, Armurox, Equilibrium,	8.82	Non-Govt	Godrej Agrovet Ltd., Mumbai

		(Co-PI)	Terrasorb Complex and Zym gold Plus Granules with respect to yield, yield attributing factors and crop safety on tomato crop			
11	2017-2019	Dr. RM. Kathiresan and Dr. CT. Sathappan	As Associating scientist in "Annamalai rice+fish+poultry farming system for improving nutrition and livelihoods of small farmers in Nepal	120.00	Research and Extension	IKP-KP & USAID
12.	2018-2021	Dr.RM.Kathiresan and CT. Sathappan (Associating Scientist)	As an Associating Scientist In "Agronomic Integration of Technologies for Productivity Management and Optimal Water Use In Wetlands of Cauvery River Delta"	209.00	Govt.	DST- Mission mode
13.	2022-24	Dr. C. Kathirvelu (Principal investigator) Dr. S. Venkatesan and Dr. K. Suseendran (Co Principal investigator)	Bio- efficacy and Phytotoxicity and Compatibility of PIPL 100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crop on various growth parameters	5.52	Non Govt	M/S Parijat Industries Limited, New Delhi.
14.	2018-2020	Dr.P.Sudhagar(PI) Dr.R.Sureshkumar(Co-PI)	Efficacy of LAATU premium(Gibberellin acid 0.001%) as plant growth	3.00	Pvt.	Sumitomo Chemicals Pvt.Ltd, New Delhi

			regulator and yield of Tomato(Co-PI)			
15.	01.07.2018 to 30.06.2020	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy and Phytotoxicity of homobrassinolide 0.04% EC in Paddy, Groundnut and Tomato	9.00	Non Govt.	m/s Godrej Agrovet Ltd, Mumbai.
16.	July 2018 to December 2019	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio-efficacy of new herbicide clethodim 12% EC for controlling grassy weeds in cotton, onion and soyabean and its phytotoxicity effect on succeeding crops	7.50	Non Govt.	Deccan fine (Chemicals) India Pvt. Ltd. Hyderabad, Telengana
17.	December 2018 to December 2021	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy toxicity evaluation of GlutოსinateAmmonium 13.5% against weed flora in grapes and its effect on succeeding crops .	13.33	Non Govt.	M/S UPL.Pvt.ltd, Mumbai.
18.	January 2020 to June 2022	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio - efficacy and phytotoxicity of Flumioxazin 50 % SC against major weeds in tea and non- cropped area and its effect on succeeding crops for two seasons	5.46	Non Govt.	M/S. Sumitomo chemical India Ltd. Mumbai NON GOVT
19.	December 2019 to May 2020	Dr.M.Rajkumar - PI Dr. J. Samruban (Co-PI)	Evaluation of Bio - efficacy of growth enhance formulations and their effect on Onion, Rice and Chilli	2.27	Non Govt.	Agri solutions Pvt.Ltd. Nashik

20.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of studies on Bio-Efficacy of evaluation of the bio-stimulant- Gaxy on cotton and grape and opteine on soybean and ground nut and pilatus on tomato.	10.50	Non Govt.	M/S UPL.Pvt.Ltd. Mumbai.
21.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy of evaluation of Bio-Stimulant macarena on soybean, tomato, cotton and Brique on chilli and tomato.	10.50	Non Govt.	M/S.UPL.Pvt, Mumbai.
22.	February 2022 to February 2024	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy and phytotoxicity evaluation of SIAPTION 101 on growth, yield and quality of grapes for 2 season.	2.275	Non Govt.	M/s Jivagro Ltd.
23.	2018 -2020	Prof.Rm.Kathiresan (PI) Dr.J.Padmanaban (Assoc. staff)	Agronomic Integration of Technologies for productivity management & Optimal Water Use in Wetland of Cauvery 35River Delta	67.00	Govt.	DST, New Delhi
24.	2021-2022	Dr.J.Padmanaban (PI) Dr.S.Manimaran (Co-PI)	Evaluation of Bio-stimulants: Top-up Gold (Granules) / Enhancer (Liquid) in Paddy	3.75	Non Govt.	Plantgene Biological Pvt. Ltd., Trichy
25.	2021-2024	Dr.S,Kanagarajan (PI) Dr.J.Padmanaban(Co-PI)	Testing of new insecticide: Evicent 45 WG against Thrips and capsule	10.00	Non Govt.	Syngenta India Ltd., CBE

			borer in Cardamom			
26.	October 2021 to September 2024	Dr. T. Uma Maheswari (Co-PI) Dr.R.Kanagarajan (PI)	Evaluation project: Testing of new insecticide SPID + ACET 54 WG against Tea pests	5.00	Non Govt.	M/S SYNGENTA India Ltd., Coimbatore
27.	February 2022 to July 2024	Dr. T. Uma Maheswari-PI Dr.R.Kanagarajan (Co-PI)	Effective utilization of agricultural green waste in biosolarization as an innovative approach for ecofriendly cultivation of tomato ( <i>Solanumlycopersicum l</i> )	10.13	Govt.	RUSA 2.0-R&I
28.	2022-24	Dr. S.Babu (PI) Dr. D.Dhanasekaran (Co-PI)	Bioefficacy trail of Glyphosate 41 % SL IPA Salt as a post emergence herbicide against grassy weeds, broad leaf weeds and sedges existing in the trail lot of tomato and mango orchard	9.60	Trail	Crystal Crop Protection Ltd., New Delhi
29.	2022-24	Dr. C.Kathirvelu (PI) Dr. D.Dhanasekaran (Co-PI)	Climate Resilience on Butterfly fauna of coastal areas of Tamilnadu and establishing Butterfly garden at Annamalai university Gardens	5.06	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
30.	2022-24	Dr. D.Dhanasekaran (PI) Dr. CT.Sathappan, Dr. M.Govindarajan and Dr. G.Senthilkumar	Phyto-remediationof Indoor pollution through ornamental plants with various horticultural modules for improving health and urban environment.	10.13	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
<b>Total Amount</b>				<b>57.04</b>		

	(Rupees in lakes)		
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### 6.4.3. Technical and Supporting Staff

The following technical and supporting staff members in the Department are helping in academic, Research and administrative activities.

Sl.No.	Sanctioned posts	Staff in place	Responsibility
1	Secretarial staff (ASO-1, Helper-2)	3	Assisting administrative work Maintenance of office files and official records
2	Technical staff (Orchard manager-1, DGS-1, and DFS-2)	4	Assisting in orchard operations, field trials, farm record maintenance, sale proceeds, supervision of labourers, execution of purchase and settlement of bills and recording of trial observations. DTP works, data processing and documentation
3	Farm workers /Gardeners	22	Layout of field trials and farm operations.

### 6.4.4. Classrooms and Laboratories

#### I. PARTICULARS OF INSTRUCTIONAL UNITS IN THE DEPARTMENT

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)	SEATING CAPACITY
1.	HOD Room	320 sq.ft	1
2.	Office Room	240 sq.ft	4
3.	PG Class Room 1	320 sq.ft	15
4.	PG Class Room 2	640 sq.ft	40
5.	PG Class Room 3	720 sq.ft	40
6.	PG Class Room 4	420 sq.ft	15
7.	Ph.D Class Room 1	640 sq.ft	15

8.	Ph.D Class Room 2	320 sq.ft	15
9.	Laboratory (PG/Ph.D)	640 sq.ft	15
10.	Staff Room 1	320 sq.ft	4
11.	Staff Room 2	400 sq.ft	5
12.	Staff Room 3	640 sq.ft	12
13.	Staff Room 4	100 sq.ft	5
14.	Staff Room 5	120 sq.ft	5
15.	Staff Room 6	100 sq.ft	1
16.	Staff Room 7	320 sq.ft	1
17.	Staff Room 8	320 sq.ft	1
18.	Postharvest lab (UG) (Distillation unit, Dehydrator, Pulper, Sealer and Mixer machine)	1333 sq.ft	40

**List of equipments available**

<b>S.No</b>	<b>Name of the Equipment</b>	<b>Equipment available in the department</b>
1.	Weighing balance (0.001)	1
2.	Weighing balance (0.01)	3
3.	Weighing balance (200 g)	2
4.	Weighing balance 60 kg (30 kg)	1

5.	Distillation unit	2
6.	pH meter	4
7.	EC meter	2
8.	Hand refractometer	5
9.	Digital vernier calliper	2
10.	Deep freezer vertical (-20°C, 275 l)	1
11.	Thermocycler unit	1
12.	Gel documentation unit	1
13.	Stereo zoom microscope	1
14.	Compound microscope	4
15.	Hot air oven	1
16.	Dehydrator	2
17.	Magnetic stirrer (5 l)	3
18.	Micro wave oven (25 l)	2
19.	Refrigerator (320 l)	3
20.	Water bath with shaker (20 l)	1
21.	UV spectrophotometer	1
22.	Refrigerated centrifuge	1
23.	Vertical gel unit (dual unit max)	1
24.	Horizontal gel unit (medium)	1
25.	Power pack (small)	1
26.	Micropipette (10 $\mu$ -1, 100 $\mu$ -1, 200 $\mu$ -1, 1000 $\mu$ -1)	1
27.	Laminar air flow chamber	1
28.	Digital thermometer and hygrometer	5
29.	Autoclave (vertical) 250 l	1
30.	Nitrogen distillation unit	1

31.	Air conditioner (2 tonnes)	4
32.	Online UPS (10 volts)	1
33.	Digital camera (14 mph)	1
34.	Vortex	1
35.	Hot plate	2
36.	Soxhlet Apparatus	2

## II. PARTICULARS OF INSTRUCTIONAL UNITS IN ORCHARD

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Orchard	5.66 hectare
2	Shade house	1650 sq.ft
3	Nursery	3634 sq.ft
4	UG practical class Room-III	1196 sq.ft
5	UG practical class Room-IV	1196 sq.ft
6	Class Room 1 (UG)	560 sq.ft
7	Field lab (PG/Ph.D)	380 sq.ft
8	Display / UG class room-2	380 sq.ft
9	Farm manager office	200 sq.ft
10	Tractor Shed	380 sq.ft
11	Store room	936 sq.ft

12	Implement shed	216 sq.ft
13	Threshing yard	900 sq.ft
14	Seed processing and storage unit	125 sq.ft
15	Farm fencing	1.05 km

### III. PARTICULARS OF INSTRUCTIONAL UNITS IN FLORICULTURE AND MEDICINAL PLANTS AREA

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Floriculture and medicinal plants Unit	1.41 hectare
2	Vermicompost shed	450 sq.ft
3	NVP house 1	418 sq.ft
4	NVP house 2	418 sq.ft
5	NVP house 3	1071 sq.ft
6	Shade house	150 sq.ft
7	Mist chamber	216 sq.ft
8	Poly house	2640 sq.ft

#### 6.4.5. Conduct of Practical and Hands-on-Training

Hands- on -training is given to students during classes:

- Quality tests with reference to treatments adopted are experimented.
- Treatment effects on storage of economic produce are designed.
- Latest processing methods are tested for nutritional enrichment.
- Exposed to application of strategies for combating biotic and abiotic stress at large scale production farms.
- Visits are planned to private, government and educational institutes to expose the latest technologies adopted in fruit production.

- Bio-technological tools in mass multiplication and stress alleviation are practically illustrated in large scale adoptions.

Field visits are arranged for the students to

- Pulping industries
- Processing industries
- Central industries
- Progressive farmer field
- Regional research stations

#### 6.4.6. Supervision of students in Ph.D. Programme

Each Ph.D. scholar shall have a Research Advisory Committee (RAC) to guide the scholar in carrying out his/her programme.

RAC consists of Professors not fewer than four with the Supervisor as Chairperson. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director DARE for information.

RAC will discuss, advice and recommend on all matters connected with the scholar's research from admission till the submission of the thesis. Approve the topic of research and the synopsis. Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D. If necessary, recommend and approve change of title of dissertation/ thesis and change of Research Supervisor. Conduct and supervise the presentation by the candidate of the final draft of his/her proposed thesis for approval before the submission of synopsis of the thesis to the University and to give a certificate to this effect to be submitted along with the synopsis. The Research Advisory Committee will meet every semester. To scrutinize the research proposal / progress report submitted by the research scholar. To assess the conduct of experiments/field work, peruse laboratory notebooks, data recording, analysis, and publication. To review and endorse the annual progress report of the research scholar. To approve the synopsis of the thesis. The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department.

#### Students Teacher Ratio

S.No	Number of recognized Teacher for Ph.D. guidance	Academic year	Intake of students	Students Teacher Ratio
1.	33	2017-18	0	1:0
2.	33	2018-19	0	1:0
3.	33	2019-20	0	1:0

4.	33	2020-21	2	1:16.5
5.	33	2021-22	2	1:16.5

#### 6.4.7. Feedback of stakeholders

Constant feedback is obtained from the stakeholders as given below.

**Students:** The feedback about the curriculum and teaching methodology are obtained from the students every semester after completing the course. These comments were reviewed and considered while revising the syllabus. Department uses the feedback for enhancing the audio-visual aids, advanced laboratory equipment's and e- journals. Apart from this the mentor-mentee system enables the teachers to obtain constant feedback from students.

**Employers, those who come for campus placements:** Based on the feedback from employers, skill development and personality development programmes are conducted in addition to regular curriculum content.

**Farmers:** Feedback is regularly obtained during Farmers Day, field visits, and field trials.

**Industries:** Quality sustenance and quality enhancement measures in curriculum development process is done by restructuring the course contents based on requirement prescribed by the industry people during our industrial visits.

**Entrepreneurs:** Based on the feedback from entrepreneurs, the contents for skill development and personality development programmes are decided and implemented.

**Govt. officials:** Feedback obtained from Government officials are included during the revision of courses for PG research programmes.

#### Action taken:

- In the year 2019-20 the students expressed their differently in clearing MOOC- Swayam, NPTEL. Accordingly resolution was passed to have Topical Research course instead of MOOC. Which was passed through Faculty board.
- Number of field visits were increased learning production technologies.
- Vale added courses are offered to students.
- Laboratory timing are extended even during holidays for the access of the students.
- Coaching for TNPSC (ADH) were conducted.

#### 6.4.8. Student intake and attrition in the programme for last five years Ph.D.(Hort.) Fruit Science

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
-	-	-	2	2	--	--	--	50 %	50 %

#### Salient research achievements of the Department

The Department of Horticulture has contributed to the fruit science sector by researching upon the need based objectives in the coastal area.

- Propagation of Guava through simple layering as well as air-layering has been successfully conducted and the layers are produced and distributed to the nearby farming community.
- Propagation of West Indian Cherry through air-layering is done and dispersed to the nearby peoples.
- Sapota grafts through approach grafting is produced and distributed.
- The research focuses on fruit crops like Papaya, Pomegranate and Banana with respect to nutrient management studies and spraying of plant booster do better results in the above said Tropical fruit crops.
- New concepts with respective propagation of guava cuttings through PGR's and Lime cuttings were standardized and multiplied.
- High Density Planting on Guava trails was undertaken and the hike in yield was documented and training given to nearby farmers.
- Product development studies carried out in Papaya, Jack and Edible coating work in Guava emphasizes the research carried out in this field. Introduction on off-season bearing of Mango using certain chemicals/PGR's made remarkable achievements.

#### **6.4.9. ICT Application in Curricula Delivery**

A smart class room facility, six computers with internet facility and two LCD projectors and smart TV help in making the teaching enabled with ICT in the Department. Video facilities available in Department help us to cast videos on precision farming practices pertaining to floriculture, nursery and post harvest value addition. Software's on Archi CAD (AUTO CAD/smart draw) and 3 D Land cad is used to demonstrate to the students for the Ornamental and Landscape Gardening course. PPTs are designed and updated regularly to teach the syllabus content in a way to make the students understand better. Mobile Apps for Landscape designing, sound pollution monitoring and Google class room are used and students are exposed to these Apps to keep them aware of the current trends. Site analysis and measuring tools available on Google Earth is exposed to the students for learning landscaping in a smart way.



99MF+RQB, Anjanakali Nagar, Thidalveli, Tamil Nadu 620002, India

Thidalveli  
Tamil Nadu  
India

27°C  
81°F

2022-08-05 (Fri) 10:46 (AM)

PALA-ROOTSTOCK



9PPF+HGW, Annamalainagar, Tamil Nadu, 688002, India

Annamalainagar  
Tamil Nadu  
India



27°C

81°F

2022-08-05 (Fri) 10:59 (AM)

OFF SEASON BEARER



Thidalveli  
Tamil Nadu  
India

2022-08-08(Mon) 07:52(AM)

27°C  
81°F

ORCHARD

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented college-Wise.

6.4.11 Since the accreditation of Programmes is related to the all India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12 Certificate (Applicable when SSR is submitted for Programme)

I, the Dean, Faculty of Agriculture, Annamalai University hereby certify that the information contained in the section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



**DEAN**  
**FACULTY OF AGRICULTURE**  
**ANNAMALAI UNIVERSITY**

Signature of Dean of the College with Date & seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
Ph.D. Vegetable Science**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)



**FACULTY OF AGRICULTURE**

**Department of Horticulture**

**SELF STUDY REPORT OF**

**PH. D. (HORT.) VEGETABLE SCIENCE**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## Self-Study Report

### 6.4. Name of the Programme: Ph. D. (Hort.) Vegetable Science

Offered by: Department of Horticulture

#### 6.4.1. Brief History

The Division of Horticulture came into existence in 1958 with an objective of offering horticultural subjects to B.Sc. (Ag.) graduates. In the early stages, the Division was attached with the Department of Agricultural Botany. Under the leadership of renowned Horticulturist of International repute, Dr. S. Krishnamoorthy, a pioneering post graduate course in Horticulture was introduced for the first time in South India in 1958-59. With further expansion, the erstwhile Division of Horticulture functioning from 1958-59 onwards was upgraded as a Department in 1991 with the revival of a full fledged doctoral programme - Ph. D. in Horticulture and later on Ph.D. in Horticulture with course work from 2013 onwards. This integrated Ph.D. in Horticulture programme was continued upto 2021. However, during last board of studies held on 14<sup>th</sup> May 2022 the existing Ph.D in Horticulture was bifurcated into four specialized degree programme *viz.*, Fruit Science, Vegetable Science, Floriculture and Landscaping and Plantation, Spices, Medicinal and Aromatic Crops based on BSMA recommendation of 5<sup>th</sup> Deans committee of ICAR.

Historical Itinerary	Year/Period
Division of Horticulture	1958
First PG Programme in Horticulture	1958-59
Upgraded as a Department	1991
Post graduate Programme M.Sc. (Ag.) in Horticulture	1991
M.Sc. (Hort.) in Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2012 -2013
Ph. D. in Horticulture	1991
Ph. D. in Horticulture with course work	2013
Ph. D. Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2022 - 2023 onwards

The Ph.D. (Hort.) Vegetable Science has 100 credits in 6 semesters which includes 12 credits for major courses, 06 credits for minor courses, 05 credits for supporting courses, 02 credits for seminar and 75 credits for Ph.D. thesis research. In addition to 100 credits, 02 contact hours for non-credit compulsory courses and 02 contact hours for MOOC have been included to improve the research acumen and employability of the students. Revision of the curricula was carried out in the academic year 2022-2023 in concurrence with the latest recommendations from BSMA and 5<sup>th</sup> Dean's committee of ICAR.

### Semester wise Distribution of Credit

Semester	Major Course	Minor Course	Supporting Course	Seminar	Research
I	6	4	2	1	2
II	6	2	3	1	10
III	-	-	-	-	15
IV	-	-	-	-	16
V	-	-	-	-	16
VI	-	-	-	-	16
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>

### Distribution of Courses

Course code	Course Title	Credit hour (Theory + Practical)
<b>Major Courses</b>		12
VSC 601*	Recent trends in vegetable production	3+0
VSC 602*	Advances in breeding of vegetable crops	3+0
VSC 603	Abiotic stress management in vegetable crops	2+1
VSC 604	Seed certification, processing and storage of vegetable crops	2+1
VSC 605	Breeding for special traits in vegetable crops.	2+0
<b>Minor Course</b>		6
VSC 606	Bio diversity and conservation of vegetable crops	2+1
VSC 607	Biotechnological approaches in vegetable crops	2+1
VSC 608	Advanced laboratory techniques for vegetable crops.	1+2
<b>Supporting Courses</b>		5
COM 601	Advances in Computer Applications (1+1)	2
STA 601	Advances in Designs of Experiments (2+1)	3
<b>Seminar</b>		

	Doctoral Seminar - I (0+1)	1
	Doctoral Seminar - II (0+1)	1
	<b>Research</b>	
	Doctoral Research (0+75)	75
	<b>Non-credit courses</b>	
	<b>MOOC</b> (2+0)	-
	Research and Public Ethics (2+0)	-

\*Non credit compulsory course.

### Vision

- Impart quality education in Vegetable Science.
- Increasing the Gross Enrolment Ratio (GER) of Vegetable Science programmes.

### Strategic plan to achieve Vision and Goal

Goal	Programme Objectives	Implementation Plan	Performance Metrics /Timeline
Quality education	To prepare students to generate knowledge on management, production and strategies leading to the development of research philosophies, concepts and methodologies.	Classes are handled by experienced Faculty through class room teaching and practical demonstration.	Periodical class tests, practical assignments, quiz and end term exams are conducted to evaluate the performance of students.
Employability and National standards	To inculcate ability in students to critically analyze and comprehend the knowledge gained from a range of scientific data to approach cultivation problems and reach appropriate solutions in the area of their specialization.	The students are guided to collect literature, identify gaps and propose research problem and conduct research on it.  Timely revision of curriculum according to BSMA and ICAR Deans committee.	The advisory committee supervises and evaluates the students during end of every semester.
Professional	To enhance capability	The curriculum	The student is

ethics	of students to adhere to professional ethics and responsibilities related to horticultural practices.	includes field / lab research activities making the students aware of professional norms and resource usage in cautious manner.	continuously monitored by periodical review of work done in field, use of agricultural inputs, recording timely observations and verification of data by advisory committee.
Technology transfer	To facilitate exposure of students to function effectively as an individual and as a member or leader in diverse teams or interdisciplinary environment.	The interdisciplinary research approach is encouraged in making the students work in a diverse environment.	The activity of students in related research labs is evaluated by the major supervisor from time to time.
Lifelong learning	To engage the students in life-long learning and professional development through self- directed studies.	The programme includes compulsory courses along with research, seminars and publication of research work.	The continuous evaluation of courses is done through theory and practical exams while research is evaluated based on research progress in each semester and thesis submission at the end of the degree.

### Accomplishments

The Department of Horticulture is a pioneer institute which offered post graduate Horticultural programme in South India during 1958-59. The Horticulturists of international repute like Dr. S. Krishnamoorthy, Prof. P. Kalyanasundaram and Dr. L. R. Rajasekaran have fuelled the growth of this Department in its early stage and formed the basis of its present state of existence. The Department has been imparting quality education by using updated technologies in the field of education with audio visual aids, method demonstrations and participatory approach and interactive practical experiments. **The Department was awarded with DST - FIST funds for infrastructure development. The syllabus content are updated as per suggestions by stake holders, lead organisations in agriculture and scientific experts. The students are given practical exposure in horticulture industries by hands- on - training and by study tours and industrial trainings.** The students are given

counselling by the teachers for their academic improvement and future planning. Special coaching for ICAR JRF, SRF and NET examinations are provided.

The Department of Horticulture has contributed to the horticulture sector by researching upon the need based objectives in the coastal area. The location specific research outcomes are disseminated to the farmers in the coastal Tamil Nadu to propel horticultural crops in the coastal farming system. The department distributes certified seeds of “Annamalai brinjal” to the farmers. **The standardized package of practices developed for rice-fallow vegetable production, common tropical vegetables and introduction of nutritionally rich/economically feasible less known crops has been carried out. For the industrial sector stake holders, the Department is providing its research expertise by conducting product evaluation research.**

The Department is training the farmers in new technologies that are upcoming in the field of horticulture and creating awareness among the farmers about the new crops, varieties and techniques. Diagnostic services to the farmers are provided for various production problems. Demonstration of technologies through Rural Horticultural Work Experience is done every year. Periodically workshops and seminars are conducted for the benefit of industrial stake holders, scholars and scientists.

Category	Upto 2016	Last five year period (2017-2022)
Number of Publications (Journal articles)	724	338
Number of Books	13	20
Number of Book chapters	45	232
Number of Projects Handled	21	26
Grant mobilization (Rs. in lakh)	188.48	57.04
Number of Ph.D.s produced	43	10 (Veg Science)
Number of PGs produced	328	180
Number of Seminars/Conferences/Workshops/Webinars Organized	6	25
Number of Awards/recognition received by the Faculty	113	51
Countries visited by the Faculty (Professional Visit)	9	9

#### 6.4.2. Faculty Strength

Presently 35 staff members are available in the Department specialized in different aspects of Horticulture

S. No.	Sanctioned posts	Sanctioned	Filled	Vacant	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1	Professor*	6	6	-	1
2	Associate Professor*	5	5	-	1

3	Assistant Professor*	24	24	-	3
	<b>Total</b>	<b>35</b>	<b>35</b>	<b>-</b>	<b>5</b>

\* Engaged in UG, PG and Ph.D programmes

### Number of Faculty designated for Vegetable Science

Professor\* - 01

Associate Professor\* - 02

Assistant Professor\* - 06

\*Commonly engaged for other courses also

### Faculty engaged for common courses from the other Departments

S. No	Cadre	Faculty in place (as on August, 2022)	Vacancy position	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1.	Professor	1	-	-
2.	Associate Professor	3	-	-
3.	Assistant Professor	5	-	-

### Credentials of the Faculty

Name & Designation	Total Service (Years)	Field of Interest / Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others
Dr. K. Haripriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
Dr. Arumugam Shakila Professor	30	Fruit Science	46	3	115	4	6

Dr. A. Anburani Professor	28	Vegetable Science	28	3	61	14	10
Dr. P. Karuppaiah, Professor	28	Floriculture and Landscaping	26	7	110	15	8
Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11
Dr.S.Rameshkumar Professor	23	Fruit Science	14	6	52	20	16
Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
Dr. S. Kamalakannan Assoc. Professor	19	Vegetable Science	9	-	86	32	25
Dr. R. Sudhagar Associate professor	20	Floriculture and Landscaping	12	1	71	40	22
Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	37	22	9
Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	33	10	23

Dr. C. Muruganandam Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	10	1	41	17	16
Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	6	-	54	18	-
Dr. R. Sendhilynathan, Assistant Professor	20	Floriculture and Landscaping	10	-	39	13	18
Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28
Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	37	11	23
Dr. K. Sha Assistant Professor	20	Vegetable Science	9	-	32	-	24
Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	9	-	16	13	11
Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10

Dr. T. Uma Maheswari Assistant Professor	19	Fruit Science	8	1	89	42	25
Dr. D. Dhanasekaran Assistant Professor	19	Floriculture and Landscaping	8	1	47	39	20
Dr. A. R. Lenin Assistant Professor	18	Floriculture and Landscaping	5	-	14	4	6
Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22
Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
Mr.S.Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7
Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	13	12
Dr. G.Samlind Sujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	4	-	31	6	5
Dr. S. Sivasankar Assistant Professor	13	Plantation, Spices, Medicinal and	5	-	26	20	4

		Aromatic crops					
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### Publication Details (2017-2022)

S.No.	Title	Authors	Journal	Year
1.	Genetic divergence, heritability and yield traits of different Ash gourd accessions	Kichenaradjou, M. and Arumugam Shakila.	International Journal of Agricultural Sciences and Research. 7(6): 453-458.	2017
2.	Effect of combined application of inorganic and water soluble fertilizers on growth parameters of chilli hybrid ( <i>Capsicum annuum</i> ).	K. Muthumanickam and A. Anburani	The Asian Journal of Horticulture. 12(1)117-12.	2017
3.	Yield and yield parameters as influence by various sources of water soluble fertilizers on chilli hybrid ( <i>Capsicum annuum</i> ).	K. Muthumanickam and A. Anburani	The Asian journal of Horticulture. 12(1)51-54.	2017
4.	Effect of different planting density on growth parameters of moringa. ( <i>Moringa oleifera</i> )	K. Ramkumar and S. Anuja	Asian.J.Hort. 12 (2): 198-201.	2017
5.	Effect of different planting density on leaf yield and quality of moringa. ( <i>Moringa oleifera</i> )	K. Ramkumar and S.Anuja	Asian.J.Hort. 12 (2): 241-243.	2017
6.	Effect of various drying methods on the quality of Moringa leaf powder	S. Anuja and K. Ramkumar	Asian.J.Hort. 12 (2): 241-243.	2017
7.	Studies on combining ability in okra ( <i>Abelmoschus esculentus</i> (L.) (Moench)	Waikhom Jupiter, S and R. Kandasamy	Asian J. Hort. 12 (1): 41-46.	2017
8.	Variability studies in cucumber ( <i>Cucumis sativus</i> L.).	R. Kandasamy	Asian J. Hort. 12 (1): 84-87.	2017
9.	Effect of bio-stimulants on the growth and yield of baby corn ( <i>Zea mays</i> L.).	Laishram Romeo Singh and S.Venkatesan,	Prog. Res. 12(Spl.IV): 2766 - 2769.	2017
10.	Response of an ideotype of cluster onion ( <i>Allium cepa</i> L. <i>aggregatum</i> ) to farm and animal wastes.	Anbarasi, D., K. HariPriya, C.T. Sathappan, D. Stella.	Journal of Phytology. 10:37-39.	2018

11.	Studies on genetic variability and genetic advance for yield parameters in watermelon ( <i>Citrullus lanatus</i> Thumb.).	A.Anburani	The Asian journal of Horticulture. 13(2) 39- 44.	2018
12.	Effect of water soluble fertilizers on yield and quality parameters in brinjal hybrids ( <i>Solanum melongena</i> L.)	A.Anburani	The Asian journal of Horticulture. 13(2)55-58.	2018
13.	Influence Effect of water soluble fertilizers on growth and yield parameters in brinjal hybrid ( <i>Solanum melongena</i> l.)	A.Anburani	The Journal of Phytology. (10) 33-36	2018
14.	Effect of different levels of water soluble fertilizers on quality parameters and nutrient uptake in brinjal hybrids.	K. Muthumanickam and A. Anburani.	The Journal of Phytology. (10) 49-51	2018
15.	Organic nutrient management technique for enhancing growth and physiological parameters in radish ( <i>Raphanus Sativus</i> L).	Anu P.Mani and A. Anburani	The Journal of Phytology. (10) 40-42	2018
16.	Effect of spacing and pruning on leaf yield and quality of moringa. ( <i>Moringa oleifera</i> )	P. Arivanandham and S. Anuja	Adv. Plant Sci. 31 (2): 81-84.	2018
17.	Effect of spacing and pruning on growth parameters of moringa. ( <i>Moringa oleifera</i> )	P. Arivanandham and S. Anuja	Adv. Plant Sci. 31 (2): 67-71.	2018
18.	Effect of various drying methods on the quality of Moringa leaf powder ( <i>Moringa oleifera</i> )	S. Anuja and P. Arivanandham	Adv. Plant Sci. 31 (2): 93-96.	2018
19.	Effect of micro nutrients on growth flowering and yield of cucumber ( <i>Cucumis sativus</i> L.) Var. Long green under different seasons	R.Sureshkumar and Queen Flower,M.J.,	JETIR. 5(10): 407-412	2018
20.	Influence of plant growth regulators on growth characters in brinjal ( <i>Solanum melongena</i> L.) cv. Annamalai	Arivazhagan E., A. Kavitha and R. Kandasamy	The Asian J. Hort. 13 (2): 59-63.	2018
21.	Influence of plant growth regulators on yield and quality characters of brinjal ( <i>Solanum melongena</i> L.) cv. Annamalai	Arivazhagan E., A. Kavitha and R. Kandasamy. 13 (2): 45-49.	The Asian J. Hort.	2018
22.	Evaluation of physio-morphological characters of snake gourd ( <i>Trichosanthesanguina</i> L.) genotypes.	M.Rajkumar.	IJRAR. 5(4): 796-807.	2018
23.	Effect of organic fertigation on growth parameters of bell pepper ( <i>Capsicum annuum</i> var. grossum sendt.)	R. Devanathan, K. Sekar, P. Madhanakumari and Y. Hariprasad	Plant Archives. 18(1): 749-752.	2018
24.	Correlation and path analysis in Okra ( <i>Abelmoschus esculentus</i> L. Moench).	J. L. joshi, AjishMuraleedhara n and Y.	Journal of Emerging Technologies	2018

		Anbuselvam	and Innovative Research. 5(8):1193-1197.	
25.	Character inter-relationship and path coefficient studies in Tomato ( <i>Solanum lycopersicum</i> L.)	J. L. joshi, AjishMuraleedharan, Y. Anbuselvam and K. Saravanan	Journal of Emerging Technologies and Innovative Research. 5(11):267-271.	2018
26.	Soil solarization for growth attributes and weed control in tomato nursery.	S.Mullaimaran and K.Haripriya	International Journal of Advance Research In Engineering Science And Technology. 23(10):25-30.	2018
27.	Screening of Dolichos bean <i>Lablab purpureus</i> L. (sweet) genotypes for growth and yield in coastal regions of Tamil Nadu	R.Arulananth and S.Ramesh Kumar	Plant Archives. 18(2):1258-1262.	2018
28.	Effect of Integrated nutrient management on growth and yield of dolichos bean ( <i>Lablab purpureus</i> )	R.Arulananth and S.Ramesh Kumar	Annals of Plant and Soil Research. 20(3):302-306.	2018
29.	Effect of different levels of water soluble fertilizers on yield and quality parameters in brinjal hybrids ( <i>Solanum melongena</i> L.)	A. Anburani, B. Babitha and K. Muthumanickam	Plant Archives. 19 (2) 2561-2564.	2019
30.	Genetic variability, heritability and genetic advance for yield and yield components in watermelon ( <i>Citrullus lanatus</i> THUMB.).	A. Anburani, P. Kannan and K. Muthumanickam	World News of Natural Sciences. 25 (22-30).	2019
31.	Effect of soil solarization on weed control index and efficiency of Amaranthus species	K.Muthumanickam and A.Anburani	Annals of plant and soil research. 21(3):265-269.	2019
32.	Effect of off season soil management practices on growth and yield of Amaranthus species.	A. Anburani and K.Muthumanickam	Annals of plant and soil research. 21(3):280-284.	2019
33.	Soil solarization an effective management practice on weed management and yield of palak ( <i>Beta vulgaris</i> var. bengalensis).	K.Muthumanickam and A.Anburani	World Scientific News. 129: 211-221.	2019
34.	Effect of organic nutrients on growth parameters of Moringa ( <i>Moringa oleifera</i> lam.) for leaf production	N. Pallavi and S.Anuja	Plant Archives. 31 (2): 93-96.	2019

35.	Organic nutrient management on the leaf production and quality parameters of Moringa ( <i>Moringa oleifera</i> Lam.) cv.PKM-1)	N. Pallavi and S.Anuja	Plant Archives. 19(22):2439-2442.	2019
36.	Effect of organic nutrients on leaf yield and quality of Moringa ( <i>Moringa oleifera</i> Lam)	N. Pallavi and S.Anuja	Res. Crops. 20(3):563-568.	2019
37.	Correlation and path coefficient analysis in bottle gourd ( <i>Lagenaria siceraria</i> (Mol.) Standl.)	Kandasamy, R., E. Arivazhagan and S. Sharmil Bharathi	J. Pharmacognosy and Phytochemistry. 8(3): 3990-3993.	2019
38.	Evaluation of growth and yield characters in bottle gourd ( <i>Lagenaria siceraria</i> (Mol.) Standl.)	Kandasamy, R., E. Arivazhagan and S. Sharmil Bharathi	J. Pharmacognosy and Phytochemistry. 8(3): 4653-4655.	2019
39.	Genetic divergences among landraces of pumpkin ( <i>Cucurbita moschata</i> Duch ex. Poir) from Tamil Nadu	Kandasamy, R., E. Arivazhagan and P. Anusa	Annals of Plant and Soil Research. 21 (4): 333-336.	2019
40.	Studies on genetic parameters, correlation and causation among biometrical traits in bhendi.	Vinithra, S., K. Sindhuja, N. Senthilkumar, P. Thangavel, S. T. Ponsiva, R. Kandasamy and S. Thirugnanakumar	Electronic J. Plant Breeding. 10(4): 1541-1546.	2019
41.	Variability and heritability studies in bottle gourd ( <i>Lagenaria siceraria</i> (Mol) Standl).	Kandasamy, R., E. Arivazhagan and S. Sharmil Bharathi	Plant Archives. 19 (2): 3263-3266.	2019
42.	Studies on genetic diversity in bottle gourd ( <i>Lagenaria siceraria</i> (Mol.) Standl.)	Kandasamy, R., E. Arivazhagan and S. Sharmil Bharathi	Plant Archives. 19 (2): 2270-2272.	2019
43.	Effect of growth regulators on growth and yield of culinary melon ( <i>Cucumis melo</i> L.).	Kandasamy, R., E. Arivazhagan and S. Sreevidya	International J. Res. Analytical Rev.	2019
44.	Influence of plant growth regulators on sex expression of culinary melon	Kandasamy, R., E. Arivazhagan and S. Sreevidya	International J. Res. Analytical Rev. 6(2): 575-578.	2019
45.	Studies on the influence of organic manures and effective microorganisms on growth characters of okra.	Kamalakaran, S., Ganesan, G., Sudhagar, R., Kumar, S. and Venkatesan, S.	Journal of Emerging Technologies and Innovative Research. 6 (6):441 - 443.	2019
46.	Influence of fertigation and mulching on growth characters at harvest stage in okra	Kamalakaran, S., Sureshkumar, S., Kumar, S.,	International Journal of Research and	2019

		Sudhagar, R. and Venkatesan, S.	Analytical Reviews. 6 (2):812 - 815.	
47.	Effect of zinc sulphate, zinc solubilizing bacteria and vesicular arbuscular mycorrhizae on growth attributes of okra ( <i>Abelmoschus esculentus</i> L. moench.).	Kamalakaran, S., R. Manikandan, R., Haripriya, K., Sudhagar, R. and S. Kumar, S.	Plant Archives. 19 (2):3053-3056.	2019
48.	Effect of zinc sulphate and biofertilizers on yield attributes and yield of okra ( <i>Abelmoschus esculentus</i> L.) Moench).	Kamalakaran, S., Manikandan, R., Haripriya, K., Sudhagar, R. and Kumar, S.	Res. on Crops. 20 (4):747-752.	2019
49.	Influence of organic nutrients on physiological and flowering characters of bitter gourd ( <i>Momordica charantia</i> .L) ecotype mithipagal	R.Sureshkumar, S.Deepa, M.Rajkumar, R.Sendhilmathan and T.R.Barathkumar	JETIR. 6(2):177-181.	2019
50.	Effect of organic nutrients on certain growth and yield characters of bitter gourd ( <i>Momordica charantia</i> L.) Ecotype "mithipagal"	R.Sureshkumar, S. Deepa, M. Rajkumar and R. Sendhilmathan	Plant Archives. 19(Suppliment 1):1013-1016.	2019
51.	Effect of organic inputs on yield and quality of okra ( <i>Abelmoschus esculentus</i> ).	R.Sureshkumar, S.Ayyappan, M.Rajkumar and R.Sendhilmathan	Plant Archives. 19(Suppliment 1):956-959.	2019
52.	Influence of bio-regulators on certain growth, flowering and yield characters of bhendi ( <i>Abelmoschus esculentus</i> L. Moench).	S.Ayyappan, R.Sureshkumar, M.Rajkumar, R.Sendhilmathan and T.R.Barathkumar.	Journal of Emerging Technologies and innovative Research. 6(6): 856-860.	2019
53.	Influence of organic inputs on the growth, yield and quality of tomato ( <i>Solanum lycopersicum</i> L.) cv. Sivam	E. Arivazhagan, R. Kandasamy and S. Maniram	Annals of Plant and Soil Research. 21 (4): 367-370.	2019
54.	Yield maximization of gherkin ( <i>Cucumis anguria</i> L.) using plant growth regulators.	P. Madhana Kumari and B. Shanmugapriya	J. Emerging Technol. Innov. Res. 6(4):2349-2162.	2019
55.	Effect of biostimulants on physiological and quality parameters of carrot ( <i>Daucus carota</i> L.) Var. Early Nantes.	P. Madhana Kumari, S. Parthiban and S. Eswaramoorthy	Int. J. Adv. Innov. Res. 6(2):XXVIII	2019

56.	Effect of Integrated Nutrient Management on Growth Characters of Radish ( <i>Raphanus sativus</i> L.)	P. Jai Sankar and J. Padmanaban	Journal of Emerging Technologies and Innovation Research. 6(1):645-649.	2019
57.	Influence of organic nutrients on yield, quality of bitter melon ( <i>Momordica charantia</i> L.).cv.Long green.	Muruganandam.C., K.Udhyakumar, T.R. Barathkumar and S.Sivasankar.2019.	J. of.Emerging Technologies and innovative Research. 6(5):602-614	2019
58.	Effect of graded levels of nitrogen and azospirillum on fruit yield, quality and nutrient uptake in ash gourd ( <i>Beninca sahisvida</i> COGN.).	Muruganandam.C., I.Anandharaj, T.R.Barathkumar. and S.Sivasankar.	J. of Pharmacognosy and phytochemistry. 8(3): 2455-2459	2019
59.	Studies on gene action and combining ability for earliness, fruit yield and yield contributing characters in Bhendi ( <i>Abelmoschus esculentus</i> L. moench.)	J.L. Joshi, G. Jayalakshmi, R. Ebenezer Babu Rajan and AjishMuraleedharan	Plant Archives.19(2):2964-2966.	2019
60.	Sustainable soil health management for Dolichos bean cultivation in organic way by application of bulk and concentrated organic manures on post harvest nutrient status of Soil, yield and economics benefits to the farmers.	S.Mullaimaran and K.Haripriya T.R.Barathkumar, P.Shanmugaraja and Jaisankar.P.	Journal of Pharmacognosy and Phytochemistry. SP(2): 432-435	2019
61.	Influence of organic amendments on yield, quality parameters of Baby Corn ( <i>Zea Mays</i> L) Cultivation	S.Mullaimaran., K,Haripriya, and Jaiganesh.V.	Journal of Applied Science and Computation. 6(4):3701-3708.	2019
62.	Solar along with organic amendments assisted integrated approach for the management of soil borne diseases and pest on tomato at nursery level.	S.Mullaimaran.,K,Haripriya, T.R.Barathkumar and Jaiganesh.V.	Plant Archives. 6(1):1352-1355.	2019
63.	Effect of storage and seed treatments on the germination and seedling vigour of amaranth ( <i>Abelmoschus moschatus</i> Medic.).	Rajeswari, R. and Arumugam Shakila.	Internat. J. Advance and Innovative Research. 6(2): 154-157.	2019

64.	Genetic diversity in brinjal ( <i>Solanum melongena</i> L.).	K. Balasubramaniam, K. Haripriya, T.R. Bharath Kumar and R. Elangaimannan.	Plant Archives. 20(2):3754-3758.	2020
65.	Influence of organic inputs in augmenting the growth and yield attributes of okra ( <i>Abelmoschus esculentus</i> (L.) Moench.).	T.Uma Maheswari and M. Rajkumar.	Plant Archives. 20(1):2968-2970	2020
66.	Response of aggregatum onion ( <i>Allium cepa</i> L. Var. <i>aggregatum</i> Don.) to organic inputs, biofertilizers and biostimulants.	D. Anbarasi and K. Haripriya	Plant Archives. 20(1): 759-762.	
67.	Optimizing the varied levels of nitrogen and potassium on yield of soil-less culture of brinjal ( <i>solanum melongena</i> L.) using different media	G. Sajiv, A. Anburani, K. Sekar and K. Muthumanickam	Plant Archives. 20( Supplement 2):1863-1865.	2020
68.	Effect of organic seed pelleting on biometric, biophysical and yield parameters of clusterbean under saline condition.	Prakash, M; Pallavamallan, S; Narayanan, G Sathiya; Rameshkumar, S;	Legume Research: An International Journal. 436.	2020
69.	Genetic diversity in bitter gourd ( <i>Momordica charantia</i> L.) under coastal ecosystem.	Waikhom Jupiter and R. Kandasamy	Plant Archives. 20 (Supplement 1): 1063-1066.	2020
70.	Studies on genetic variability in bitter gourd ( <i>Momordica charantia</i> L.) under coastal ecosystem	Waikohom Jupiter and R. Kandasamy	Plant Archives. 20 (Supplement 1): 2221-2224.	2020
71.	Correlation and path coefficient analysis among the landraces of pumpkin ( <i>Cucurbita moschata</i> Duch Ex. Poir)	Anusa, P., R. Kandasamy and E. Arivazhagan	Annals of Plant and Soil Research, 22(1): 86-91	2020
72.	Screening of vegetable soybean ecotypes in cuddalore district of tamilnadu.	Kamalakaran, S., Haripriya, K., Sudhagar, R. and Venkatesan, S.	Plant Archives. 20 (Supplement 1): 1940-1942.	2020
73.	Bio efficacy of Tetra power on growth, yield and quality attributes of brinjal ( <i>Solanum melongena</i> L.) cv Annamalai.	Elakkuvan S., R.S. Sugavanam, S. Kumar and Ramkumar	Plant Archives. 20 (Supplement 1): 3718-3720.	2020
74.	Evaluation of parents and hybrids for fruit yield and its component traits in bhendi ( <i>Abelmoschus esculentus</i> L. monech).	C. Praveen Sampath Kumar, T. Tamil Mathi, Darling B. Suji and AjishMuraleedhara	Plant Archives. 20(2): 2020 5328-5330.	2020

		n		
75.	Correlation and path analysis of yield and yield attributing traits of okra ( <i>Abelmoschus esculentus</i> L. moench).	Sri Ranganayaki S., Joshi J.L., AjishMuraleedharan, Praveen Sampathkumar C. and Ebenezer Babu Rajan R	Plant Archives. 20 (Supplement 2): 1612-1614.	2020
76.	Comparative studies on fifteen genotypes of okra ( <i>Abelmoschus esculentus</i> (L.) moench) for vegetative characters	Joshi J.L., Anbuselvam Y.A, Sri Ranganayaki S, AjishMuraleedharan, R.Ebenesar Babu Rajan and C. Praveen Sampath Kumar.	Plant Archives. 20 (Supplement 2): 3773-3775.	2020
77.	Screening of okra genotypes for yellow vein mosaic virus disease using ISSR markers	Joshi, J.L, Anbuselvam, Y.A, Sri Ranganayaki, S, AjishMuraleedharan and C. Praveen Sampath Kumar.	Plant Archives. 20 (Supplement 2): 3776-3777.	2020
78.	Estimation of standard heterosis in bhendi ( <i>Abelmoschus esculentus</i> L. moench).	P. Siva Ranjani, R. Ebenezer Babu Rajan, C. Praveen Sampath Kumar, J.L. Joshi and AjishMuraleedharan.	Plant Archives. 20 (1): 2070-2072.	2020
79.	Effect of bio-stimulants on the physiological and quality parameters of bush bean ( <i>Lablab purpureus</i> )	V. M. Priyadharshini and P. Madhanakumari	Crop Research, 6(5):1376-1378.	2020
80.	Bioefficacy evaluation of <i>Serratia marcescens</i> against anthracnose ( <i>Colletotrichum lindemuthianum</i> (Sacc. & Magnus) Briosi&Cavara) disease in dolichos bean.	Papitha, K., K. Sanjeevkumar, P. Balabaskar and S. Kumar	Plant Archives. 20 (Supplement 1): 493-496.	2020
81.	Mycoparasitic effect of <i>Serratia marcescens</i> and <i>Allium sativum</i> on the anthracnose incidence, plant growth and induced systemic resistance of dolichos bean.	Papitha, K., K. Sanjeevkumar, P. Balabaskar and S. Kumar	Plant Archives. 20 (Supplement 1): 2249-2255.	2020
82.	Effect of seed and soil application with different doses of <i>Serratia marcescens</i> on plant growth and incidence of damping-off ( <i>Pythium aphanidermatum</i> (Edson) Fitz.) of brinjal under pot culture..	Subharathinam. M, K. Sanjeevkumar, P. Balabaskar and S. Kumar	Plant Archives. 20: 1889-1894.	2020

83.	Isolation, identification and molecular characterization of <i>Pythium</i> species from brinjal growing tracts of Erode and Cuddalore district	Subharathinam. M, K. Sanjeevkumar, P. Balabaskar and S. Kumar	Plant Archives. 20(1): 3411-3416.	2020
84.	Assessment of genetic variability, heritability and genetic advance in brinjal ( <i>Solanum melongena</i> L.)	K. Balasubramaniam, K. Haripriya, T.R. Bharath Kumar and R. Elangaimannan.2021	Plant Archives. 21(1):1784-1786.	2021.
85.	Genetic variability, heritability and genetic advance in bottle gourd ( <i>Lagenaria siceraria</i> (Molina) stand L.) genotypes.	M. Venkatraman and K. Haripriya	Annalus of Plant and Soil Research. 23(2): 200-203.	2021
86.	Genetic variability, heritability and genetic advances in brinjal ( <i>Solanum melongena</i> L.)	D. Anbarasi and K. Haripriya	Annalus of Plant and Soil Research. 23(2): 196-199.	2021
87.	Genetic divergence in brinjal genotypes for growth and yield parameters.	D. Anbarasi and K. Haripriya	Electronic Journal of Plant Breeding. 12(4):1408-1412.	2021
88.	Genetic divergence studies in bottle gourd ( <i>Lagenaria siceraria</i> (Molina) Standl.) genotypes	M. Venkatraman and K. Haripriya	International Journal of Botany studies. 6(5):1149-1151.	2021
89.	Correlation and path coefficient analysis of some quantitative traits in brinjal ( <i>Solanum melongena</i> L.) fruit.	D. Anbarasi and K. Haripriya	Plant cell Biotechnology and Molecular Biology. 22(69& 70):53-59.	2021
90.	Evaluation of brinjal ( <i>Solanum melongena</i> L.) genotypes for various growth and yield characters.	D. Anbarasi and K. Haripriya	International Journal of Botany studies. 6(6):130-133.	2021
91.	Genetic variability, heritability and genetic advances in bottle gourd ( <i>Lagenaria siceraria</i> (Molina) Stand L.) genotypes.	M. Venkatraman and K. Haripriya	Annalus of Plant and Soil Research.	2021

			23(2):200-203.	
92.	Effect of organic manures and bio fortification of selenium on physiological and flowering parameters of cucumber ( <i>Cucumis sativus</i> L.)	S. FowminaSulaiha and A. Anburani	Plant Archives. 21(1):174-178.	2021
93.	Influence of organic manures and biofortification of selenium on growth, yield and selenium content of cucumber ( <i>Cucumis sativus</i> L.)	S. Fowminasulaiha and A. Anburani	Annals of Plant and Soil Research 23(1): 88-92	2021
94.	Influence of Integrated Nutrient Management on yield parameters of bitter gourd ( <i>Momordica charantia</i> . L) cv. Pattukkottai local,	M.Gayathiri and B.Porchelvi,	International Journal of emerging technologies and innovative research. (7): 783 - 786.	2021
95.	Combining ability for growth and yield characters of bhendi	S. Kalaiselvan and S. Anuja	Plant Archives, (2) 1: 1639-45	2021
96.	Combining ability for yield and quality traits in bhendi	S. Kalaiselvan and S. Anuja	Plant Archives, (2) 1: 1634-38	2021
97.	Study on Genetic divergence in yard long bean	K. Ramkumar and S.Anuja	Res. J. Agric. Sci. 12 (2): 656-658	2021
98.	Genetic variability, heritability and genetic advance studies in Yard long bean	K. Ramkumar and S.Anuja	Annals Plant Soil Res.23 (2): 215-217	2021
99.	Effect of Nano nutrients(N,Zn,Cu) on growth of Capsicum( <i>Capsicum annum</i> L. <i>vargrossum</i> )	Sam Ruban, B.Gayathri., M.Nandinidevi,	Research Journal of Agricultural Sciences. 12:1742-1746.	2021
100.	Bio-efficacy of Nano nutrients (N,Zn,Cu) on yield of Capsicum ( <i>Capsicum annum</i> L. <i>vargrossum</i> )	Sam Ruban, B.Gayathri., C.Jeyaraj	Plant archives. 21 (2):386-390.	2021
101.	Bio-efficacy of Nano nutrients (N,Zn,Cu) on growth of Capsicum( <i>Capsicum annum</i> L. <i>vargrossum</i> )	B.Gayathri, J.SamRuban, Jayaraj,	Plant Archives. 21 (2):602-607.	2021
102.	Influence of plant growth regulators on growth and yield of sponge gourd <i>Luffa aegyptiaca</i> L.cv.Thalaivasal Local.	Kandasamy, R., E. Arivazhagan and M. Saranya	Res. J. Agri.Sci., 12: 1585-1589	2021

103.	Effect of intercropping on yield, system production efficiency and economics of tomato ( <i>Solanum lycopersicum</i> ).	Soniya, T., Kamalakannan, S., Uma maheswari, T., Sudhagar, R. and Kumar, S.	Crop Res. 56 (1 & 2):23-29.	2021
104.	Growth and yield of cabbage as influenced by different irrigation and fertigation levels.	Venkatesh, C. and Kamalakannan, S.	International Journal of Botany Studies. 6 (6):1521-1524.	2021
105.	Effect of intercropping on growth and yield of tomato ( <i>Solanum lycopersicum</i> L.).	Soniya, T., Kamalakannan, S., Uma maheswari, T. and Sudhagar, R.	Annals of Plant and Soil Research. 23(1):36-41.	2021
106.	Influence of hydropriming on seed germination and seedling growth of bitter gourd ( <i>Momordica charantia</i> L.).	Soniya, T and E. Arivazhagan	International J. Botany Studies. 6(6): 800-803	2021
107.	Studies on the effect of growth regulators on growth and yield of chilli ( <i>Capsicum annum</i> L.) Cv. Sivam	Arivazhagan, E., R. Kandasamy and T. Naveena	Res. J. Agri. Sci., 12(5): 1689-1693	2021
108.	Influence of plant growth regulators on growth and yield of sponge gourd ( <i>Luffa aegyptiaca</i> L.) cv. Thalaivasal Local	Kandasamy, R., E. Arivazhagan and M. Saranya	Res. J. Agri.Sci. 12: 1585-1589	2021
109.	Effect of biostimulants on the growth of bush bean ( <i>Lablab purpureus</i> var. <i>typicus</i> ) cv. Co. (Gb) 14	P. Madhanakumari and V. M. Priyadharshini	Plant Archives. 21(1):63-65.	2021
110.	Effect of biostimulants on the yield of bush bean ( <i>Lablab purpureus</i> var. <i>typicus</i> )	V. M. Priyadharshini and P. Madhanakumari	Annals of plant and soil res., 23(1):66-70.	2021
111.	Influence of growing media on herbage yield of onion ( <i>Allium cepa</i> L.) microgreens	V. M. Priyadharshini and P. Madhanakumari	Int. J. Botany Studies. 55(5/6):262-267.	2021
112.	Augmenting yield of taro ( <i>Colocasia esculenta</i> L.) Schott) through organic manures	M. Mahalakshmi and P. Madhanakumari	Crop Res.,56(6): 323-328.	2021
113.	Mycoparasitic effect of combined application of <i>Serratia marcescens</i> and <i>Allium sativum</i> on the anthracnose ( <i>Colletotrichum lindemuthianum</i> (Sacc. & Magnus) Briosi&Cavara) incidence of Dolichos bean under <i>In vivo</i> conditions	Sanjeev Kumar, K., K Papitha, P Balabaskar, S Kumar and S Sudhasha	International Journal of Botany Studies. Vol. 6(5): 886-889.	2021
114.	Effect of integrated nutrient management practices on yield and quality of sweet potato ( <i>Ipomoea batatus</i> Lam) cv. kanjangad.	P.B.Shabitha and R.Rajeswari.	Internat. J of plant and soil sci. 33(18): 73-83.	2021
115.	Effect of Organic Inputs on Growth Parameters of Bottle Gourd [ <i>Lagenaria siceraria</i> (Mol.) Stand L.]	S. Kamalakannan, S. Meena, S. Madhavan, J. Nambi, S. Kumar and R. Sudhagar	Research Journal of Agricultural Sciences. (2022)	2022

			13: 222-224.	
116.	Augmentation of physiological and quality parameters of taro ( <i>Colocasia esculenta</i> L.) Schott) through organic manures	M. Mahalakshmi and P. Madhanakumari	Annals of plant and soil res. 24(1):158-161.	2022

**Workshop/Symposium/Webinars organized from 2017-2022**

S.No	Title of the Programme	Name of the Faculty	Date
1.	Workshop on Roof Garden	Dr. R. Sudhagar Dr. S. Venkatesan Dr. T. Uma Maheswari	2 <sup>nd</sup> & 3 <sup>rd</sup> February 2018
2.	National workshop on BHUVAN Geo portal for Precision farming	Dr. S. Venkatesan Dr. R. Sudhagar	8 <sup>th</sup> January 2019
3.	National symposium on Horticulture in the Vanguard of climate change and urban environment	Dr. R. Ramesh Kumar Dr. D. Dhanasekaran Dr. CT. Sathappan	7 <sup>th</sup> & 8 <sup>th</sup> February 2019
4.	Webinar on Recent advances in the improvement of cucurbitaceous vegetables and Bhendi	Dr. S. Kamalakannan	11 <sup>th</sup> & 16 <sup>th</sup> July 2020
5	Webinar on Emerging trends in temperate fruit production	Dr. CT. Sathappan	12 <sup>th</sup> & 13 <sup>th</sup> July 2020
6	Webinar on Strategies to combat recent challenges in Floriculture Industry	Dr. S. Rameshkumar Dr. D. Dhanasekaran	18 <sup>th</sup> July 2020
7	Webinar on Landscape tools for smart societies	Dr. S. Rameshkumar Dr. D. Dhanasekaran	19 <sup>th</sup> July 2020
8	Webinar on New normal in floriculture	Dr. S. Rameshkumar Dr. D. Dhanasekaran	23 <sup>rd</sup> July 2020
9	Webinar on Recent advances in strawberry production	Dr. CT. Sathappan Dr. D. Dhanasekaran	24 <sup>th</sup> July 2020

10	Webinar on Research Advances in kiwi production	Dr. CT. Sathappan Dr. D. Dhanasekaran	31 <sup>st</sup> July 2020
11	Webinar on Health foods from fruits and vegetables - An Imminent need	Dr. CT. Sathappan Dr. D. Dhanasekaran	1 <sup>st</sup> August 2020
12	Webinar on Banana - Fruit for Nutritional and livelihood security	Dr. R. Sendhilnathan Dr. S. Sivasankar	2 <sup>nd</sup> August 2020
13	Webinar on Annona - The super fruit of 21 <sup>st</sup> century	Dr. R. Kandasamy Dr. E. Arivazhagan	3 <sup>rd</sup> August 2020
14	Webinar on Nutraceuticals from flower crops	Dr. S. Rameshkumar Dr. N. Dhamodharan	4 <sup>th</sup> August 2020
15	Webinar on Flower seed production - challenges and opportunities	Dr. S. Rameshkumar Dr. D. Dhanasekaran Dr. CT. Sathappan	5 <sup>th</sup> August 2020
16	International workshop on Naunces in Floriculture industry ( <a href="#">Webinar 1.pdf</a> )	Dr. S. Sivasankar	6 <sup>th</sup> September 2021
17	International workshop on Naunces in landscape industry ( <a href="#">Webinar2.pdf</a> )	Dr. S. Rameshkumar Dr. CT. Sathappan Dr. D. Dhanasekaran	13 <sup>th</sup> September 2021
18	International workshop on Naunces in Post harvest horticulture ( <a href="#">Webinar3.pdf</a> )	Dr. CT. Sathappan Dr. J. Padmanaban Dr. D. Dhanasekaran	20 <sup>th</sup> September 2021
19	National work shop - Emerging trends in production and processing of guava ( <a href="#">Webinar 4.pdf</a> )	Dr. S. Kamalakannan Dr. S. Kumar	25 <sup>th</sup> September 2021
20	International workshop - Opportunities and challenges in horticultural technologies ( <a href="#">Webinar 5.pdf</a> )	Dr. A. Anburani Dr. C. Muruganandam Mr. S. Elakkuvan Dr. R. Rajeswari	30 <sup>th</sup> September 2021

21	International Virtual conference – Startups in Horticulture Industry (SUHI - 21) ( <a href="#">Webinar 6.pdf</a> )	Dr.R.Sendhinathan Dr. M. Rajkumar Dr. P. Madhana Kumari	20 <sup>th</sup> October 2021
22	International Virtual Workshop – Scope and opportunities in plantation crops (SOPC - 21) ( <a href="#">Webinar 7.pdf</a> )	Dr.R.Kandasamy Dr. E. Arivazhagan Dr. A. R. Lenin	27 <sup>th</sup> October 2021
23	International Virtual conference – Innovative trends in horticulture production (ITHP - 21) ( <a href="#">Webinar 8.pdf</a> )	Dr.R.Suresh Kumar Dr. T.R. Barathkumar Dr. T. Uma Maheswari	29 <sup>th</sup> October 2021
24	National Virtual workshop – Procurement, processing and product promotion in horticulture crops ( <a href="#">Webinar 9.pdf</a> )	Dr.R.Sudhagar Dr. S. Venkatesan Dr. M. Gayathiri	16 <sup>th</sup> November 2021
25	International Virtual conference – Healthy horticulture for wealthy environment (file:///H:/webinar/Webinar%2010.pdf)	Dr.S.Kamalakannan Dr. S. Kumar Dr. R. Rajeswari	18 <sup>th</sup> November 2021

#### Awards/Recognitions from 2017 to 2022

S. No	Name of the faculty	Awards
1.	Dr. K. HariPriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	1. Subject matter Specialist in selection committee, ICAR-National Research Centre for Banana Trichirapalli. 09.04.2021 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 22.06.2021 3. External expert member, expert committee for restructuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021 4. Board of studies in Agriculture – (GRI), Gandhigram Rural Institute, Gandhigram, Dindigul. 2021-2024

		5. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019
3	Dr. A. Anburani	1. APSI Honours award by Academy in Plant Sciences, India. 2. Best oral presentation award at international symposia, Hyderabad.
4	Dr. S. Anuja	1. Received best paper award, Annamalai University. 2. Received certificate of achievement award.
5	Dr. S. Rameshkumar	1. Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu
6	Dr. J. Samruban	1. 1 <sup>st</sup> poster presentation award in 9 <sup>th</sup> Indian Horticulture congress 2021, Kanpur
7	Dr. R. Kandasamy	1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry
8	Dr. CT. Sathappan	1. Fellow of National Gladiolus Trust.
9	Dr. S. Venkatesan	1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019 2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019. 3. Best Horticulturalist Award- Agricultural & Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3 <sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 & 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India. 4. Best oral presentation Award- 3 <sup>rd</sup> National Conference on Promoting & Reinvigorating Agri - Horti, Technological Innovations (24 <sup>th</sup> & 25 <sup>th</sup> December, 2019) held at Danbad Jharkhand, India. 5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment (VOICE) & Pondicherry Institute of Agricultural Sciences (PIAS) in Association with Murray State University, USA. Supported by Centre for Environment & Agricultural Development (CEAD)- 2020 6. Excellence in Research award- 3 <sup>rd</sup> International Conference (Hybrid Mode) on Food, Agriculture and

		<p>Innovations (3<sup>rd</sup> ICFAI ), December 26 – 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 – 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>8. Best Horticulturist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</p> <p>10. Best Poster Award- Two days DST PURSE – II Sponsored National conference on “Transforming Agricultural Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 &amp; 22, 2022.</p>
10	Dr. T. R. Barath Kumar	<p>1. PRAGATI, Organizing Committee, Dhanbad, Jharkhand, India. 2017</p> <p>2. TECHSEAR, Organizing Committee, ICAR-IIRR- Rajendranagar, Hyderabad, India. 2017</p> <p>3. Endling conferences society, ICFA-2018, Pune, Maharashtra, India. 2018</p> <p>4. NSPOFED, Organizing Committee, School of agriculture and animal sciences, Gandhigram rural institute-Deemed to be University, Gandhigram, Dindigul, Tamil Nadu, India. 2019.</p> <p>5. Astha foundation (Meerut,U.P) &amp; Organizing Committee GRISAAS, ICAR, NAARM, Rajendranagar, Hyderabad, Telangana, India. 2019.</p> <p>6. ICEACBS, Organizing Committee, VOICE, PIAS, Murray State University (USA) and CEAD Puducherry,</p>

		<p>India. 2020.</p> <p>7. "3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)" Ranchi, Jharkhand. 2022</p> <p>8. "3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)" Ranchi, Jharkhand. 2022</p>
11	Dr. R. Sendhilnathan	<p>1. Awarded Best poster presentation. in 21<sup>st</sup> century (NSPOFED -in 21<sup>st</sup> century. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of agriculture and animal sciences, Gandhigram Rural Institute, Dindigul.</p> <p>2. Excellence in Research award for outstanding contribution in the field of "Floriculture and landscape gardening" at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019 at ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India.</b></p> <p>3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.</p>
12	Dr. S. Madhavan	<p>1. Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources</p>
13	Dr. P. Madhana Kumari	<p>1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry</p> <p>2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.</p>
14	Dr. T. Uma Maheswari	<p>1. Best oral presentation award- AIASA, 2020</p> <p>2. Best women scientist award- ICEACBS, Puducherry, 2020</p>
15	Dr. D. Dhanasekarn	<p>1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018)</p> <p>2. Best Oral Presentation II<sup>nd</sup> Prize, NABS Conference, Pondicherry (2019)</p> <p>3. Young Scientist Award, National Gladiolus Trust (2020)</p> <p>4. Best Oral Presentation, III<sup>rd</sup> Prize, First NABS (2021)</p> <p>5. Best Oral Presentation II<sup>nd</sup> Prize, 7<sup>th</sup> National Youth Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA,</p>

		TNAU & ICAR, Coimbatore, 24-25 March, 2022
16	Dr. S. Kumar	1. Best oral presentation award- 3 <sup>rd</sup> ICFAI, Jharkhand. 2. Excellence in teaching award- ICEACBS, Puducherry, 2020
17	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
18	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry
19	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy - 2019. Thangavur. 2. Best faculty award in horticulture - CNRTSPA 2019-William research award, Kanyakumari

#### Abroad Visits

S. No	Name of the Faculty	Country visited & year	Purpose of visit
1.	Dr. R. Suresh Kumar	Thailand (2018)	International Conference of Food Agriculture and Innovation (ICFAI)
2.	Dr. J. Padmanaban	Switzerland (2019) Italy (2019) France (2019)	Academic collaboration with Tamil education Development council (TEDC)

#### Details of Project (2017-2022)

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Type	Funding Agency
1.	2019-2021	Dr. P. Karuppaiah (PI)	Doubling the farmers income through protected cultivation technology - An economic evaluation study in Tamil Nadu.	8.0	Govt.	Indian Council of Social Science Research
2.	2017-2018	Dr. S. Rameshkumar (PI)	As PI : Evaluation of Picoxystrobin 22.52% w/w SC against Powdery mildew and Downy mildew of Grapes	1.50	Non-Govt.	M/S. Bharat Rasayan
3.	2017-2019	Dr. S. Baradhan (PI) Dr. S. Rameshkumar	As Co-PI: Bio efficacy studies of	4.42	Non-Govt.	M/S. T Stanes & Co

		(Co-PI)	Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops			
4.	2018-2020	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Effect of Active ORG on the nutrient availability, growth, metabolism and yield of <i>Lycopersicon esculentum</i> Mill.	1.36	Non-Govt.	M/S. T Stanes & Co
5.	2021-2022	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Evaluation of bio efficacy of Dr.ROOT on the yield of Onion –PI	1.56	Non-Govt	M/S. T Stanes & Co
6.	2021-2022	Dr. S. Rameshkumar (PI)	As PI : Technology Dissemination Project for “Tree transplantation in Thenkasi to Thirunelvel Highway Extension Site”	1.18	Non-Govt	P & C Projects (P) Ltd.
7.	2018-2019	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Bio – efficacy of Nano nutrients on growth and yield of capsicum	3.88	Co-op. Govt.	IFFCO, Chennai
8.	2020-2023	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Effect of Nano DAP on vegetable cowpea	4.88	Co-op. Govt.	IFFCO, Chennai
9.	2019-20	Dr. M. Rajkumar (PI) Dr. J. Sam Ruban (Co-PI)	Evaluation of bio-efficacy of crop tiger on Banana	2.50	Private	PEPTECH, Bioscience limited, New Delhi
10.	2022 onwards	Dr. R. Kandasamy (PI), Dr. E. Arivazhagan (Co-PI) and Dr. C. Kathirvelu (Co-PI)	Efficacy of Bio-stimulants, Zymgold Liquid, Armurox, Equilibrium, Terrasorb Complex and Zym gold Plus Granules with respect to yield,	8.82	Non-Govt	Godrej Agrovvet Ltd., Mumbai

			yield attributing factors and crop safety on tomato crop			
11	2017-2019	Dr. RM. Kathiresan and Dr. CT. Sathappan	As Associating scientist in “ Annamalai rice+fish+poultry farming system for improving nutrition and livelihoods of small farmers in Nepal	120.00	Research and Extension	IKP-KP & USAID
12.	2018-2021	Dr.RM.Kathiresan and CT. Sathappan (Associating Scientist)	As an Associating Scientist In “Agronomic Integration of Technologies for Productivity Management and Optimal Water Use In Wetlands of Cauvery River Delta”	209.00	Govt.	DST- Mission mode
13.	2022-24	Dr. C. Kathirvelu (Principal investigator) Dr. S. Venkatesan and Dr. K. Suseendran (Co Principal investigator)	Bio- efficacy and Phytotoxicity and Compatibility of PIPL 100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crop on various growth parameters	5.52	Non Govt	M/S Parijat Industries Limited, New Delhi.
14.	2018-2020	Dr.P.Sudhagar(PI) Dr.R.Sureshkumar(Co-PI)	Efficacy of LAATU premium(Gibberellic acid0.001%)as plant growth regulator and yield of Tomato(Co-PI)	3.00	Pvt.	Sumitomo ChemicalsPvt.Ltd,New Delhi
15.	01.07.2018 to	Dr. R. Ramam (PI)	Studies on Bio-efficacy and Phyto	9.00	Non Govt.	m/s Godrej Agrovet Ltd, Mumbai.

	30.06.2020	Dr.M.Rajkumar (Co-PI)	toxicity of homo-brassinolide 0.04% EC in Paddy, Groundnut and Tomato			
16.	July 2018 to December 2019	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio-efficacy of new herbicide clethodim 12% EC for controlling grassy weeds in cotton, onion and soyabean and its phytotoxicity effect on succeeding crops	7.50	Non Govt.	Deccan fine (Chemicals) India Pvt. Ltd. Hyderabad, Telengana
17.	December 2018 to December 2021	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy toxicity evaluation of GlutოსinateAmmonium 13.5% against weed flora in grapes and its effect on succeeding crops .	13.33	Non Govt.	M/S UPL.Pvt.ltd, Mumbai.
18.	January 2020 to June 2022	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio - efficacy and phytotoxicity of Flumioxazin 50 % SC against major weeds in tea and non- cropped area and its effect on succeeding crops for two seasons	5.46	Non Govt.	M/S. Sumitomo chemical India Ltd. Mumbai NON GOVT
19.	December 2019 to May 2020	Dr.M.Rajkumar - PI Dr. J. Samruban (Co-PI)	Evaluation of Bio - efficacy of growth enhance formulations and their effect on Onion, Rice and Chilli	2.27	Non Govt.	Agri solutions Pvt.Ltd. Nashik
20.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of studies on Bio-Efficacy of evaluation of the	10.50	Non Govt.	M/S UPL.Pvt.Ltd. Mumbai.

			bio-stimulant- Gaxy on cotton and grape and opteine on soybean and ground nut and pilatus on tomato.			
21.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy of evaluation of Bio-Stimulant macarena on soybean, tomato, cotton and Brique on chilli and tomato.	10.50	Non Govt.	M/S.UPL.Pvt, Mumbai.
22.	February 2022 to February 2024	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy and phytotoxicity evaluation of SIAPTION 101 on growth, yield and quality of grapes for 2 season.	2.275	Non Govt.	M/s Jivagro Ltd.
23.	2018 - 2020	Prof.Rm.Kathiresan (PI) Dr.J.Padmanaban (Assoc. staff)	Agronomic Integration of Technologies for productivity management & Optimal Water Use in Wetland of Cauvery 35River Delta	67.00	Govt.	DST, New Delhi
24.	2021-2022	Dr.J.Padmanaban (PI) Dr.S.Manimaran (Co-PI)	Evaluation of Bio-stimulants: Top-up Gold (Granules) / Enhancer (Liquid) in Paddy	3.75	Non Govt.	Plantgene Biological Pvt. Ltd., Trichy
25.	2021-2024	Dr.S,Kanagarajan (PI) Dr.J.Padmanaban(Co-PI)	Testing of new insecticide: Evicent 45 WG against Thrips and capsule borer in Cardamom	10.00	Non Govt.	Syngenta India Ltd., CBE
26.	October 2021 to Septemb	Dr. T. Uma Maheswari (Co-PI) Dr.R.Kanagarajan (PI)	Evaluation project: Testing of new insecticide SPID +	5.00	Non Govt.	M/S SYNGENTA India Ltd., Coimbatore

	er 2024		ACET 54 WG against Tea pests			
27.	February 2022 to July 2024	Dr. T. Uma Maheswari-PI Dr.R.Kanagarajan (Co- PI)	Effective utilization of agricultural green waste in biosolarization as an innovative approach for ecofriendly cultivation of tomato ( <i>Solanumlycopersicu m l</i> )	10.13	Govt.	RUSA 2.0-R&I
28.	2022-24	Dr. S.Babu (PI) Dr. D.Dhanasekaran (Co-PI)	Bioefficacy trail of Glyphosate 41 % SL IPA Salt as a post emergence herbicide against grassy weeds, broad leaf weeds and sedges existing in the trail lot of tomato and mango orchard	9.60	Trail	Crystal Crop Protection Ltd., New Delhi
29.	2022-24	Dr. C.Kathirvelu (PI) Dr. D.Dhanasekaran (Co-PI)	Climate Resilience on Butterfly fauna of coastal areas of Tamilnadu and establishing Butterfly garden at Annamalai university Gardens	5.06	Govt.	RUSA 2.0 Research and Innovation- Health and Environment scheme
30.	2022-24	Dr. D.Dhanasekaran (PI) Dr. CT.Sathappan, Dr. M.Govindarajan and Dr. G.Senthilkumar	Phyto-remediationof Indoor pollution through ornamental plants with various horticultural modules for improving health and urban environment.	10.13	Govt.	RUSA 2.0 Research and Innovation- Health and Environment scheme
<b>Total Amount</b>				<b>57.04</b> <b>(Rupees</b> <b>in</b> <b>lakhs)</b>		

### 6.4.3. Technical and Supporting staff

The following technical and supporting staff members in the Department are helping in academic, research and administrative activities.

Sl.No.	Sanctioned posts	Staff in place	Responsibility
1	Secretarial staff (ASO-1, Helper-2)	3	Assisting administrative work Maintenance of office files and official records
2	Technical staff (Orchard manager-1, DGS-1, and DFS-2)	4	Assisting in orchard operations, field trials, farm record maintenance, sale proceeds, supervision of labourers, execution of purchase and settlement of bills and recording of trial observations. DTP works, data processing and documentation
3	Farm workers /Gardeners	22	Layout of field trials and farm operations.

### 6.4.4. Classrooms and Laboratories

#### I. PARTICULARS OF INSTRUCTIONAL UNITS IN THE DEPARTMENT

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)	SEATING CAPACITY
1.	HOD Room	320 sq.ft	1
2.	Office Room	240 sq.ft	4
3.	PG Class Room 1	320 sq.ft	15
4.	PG Class Room 2	640 sq.ft	40
5.	PG Class Room 3	720 sq.ft	40
6.	PG Class Room 4	420 sq.ft	15
7.	Ph.D Class Room 1	640 sq.ft	15
8.	Ph.D Class Room 2	320 sq.ft	15
9.	Laboratory (PG/Ph.D)	640 sq.ft	15

10.	Staff Room 1	320 sq.ft	4
11.	Staff Room 2	400 sq.ft	5
12.	Staff Room 3	640 sq.ft	12
13.	Staff Room 4	100 sq.ft	5
14.	Staff Room 5	120 sq.ft	5
15.	Staff Room 6	100 sq.ft	1
16.	Staff Room 7	320 sq.ft	1
17.	Staff Room 8	320 sq.ft	1
18.	Postharvest lab (UG) (Distillation unit, Dehydrator, Pulper, Sealer and Mixer machine)	1333 sq.ft	40

#### List of equipments available

S.No	Name of the Equipment	Equipment available in the department
1.	Weighing balance (0.001)	1
2.	Weighing balance (0.01)	3
3.	Weighing balance (200 g)	2
4.	Weighing balance 60 kg (30 kg)	1
5.	Distillation unit	2
6.	pH meter	4
7.	EC meter	2

8.	Hand refractometer	5
9.	Digital vernier calliper	2
10.	Deep freezer vertical (-20°C, 275 l)	1
11.	Thermocycler unit	1
12.	Gel documentation unit	1
13.	Stereo zoom microscope	1
14.	Compound microscope	4
15.	Hot air oven	1
16.	Dehydrator	2
17.	Magnetic stirrer (5 l)	3
18.	Micro wave oven (25 l)	2
19.	Refrigerator (320 l)	3
20.	Water bath with shaker (20 l)	1
21.	UV spectrophotometer	1
22.	Refrigerated centrifuge	1
23.	Vertical gel unit (dual unit max)	1
24.	Horizontal gel unit (medium)	1
25.	Power pack (small)	1
26.	Micropipette (10 $\mu^{-1}$ , 100 $\mu^{-1}$ , 200 $\mu^{-1}$ , 1000 $\mu^{-1}$ )	1
27.	Laminar air flow chamber	1
28.	Digital thermometer and hygrometer	5
29.	Autoclave (vertical) 250 l	1
30.	Nitrogen distillation unit	1
31.	Air conditioner (2 tonnes)	4
32.	Online UPS (10 volts)	1
33.	Digital camera (14 mph)	1

34.	Vortex	1
35.	Hot plate	2
36.	Soxhlet Apparatus	2

## II. PARTICULARS OF INSTRUCTIONAL UNITS IN ORCHARD

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Orchard	5.66 hectare
2	Shade house	1650 sq.ft
3	Nursery	3634 sq.ft
4	UG practical class Room-III	1196 sq.ft
5	UG practical class Room-IV	1196 sq.ft
6	Class Room 1 (UG)	560 sq.ft
7	Field lab (PG/Ph.D)	380 sq.ft
8	Display / UG class room-2	380 sq.ft
9	Farm manager office	200 sq.ft
10	Tractor Shed	380 sq.ft
11	Store room	936 sq.ft
12	Implement shed	216 sq.ft
13	Threshing yard	900 sq.ft
14	Seed processing and storage unit	125 sq.ft

15	Farm fencing	1.05 km
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### III. PARTICULARS OF INSTRUCTIONAL UNITS IN FLORICULTURE AND MEDICINAL PLANTS AREA

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Floriculture and medicinal plants Unit	1.41 hectare
2	Vermicompost shed	450 sq.ft
3	NVP house 1	418 sq.ft
4	NVP house 2	418 sq.ft
5	NVP house 3	1071 sq.ft
6	Shade house	150 sq.ft
7	Mist chamber	216 sq.ft
8	Poly house	2640 sq.ft

#### 6.4.5. Conduct of Practical and Hands-on-Training

##### Hands-on-Training/Field Visits

- Practical classes are designed to address the problems faced in growing vegetables in the field.
- Crop improvement procedures are practiced.
- Germplasm documentation methods are taught upon visit to National institutes and specific Research stations.
- Intensive cultivation strategies are shown on farm at large scale commercial production units
- Nuances in augmenting yield are addressed on farm with experts.
- Visit to seed production units are arranged to learn about intricate production and marketing strategies involved.
- Bio-Tech tools applied on farm are enlightened to students during outstation programmes
- Quantitative genetics and analytical procedures like R studio are taught through experts.

#### 6.4.6. Supervision of students in Ph.D. Programme

Each Ph.D. scholar shall have a Research Advisory Committee (RAC) to guide the scholar in carrying out his/her programme.

RAC consists of Professors not fewer than four with the Supervisor as Chairperson. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director DARE for information.

RAC will discuss, advice and recommend on all matters connected with the scholar's research from admission till the submission of the thesis. Approve the topic of research and the synopsis. Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D. If necessary, recommend and approve change of title of dissertation/ thesis and change of Research Supervisor. Conduct and supervise the presentation by the candidate of the final draft of his/her proposed thesis for approval before the submission of synopsis of the thesis to the University and to give a certificate to this effect to be submitted along with the synopsis. The Research Advisory Committee will meet every semester. To scrutinize the research proposal / progress report submitted by the research scholar. To assess the conduct of experiments/field work, peruse laboratory notebooks, data recording, analysis, and publication. To review and endorse the annual progress report of the research scholar. To approve the synopsis of the thesis. The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department.

#### Students Teacher Ratio

S.No	Number of recognized Teacher for PG guidance	Academic year	Intake of students	Students Teacher Ratio
1.	33	2017-18	1	1:33
2.	33	2018-19	3	1:11
3.	33	2019-20	7	1:4.7
4.	33	2020-21	5	1:6.6
5.	33	2021-22	6	1:5.5

#### 6.4.7. Feedback of stakeholders

Constant feedback is obtained from the stakeholders as given below.

**Students:** The feedback about the curriculum and teaching methodology are obtained from the students every semester after completing the course. These comments were reviewed and considered while revising the syllabus. Department uses the feedback for enhancing the audio-visual aids, advanced laboratory equipment's and e- journals. Apart from this the mentor-mentee system enables the teachers to obtain constant feedback from students.

**Employers, those who come for campus placements:** Based on the feedback from employers, skill development and personality development programmes are conducted in addition to regular curriculum content.

**Farmers:** Feedback is regularly obtained during Farmers Day, field visits, and field trials.

**Industries:** Quality sustenance and quality enhancement measures in curriculum development process is done by restructuring the course contents based on requirement prescribed by the industry people during our industrial visits.

**Entrepreneurs:** Based on the feedback from entrepreneurs, the contents for skill development and personality development programmes are decided and implemented.

**Govt. officials:** Feedback obtained from Government officials are included during the revision of courses for PG research programmes.

**Action taken:**

- In the year 2019-20 the students expressed their differently in clearing MOOC-Swayam, NPTEL. Accordingly resolution was passed to have Topical Research course instead of MOOC. Which was passed through Faculty board.
- Number of field visits were increased learning production technologies.
- Vale added courses are offered to students.
- Laboratory timing are extended even during holidays for the access of the students.
- Coaching for TNPSC (ADH) were conducted.

**6.4.8. Student intake and attrition in the programme for last five year Ph.D. (Hort.) Vegetable science)**

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
1	3	7	5	6	--	--	--	--	--

**List of Ph. D. (Hort.) Vegetable science thesis – submitted from 2017 to 2022**

S.No	Name of the Guide	Student of the Name	Year of Submission	Title of Research for Ph. D.
1.	Dr. K. Haripriya	S.Mullaimaran (in service candidate)	2019	Standardization of Organic Practices for Yield and Quality enhancement in Vegetables
2.	Dr. S. Ramesh Kumar	A.Arul Anand (in service candidate)	2019	Standardization of agro technics in field bean
3.	Dr. P. Karuppaiah	SamhindSujin (in service candidate)	2019	Heterosis breeding in brinjal
4.	Dr. K. Manivannan	P. Jaishankar	2020	Standardisation of production technology of field bean bush type
6.	Dr. T. Uma Maheswari	N.Karthika	2020	Studies on the genetics of yield and yellow vein mosaic resistance in okra ( <i>Abelmoschus esculentus</i> L.Moench.)
5.	Dr. R. Kandasamy	Waikhom Jupiter	2022	Heterosis breeding in bitter gourd ( <i>Momordica charantia</i> L.)

6.	Dr. D. Dhanasekaran	K.Muthumanikcam	2022	Cultivation of green leafy vegetables through organic management practices for the betterment of rural women population by augmenting the nutrient content
7.	Dr. K. Manivannan	B. Sakthivel	2022	Studies on organic input on growth and yield of chilli ( <i>Capsicum annuum</i> )
8.	Dr. K. Haripriya	M.Venkatraman	2022	Line x Testing analysis in bottle gourd
9.	Dr. K. Haripriya	D.Anbarasi	2022	Line x Testing analysis in brinjal
10.	Dr. S. Anuja	K.Ramkumar	2022	Genetic analysis of growth, yield, and quality attributes in Yard long bean ( <i>Vigna unguiculata</i> spp. <i>sesquipedalis</i> )

#### Employment Details of Ph.D. Students

Name of the Student	Academic year of completion of degree	Employment details			
		Central Govt.	State Govt.	Name of the Company	Entrepreneur
B.Sakthivel	2022	-	-	Mother Teresa College of Agriculture. Pudhukottai	-
D.Anbarasi	2022	-	-	JSA college of Agriculture and Technology, Tittagudi	-

M.Venkatraman	2022	-	-	Mother Teresa College of Agriculture. Pudhukottai	-
N.Karthika	2020	-	-	Pushkaram college of Agricultural Sciences, Pudukkottai	-

### NET qualified details

Vegetable Science				
S.NO.	Academic Year	Name of the Candidate	Roll number	Year of passing
1.	2018-19	N. Karthika	1081402787	2018
2.	2018-19	S. Maniram	4091410772	2021
3.	2020-21	V.M. Priyadharshini	4091410130	2022
4.	2020-21	D. Anbarasi	4091411788	2021

### Salient research achievements vegetable science

1. Crop improvement programme in brinjal and okra were carried out to identify the elite lines for biotic and abiotic stress factors.
2. Organic horticulture practices such as soil solarization with vermicompost along with Azospirillum treatment in nursery of tomato seedling was documented as an economically viable practice. In the solarized main field, tomato followed by garden bean and baby corn was identified as successful cropping sequence.
3. Sugarcane trash mulching @ 12.5 t ha<sup>-1</sup> was identified as the best organic way of weed management practices for improving the growth, yield and quality of tomato, baby corn and garden bean.
4. The INM practices with the application of 30 kg nitrogen + 50 kg phosphorous + vermicompost @ 5 t ha<sup>-1</sup> + Biofertilizer Consortium along with the foliar application of panchakavya @ 3 % were proved to be the best in the improving the growth, yield and quality of bush bean.
5. Incorporation of locally available organic inputs improved the growth, yield and capsaicin content of chilli in Cuddalore District.

#### 6.4.9. ICT Application in Curricula Delivery

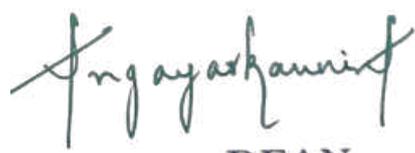
A smart class room facility, six computers with internet facility and two LCD projectors and smart TV help in making the teaching enabled with ICT in the Department. Video facilities available in Department help us to cast videos on precision farming practices pertaining to floriculture, nursery and post harvest value addition. Software's on Archi CAD (AUTO CAD/smart draw) and 3 D Land cad is used to demonstrate to the students for the Ornamental and Landscape Gardening course. PPTs are designed and updated regularly to teach the syllabus content in a way to make the students understand better. Mobile Apps for Landscape designing, sound pollution monitoring and Google class room are used and students are exposed to these Apps to keep them aware of the current trends. Site analysis and measuring tools available on Google Earth is exposed to the students for learning landscaping in a smart way.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented college-Wise.

6.4.11 Since the accreditation of Programmes is related to the all India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12 Certificate (Applicable when SSR is submitted for Programme)

I, the Dean, Faculty of Agriculture, Annamalai University hereby certify that the information contained in the section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY

Signature of Dean of the College with Date & seal



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
Ph.D. Floriculture and Landscaping**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)



**FACULTY OF AGRICULTURE**

**Department of Horticulture**

**SELF STUDY REPORT OF**

**PH. D. (HORT.) FLORICULTURE AND  
LANDSCAPING**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## Self-Study Report

### 6.4. Name of the Programme: Ph. D. (Hort.) Floriculture and Landscaping

Offered by: Department of Horticulture

#### 6.4.1. Brief History

The Division of Horticulture came into existence in 1958 with an objective of offering horticultural subjects to B.Sc. (Ag.) graduates. In the early stages, the Division was attached with the Department of Agricultural Botany. Under the leadership of renowned Horticulturist of International repute, Dr. S. Krishnamoorthy, a pioneering post graduate course in Horticulture was introduced for the first time in South India in 1958-59. With further expansion, the erstwhile Division of Horticulture functioning from 1958-59 onwards was upgraded as a Department in 1991 with the revival of a full fledged doctoral programme - Ph. D. in Horticulture and later on Ph.D. in Horticulture with course work from 2013 onwards. This integrated Ph.D. in Horticulture programme was continued upto 2021. However, during last board of studies held on 14<sup>th</sup> May 2022 the existing Ph.D in Horticulture was bifurcated into four specialized degree programme *viz.*, Fruit Science, Vegetable Science, Floriculture and Landscaping and Plantation, Spices, Medicinal and Aromatic Crops based on BSMA recommendation of 5<sup>th</sup> Deans committee of ICAR.

Historical Itinerary	Year/Period
Division of Horticulture	1958
First PG Programme in Horticulture	1958-59
Upgraded as a Department	1991
Post graduate Programme M.Sc. (Ag.) in Horticulture	1991
M.Sc. (Hort.) in Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2012 -2013
Ph. D. in Horticulture	1991
Ph. D. in Horticulture with course work	2013
Ph. D. Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2022 - 2023 onwards

The Ph. D. (Hort.) Floriculture and Landscaping has 100 credits in 6 semesters which includes 12 credits for major courses, 06 credits for minor courses, 05 credits for supporting courses, 02 credits for seminar and 75 credits for Ph.D thesis research. In addition to 100 credits, 02 contact hours for non credit compulsory courses and 02 contact hours for MOOC have been included to improve the research acumen and employability of the students.

Revision of the curricula was carried out in the academic year 2022-2023 in concurrence with the latest recommendations from BSMA and 5<sup>th</sup> Dean's committee of ICAR.

#### Semester wise Distribution of Credits

Semester	Major Course	Minor Course	Supporting Course	Seminar	Research
I	6	4	2	1	2
II	6	2	3	1	10
III	-	-	-	-	15
IV	-	-	-	-	16
V	-	-	-	-	16
VI	-	-	-	-	16
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>

#### Distribution of Courses

Course code	Course Title	Credit hour (Theory + Practical)
<b>Major Courses</b>		12
FLA 601*	Crop Regulation in Ornamental Crops	1+1
FLA 602*	Postharvest Biology of Floricultural Crops	2+1
FLA 603	Specialty Flowers, Fillers and Cut Greens	1+1
FLA 604	Biotechnological Approaches in Floricultural Crop	2+1
FLA 605*	Advances in Landscaping	1+1
<b>Minor Courses</b>		6
FLA 606	Vertical Gardening	1+2
FLA 607	Modern Approaches in Breeding of Floricultural crops	2+1
FLA609	Recent Developments in Protected Cultivation of Floricultural Crops	2+1
<b>Supporting Courses</b>		5
COM 601	Advances in Computer Applications (1+1)	2

STA 601	Advances in Designs of Experiments (2+1)	3
	<b>Seminar</b>	
	Doctoral Seminar - I (0+1)	1
	Doctoral Seminar - II (0+1)	1
	<b>Research</b>	
	Doctoral Research (0+75)	75
	<b>Non credit courses</b>	
	<b>MOOC</b> (2+0)	-
	Research and Public Ethics (2+0)	-

### Vision

- Imparting quality education.
- Increasing employability of graduates in Floriculture and Landscaping to meet the industrial demand and societal need by providing updated syllabus content on par with National and global standards.
- Increasing the Gross Enrolment Ratio (GER) of Floriculture and Landscaping programmes.
- Disseminating Floriculture and Landscaping technology to farming community.

### Strategic plan to achieve Vision and Goal

Goal	Programme Objectives	Implementation Plan	Performance Metrics /Timeline
Quality education	To prepare students to generate knowledge on management, production and strategies leading to the development of research philosophies, concepts and methodologies.	Classes are handled by experienced Faculty through class room teaching and practical demonstration.	Periodical class tests, practical assignments, quiz and end term exams are conducted to evaluate the performance of students.
Employability and National standards	To inculcate ability in students to critically analyze and comprehend the knowledge gained from a range of scientific data to	The students are guided to collect literature, identify gaps and propose research problem and conduct research on it.	The advisory committee supervises and evaluates the students during end of every semester.

	approach cultivation problems and reach appropriate solutions in the area of their specialization.	Timely revision of curriculum according to BSMA and ICAR Deans committee.	
Professional ethics	To enhance capability of students to adhere to professional ethics and responsibilities related to horticultural practices.	The curriculum includes field / lab research activities making the students aware of professional norms and resource usage in cautious manner.	The student is continuously monitored by periodical review of work done in field, use of agricultural inputs, recording timely observations and verification of data by advisory committee.
Technology transfer	To facilitate exposure of students to function effectively as an individual and as a member or leader in diverse teams or interdisciplinary environment.	The interdisciplinary research approach is encouraged in making the students work in a diverse environment.	The activity of students in related research labs is evaluated by the major supervisor from time to time.
Lifelong learning	To engage the students in life-long learning and professional development through self- directed studies.	The programme includes compulsory courses along with research, seminars and publication of research work.	The continuous evaluation of courses is done through theory and practical exams while research is evaluated based on research progress in each semester and thesis submission at the end of the degree.

### **Accomplishments**

The Department of Horticulture is a pioneer institute which offered post graduate Horticultural programme in South India during 1958-59. The Horticulturists of international repute like Dr. S. Krishnamoorthy, Prof. P. Kalyanasundaram and Dr. L. R. Rajasekaran have fuelled the growth of this Department in its early stage and formed the basis of its present

state of existence. The Department has been imparting quality education by using updated technologies in the field of education with audio visual aids, method demonstrations and participatory approach and interactive practical experiments. **The Department was awarded with DST - FIST funds for infrastructure development. The syllabus content are updated as per suggestions by stake holders, lead organisations in agriculture and scientific experts. The students are given practical exposure in horticulture industries by hands- on - training and by study tours and industrial trainings.** The students are given counselling by the teachers for their academic improvement and future planning. Special coaching for ICAR JRF, SRF and NET examinations are provided.

The Department of Horticulture has contributed to the horticulture sector by researching upon the need based objectives in the coastal area. The location specific research outcomes are disseminated to the farmers in the coastal Tamil Nadu to propel horticultural crops in the coastal farming system. The department distributes certified seeds of “Annamalai brinjal” to the farmers. **The standardized package of practices developed for rice-fallow vegetable production, common tropical vegetables and introduction of nutritionally rich/economically feasible less known crops has been carried out. For the industrial sector stake holders, the Department is providing its research expertise by conducting product evaluation research.**

The Department is training the farmers in new technologies that are upcoming in the field of horticulture and creating awareness among the farmers about the new crops, varieties and techniques. Diagnostic services to the farmers are provided for various production problems. Demonstration of technologies through Rural Horticultural Work Experience is done every year. Periodically workshops and seminars are conducted for the benefit of industrial stake holders, scholars and scientists.

Category	Upto 2016	Last five year period (2017-2022)
Number of Publications (Journal articles)	724	338
Number of Books & Book chapters	13	20
Number of Book chapters	45	232
Number of Projects Handled	21	26
Grant mobilization (Rs. in lakh)	188.48	57.04
Number of Ph.D.s produced	43	8
Number of PGs produced	328	180
Number of Seminars/Conferences/Workshops/webinars Organized	6	25
Number of Awards/recognition received by the Faculty	113	51
Countnes visited by the Faculty. (Professional Visit)	9	9

#### 6.4.2. Faculty Strength

Presently 35 staff members are available in the Department specialized in different aspects of Horticulture

S. No.	Sanctioned posts	Sanctioned	Filled	Vacant	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1	Professor*	6	6	-	1
2	Associate Professor*	5	5	-	1
3	Assistant Professor*	24	24	-	3
	<b>Total</b>	<b>35</b>	<b>35</b>	<b>-</b>	<b>5</b>

\* Engaged in UG, PG and Ph.D programmes

### Number of Faculty designated for Floriculture and Landscaping

Professor\* - 01

Associate Professor\* - 01

Assistant Professor\* - 06

\*Commonly engaged for other courses also

### Faculty engaged for common courses from the other Departments

S. No	Cadre	Faculty in place (as on August, 2022)	Vacancy position	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1.	Professor	1	-	-
2.	Associate Professor	3	-	-
3.	Assistant Professor	5	-	-

### Credentials of the Faculty

Name & Designation	Total Service (Years)	Field of Interest/ Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others
Dr. K. Haripriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
Dr. Arumugam Shakila Professor	30	Fruit Science	46	3	115	4	6
Dr. A. Anburani Professor	28	Vegetable Science	28	3	61	14	10
Dr. P. Karuppaiah, Professor	28	Floriculture and Landscaping	26	7	110	15	8
Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11
Dr.S.Rameshkumar Professor	23	Fruit Science	14	6	52	20	16
Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
Dr. S. Kamalakannan Assoc. Professor	19	Vegetable Science	9	-	86	32	25
Dr. R. Sudhagar	20	Floriculture	12	1	71	40	22

Associate professor		and Landscaping					
Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	37	22	9
Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	33	10	23
Dr. C. Muruganandam Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	10	1	41	17	16
Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	6	-	54	18	-
Dr. R. Sendhilnathan, Assistant Professor	20	Floriculture and Landscaping	10	-	39	13	18
Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28
Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	37	11	23

Dr. K. Sha Assistant Professor	20	Vegetable Science	9	-	32	-	24
Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	9	-	16	13	11
Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10
Dr. T. Uma Maheswari Assistant Professor	19	Fruit Science	8	1	89	42	25
Dr. D. Dhanasekaran Assistant Professor	19	Floriculture and Landscaping	8	1	47	39	20
Dr. A. R. Lenin Assistant Professor	18	Floriculture and Landscaping	5	-	14	4	6
Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22
Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
Mr.S.Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7
Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	13	12
Dr. G.Samlind Sujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic	4	-	31	6	5

		crops					
Dr. S. Sivasankar Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	20	4

### Publication Details (2017-2022)

S.No.	Title	Authors	Journal	Year
1.	Effect of farm yard manure and biostimulants on yield and its attributes in <i>Jasminum grandiflorum</i> L. rooted cuttings.	Kamalakaran, S.	Trends in biosciences, 10(21):4258 – 4260.	2017
2.	Influence of various organic inputs on growth characters of ( <i>Jasminum grandiflorum</i> L.) rooted cuttings.	Kamalakaran, S.	Trends in biosciences, 10 (21): 4393-4396.	2017
3.	Growth retardants effects on flowering and yield parameters of spanish jasmine ( <i>Jasminum grandiflorum</i> L.).	Sudhagar, R, and S. Kamalakaran,	Journal of Floriculture and Landscaping. 3:01-03. ISSN: 2663-6050 (Online).	2017
4.	Investigation of different levels plant growth regulators and pinching treatments on flowering and yield parameters of African Marigold ( <i>Tagetes erecta</i> L.)	Kalaimani . M, CT .Sathappan, R. Kandasamy and R. Singaravel	Chemical Science. Review Letters, 6(22), 741-745.	2017
5.	Effect of bio regulators Along with organics on growth and yield of Gundu Malli ( <i>Jasminum sambac</i> Ait )	Sendhilnathan , R., Velmurugan . V and Manimaran .P	Journals of Pharmacognosy and Phytochemistry. Phytochemistry 6 (5) ; 234-238 .	2017
6.	Studies on the effect of sodium chloride on ornamental shrubs	D.Dhanasekaran	Corm- J.Floriculture. 2017, 5(2); 64-68	2017
7.	Studies on hormonal regulation of growth and flowering of Gladiolus ( <i>Gladiolus grandiflorus</i> L.) Cv.American Beauty	Dhanasekaran, D., Sathappan, CT., Lenin, A.R. and *Balakrishnan, T	Corm- J.Floriculture. 5(2); 88-94	2017
8.	Effect of graded levels of nitrogen through different sources on chlorophyll content of gladiolus cv. Jammu pride	Manoj Nazir* and Dhanasekaran, D.	Corm- J.Floriculture. 5(2); 122-126	2017

9.	Screening of marigold genotypes flower yield and pigment content	Dhanasekaran, D., Rajkumar, M., Balakrishnan, T., Lenin, A.R. and Sekar, K	International Journal of Current Research in Life Sciences. 06 (10). 696-698.	2017
10.	Effect of growth regulators on growth and flowering of jasmine ( <i>Jasminum Sambac.</i> Ait)	Dhanasekaran, D., Sathappan, CT., Rajkumar, M. Madhavan, S. and Lenin, A.R	International Journal of Current Research in Life Sciences. 06:(10) 693-695.	2017
11.	Impact of humic acid along with growing media combination with azospirillum and fym on the growth, flowering and quality of ( <i>Anthurium andreanum</i> ) plants.	AjishMuraleedharan, P. Karuppaiah and J. L. Joshi.	Journal of Emerging Technologies and Innovative Research. 4(1): 596-602.	2017
12.	Extending postharvest life of <i>Anthurium andreanum</i> cv. Tropical cut flowers on pulsing with sucrose concentrations.	AjishMuraleedharan.	Journal of Emerging Technologies and Innovative Research. 4(1): 603-606.	2017
13.	Rooting of chrysanthemum cuttings on different types of growing media and growth regulators.	AjishMuraleedharan, Ramesh Kumar, J. L. Joshi and A. J. Nainu.	Journal of Emerging Technologies and Innovative Research. 4(2): 313-319.	2017
14.	Response and effect of auxins on the rooting and growth of <i>Dendranthema grandiflora</i> cuttings	AjishMuraleedharan	Journal of Emerging Technologies and Innovative Research. 4(3): 413-417.	2017
15.	Post harvest performance of <i>Anthurium</i> cut flowers on citric acid and sucrose concentrations	AjishMuraleedharan, S. Kousika and J. L. Joshi.	Journal of Emerging Technologies and Innovative Research. 4(3): 418-421.	2017
16.	Influence of plant growth regulators on growth and flower quality of gerbera ( <i>Gerbera jamesonii</i> L.) Cv. Goliath	AjishMuraleedharan, Ramesh Kumar and J. L. Joshi	Journal of Emerging Technologies and Innovative	2017

			Research. 4(3):422-426.	
17.	Standardization of plant species and growing medium for vertical garden system: A new urban horticulture concept	Rameshkumar, S;	J. Hortl. Sci. 131	2018
18.	Solid Waste Management in Urban Landscapes areas	Arunesh, A; Selvavinayagam, S; Rameshkumar, S;	Journal of Floriculture and Landscaping. 20-22	2018
19.	Influence of preservative chemicals and growth regulators on the post harvest physical parameters of gladiolus spikes ( <i>Gladiolus grandiflorus</i> L.) cv. American Beauty	R. Sudhagar, S. Sowmiya and B. Pamela Elisheba	Journal of Emerging Technologies and Innovative Research. 5 (12): 413-416.	2018
20.	Effect of preservative chemicals on the post harvest physical parameters of gladiolus spikes ( <i>Gladiolus grandiflorus</i> L.) cv. American Beauty.	R. Sudhagar, S. Sowmiya and B. Pamela Elisheba	International Journal of Research and Analytical Reviews. 5(4): 362-365.	2018
21.	Influence of preservative chemicals on the post harvest physiological and biochemical parameters of gladiolus spikes ( <i>Gladiolus grandiflorus</i> L.) cv. American Beauty.	R. Sudhagar, S. Sowmiya and B. Pamela Elisheba	International Journal of Research and Analytical Reviews. 5(3): 345-349.	2018
22.	Effect of preservative chemicals and growth regulators on the post harvest physiological and biochemical parameters of gladiolus spikes ( <i>Gladiolus grandiflorus</i> L.) cv. American Beauty	R. Sudhagar, S. Sowmiya and B. Pamela Elisheba	Journal of Emerging Technologies and Innovative Research. 5(10): 576-581.	2018
23.	Effect of plant growth regulators and pinching on growth and flower yield of African marigold ( <i>Tagetes erecta</i> L.).	Sathappan. CT.	Journal of Horticultural Sciences. 13(1): 42-47.	2018
24.	Evaluation of tuberose ( <i>Polianthes tuberosa</i> L.) genotypes under coastal ecosystem of Tamil Nadu.	Sathappan. CT.	Journal of Horticultural Sciences. 13(2): 202-208	2018
25.	Evaluation of tuberose ( <i>Polianthes tuberosa</i> L.) Genotypes under coastal ecosystem of tamilnadu	Sathappan. CT,D.Dhanasekara n and S.Rameshkumar	Corm J.Flori. 6 (1):40-46	2018

26.	Studies On The Effect Of Certain Plant Growth Hormones On Propagation Of Pride Of India ( <i>Lagerstroemia speciosa</i> L.)	D.Dhanasekaran, Sathappan.CT, and S.Rameshkumar	Corm J.Flori. 6 (1) :40-46	2018
27.	Evaluation Of African Marigold Accessions for Yield And Xanthophyll Content	Dhanasekaran, D, Sekar, K and Sathappan, CT.	Corm J.Flori. 6 (2) :47-50	2018
28.	Influence of growth regulating chemicals on growth and flowering in Jasmine ( <i>Jasminum sambac</i> . Ait.)	D. Dhanasekaran	J. Hortl. Sci. 13(2) : 221-226.	2018
29.	Effect of sprigging density and foliar nitrogen on the growth of Berm	D. Dhanasekaran	J. Hortl. Sci. 13(2) : 43-48.	2018
30.	Response and effectiveness of anthurium plants ( <i>Anthurium andreanum</i> ) to different holding media on growth and flowering.	AjishMuraleedhara n, P. Karuppaiah, S. Ramesh Kumar, J. L. Joshi and C. Praveen Sampath Kumar.	Journal of Emerging Technologies and Innovative Research. 5(2):1577-1583.	2018
31.	Improvement of vase life in anthurium ( <i>Anthurium andreanum</i> ) cv. Acropolis by using chemical solutions	AjishMuraleedhara n, P. Karuppaiah, S. Ramesh kumar and J. L. Joshi.	Journal of Emerging Technologies and Innovative Research. 5(2): 1585-1589.	2018
32.	Improvement on extending the postharvest life and quality of anthurium ( <i>Anthurium andreanum</i> ) cut flowers by the addition of sucrose	AjishMuraleedhara n, S. Ramesh Kumar, S. Kousika and J. L. Joshi	Journal of Emerging Technologies and Innovative Research. 5(2): 1343-1347.	2018
33.	Growth and flowering on anthurium ( <i>Anthurium andreanum</i> ) plants treated with foliar application of growth regulators cv. tropical.	AjishMuraleedhara n, S. Ramesh kumar, S. Kousika and J. L. Joshi	Journal of Emerging Technologies and Innovative Research. 5(2): 1348-1354.	2018
34.	Studies on the effect of different levels of shade on the growth and yield of Anthurium ( <i>Anthurium andreanum</i> ) cv. Tropical	AjishMuraleedhara n	Journal of Emerging Technologies and Innovative Research. 7(11):6-9.	2018

35.	Effect of GA3 and foliar organics on yield and quality parameters of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal	Sivasankar, S., Vignesh, K., Rameshkumar, R. and Muruganandam, C.	International Journal of Current Research in Life Sciences. 7(11):3269-3271.	2018
36.	Effect of growth regulator and foliar organics on growth and yield of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal	Sivasankar, S., Vignesh, K., Rameshkumar, R. and Muruganandam, C	International Journal of Current Research in Life Sciences. 7(11): 3266-3268.	2018
37.	Influence on organic inputs and growth regulators on growth, yield and quality of Golden rod ( <i>Solidago canadensis</i> L.)	C.Muruganandam and Y.Angel, T.R Bharath Kumar and S.Sivasankar	Internat.J.of Advance and Innovative Research. 31: 97-100	2018
38.	Influence on organic nutrients and foliar spray on growth, yield and quality of Golden rod ( <i>Solidago canadensis</i> L.)	Muruganandam, C, Y.Angel and S.Sivasankar	Internat.J.of current Research Life sciences. 7:3264-3265.	2018
39.	Influence of organic inputs and growth regulators on yield, biochemical attributes and dry matter production in french marigold ( <i>Tagetes spatula</i> L.)	Muruganandam, C K.Udhyakumar, T.R.Barathkumar. and S.Sivasankar.	International journal of research and analytical reviews. 6(2):487-497.	2019
40.	Effect of spacing and nitrogen levels on flowering and yield of golden rod ( <i>Solidago canadensis</i> L.).	R. Sudhagar, M. Palanivel, B. Pamela Elisheba S. Kamalakannan and S. Kumar	International Journal of Advance and Innovative Research. 6(2): 98-101.	2019
41.	Effect of spacing and nitrogen levels on growth parameters of golden rod ( <i>Solidago canadensis</i> L.).	R. Sudhagar, M. Palanivel, S. Kamalakannan, S. Kumar and S. Venkatesan	International Journal of Research and Analytical Reviews. 6(2): 456-458.	2019
42.	Effect of integrated nutrient management on the plant nutrient uptake of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal.	B. Pamela Elisheba and R. Sudhagar	International Journal of Research and Analytical Reviews. 6(2): 438 - 444.	2019

43.	Effect of integrated nutrient management on the growth of African marigold ( <i>Tagetes erecta</i> L.) cv. Local Orange.	R. Sudhagar, R. Alexander, B. Pamela Elisheba and S. Kamalakannan	Journal of Pharmacognosy and Phytochemistry. 8(3): 3669-3671.	2019
44.	Effect of integrated nutrient management on the flower yield of African marigold ( <i>Tagetes erecta</i> L.) cv. Local Orange.	R. Sudhagar, R. Alexander, B. Pamela Elisheba and S. Kamalakannan	Journal of Emerging Technologies and Innovative Research. 6(5): 284-289.	2019
45.	Effect of integrated nutrient management on the plant nutrient uptake of African marigold ( <i>Tagetes erecta</i> L.) cv. Local Orange.	R. Sudhagar, R. Alexander, B. Pamela Elisheba and S. Kamalakannan	Journal of Emerging Technologies and Innovative Research. 6(5): 277-283.	2019
46.	Effect of integrated nutrient management on the flower yield of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal.	B. Pamela Elisheba and R. Sudhagar	Journal of Emerging Technologies and Innovative Research. 6(5): 166-173.	2019
47.	Effect of integrated nutrient management on the growth of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal.	B. Pamela Elisheba and R. Sudhagar	Plant Archives. 19 (1): 196-198.	2019
48.	Effect of spacing and zinc application on growth parameters of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Single.	R. Sudhagar, I. Karthikeyan, S. Kamalakannan, S. Kumar and S. Venkatesan	Plant Archives. 19(2): 3620-3622.	2019
49.	Effect of Bio-regulators on yield and quality of African Marigold( <i>Tagetes erecta</i> L.)	R.Sureshkumar, P.Prasanthkumar, R.Sendhilmathan and M.Rajkumar,	JETIR. 5(5):47-50.	2019
50.	Influence of Bio-Regulators on certain Growth and Flowering characters of African Marigold ( <i>Tagetes erecta</i> L.)	R.Sureshkumar, P.Prasanthkumar, R.Sendhilmathan and M.Rajkumar.	Journal of Emerging Technologies and innovative Research. 6(5):147-150.	2019
51.	Influence of bulb size and Gibberelic acid on sprouting and growth of Tuberose ( <i>Polianthus tuberosa</i> L) cv.	Sendhilmathan, R., P.Manimaran, M.Rajkumar,	JETIR. 6(2): 585-588.	2019

	Single.	R.Sureshkumar and T.R.Barathkumar		
52.	Studies on influence of inorganic nutrients and growth regulators on growth and flower attributes of Celosia ( <i>Celosia cristata</i> L.)	R.Sendhilmathan, E. Balaraman, M.Rajkumar and R. Sureshkumar.	International journal of advance and innovative research. 6(2):91- 94.	2019
53.	Effect of organic nutrients and bio regulators on flowering and yield attributes of Celosia ( <i>Celosia cristata</i> L.)	Sendhilmathan, R., E. Balaraman, M.Rajkumar and R. Sureshkumar.	Plant archives . 19: 938-940.	2019
54.	Effect of Pinching and foliar application of bio regulators on growth and flower yield of Gomphrena ( <i>Gomphrena globosa</i> L.)	Sendhilmathan R., R. Bharani vijay, R. Sureshkumar and M. Rajkumar.	Plant archives. 19: 1002-1005.	2019
55.	Effect of pinching and foliar application of organics on vegetative, floral attributes and quality of African marigold ( <i>Tagetes erecta</i> L.)	Sendhilmathan, R., M.Rethinakumar, M.Rajkumar and R.Sureshkumar.	Annals of plant and soil Research. 21(2): 189-192.	2019
56.	Effect of graded levels of nitrogen and phosphorus on yield and quality of Tuberose ( <i>Polianthes tuberosa</i> L.)	Sendhilmathan. R and K.Manivannan	Annals of plant and soil Research. 21(3): 261-264.	2019
57.	Effect of plant growth regulators on rooting of stem cuttings in Rose cv. Edward rose ,Corm.	Madhubala. V and R.Sendhilmathan	The Journal of Floriculture. 7(1):32-34.	2019
58.	Effect of organic manures and micronutrients on growth and flowering attributes of Rose cv. Andhra red ( <i>Rosa centifolia</i> )	Sendhilmathan, R., Madhubala, V.,Rajkumar, M. and R. Sureshkumar	Plant archives. 19(2): 3633-3637.	2019
59.	Evaluation of vegetable mesta ( <i>Hibiscus sabdariffa</i> L.) for growth and yield characters	Arivazhagan, E and R. Kandasamy	Plant archives. 19(1): 238-240.	2019
60.	Effect of postharvest treatment on vase life of gerbera ( <i>Gerbera jamesonii</i> )	Dhiviya Bharathi and J. Padmanaban, S.Ramesh Kumar and S.Murugan	Journal of Emerging Technologies and Innovation. 6(6):941-947.	2019

61.	Augmentation of flowering in Jasmine ( <i>Jasminum sambac</i> . Ait.) through growth hormones	D. Dhanasekaran	Annals of Plant and Soil Research. 21(2): 116-120.	2019
62.	Rooting behavior of certain foliage ornamentals grown under hydroponic nutrient solutions	D.Dhanasekaran and M.Jasmine	Annals of Plant and Soil Research. 21(4): 346-350.	2019
63.	Effect of foliar application of micronutrients and potassium humate on growth and flower yield of African marigold ( <i>Tagetes erecta</i> L.)	Marry Ruby Shyala, D.Dhanasekaran and S. Rameshkumar	Annals of Plant and Soil Research. 21(2): 101-107.	2019
64.	Nutrient Solutions for Foliage Ornamentals Grown Under Hydroponic Culture	D.Dhanasekaran and M.Jasmine	Corm J.Flori. 7 (1) :50-57.	2019
65.	Salinity Tolerance of Container Grown Ornamentals	Ramya, K, Dhanasekaran,D., Sathappan, CT. and Rameshkumar, S.	Corm J.Flori. 7 (1) :9-12.	2019
66.	Performance of Boat lily ( <i>Tradescantia spathacea</i> ) under various substrates and nutrients for vertical green walls	Ramya, K, Dhanasekaran,D.,Rameshkumar, S. and P.K.Karthikeyan	Corm J.Flori. 7 (2) :49-55.	2019
67.	Studies on Nutrient solution for hydroponic vertical gardens for foliage ornamentals	D.Dhanasekaran, M.Jasmine,CT.Sathappan and S.Kalaiyaran	International Journal of Advanced and Innovative Research	2019
68.	Studies on tolerance mechanism of ornamental annuals viz., zinnia and petunia under salinity stress	D.Dhanasekaran, CT.Sathappan, S.Rameshkumar, A.R.Lenin and S.Babu	International Journal of Research and Analytical Reviews. 6(2): 577-581.	2019
69.	Nacl induced pre-conditioning of ornamental plants viz., zinnia and petunia for salinity tolerance	D.Dhanasekaran, CT.Sathappan, S.Rameshkumar, S.Madhavan and S.Babu	Journal of Emerging Technologies and Innovative Research. 6(5): 52-56.	2019
70.	Role of ornamental horticulture in outdoor and indoor pollution	D.Dhanasekaran	J. Ornamental Horticulture.	019

	abatement – A review		22(1&2)	
71.	Effects of spacing and foliar application of urea on proliferation of Bermuda grass ( <i>Cynodon dactylon</i> L. Pers. × <i>Cynodon transvaalensis</i> )	D. Dhanasekaran, C.T. Sathappan and S. Ramesh Kumar	J. Ornamental Horticulture. 22(3&4)	2019
72.	Physiological response of foliage ornamentals in different nutrient solutions under hydroponic culture	M. Jasmine, D. Dhanasekaran, C.T. Sathappan and K. Sekar	J. Ornamental Horticulture. 22(3&4): 119-126.	2019
73.	Performance of Marigold ( <i>Tagetes erecta</i> L.) under coastal Tamil Nadu	D. Dhanasekaran and A.R.Lenin	Suraj Panj Journal for Multidisciplinary Research. 9(8): 20-27.	2019
74.	Salinity tolerance studies of ornamentals	D. Dhanasekaran and C.T. Sathappan	The Journal Of The Greens And Gardens. 1(2): 13-15.	2019
75.	Impact of Integrated Nutrient Management on Primary Nutrient Uptake and Postharvest Soil Availability of Chrysanthemum cv. MDU-1.	Kumar, S., C. Sreedar., S. Hariprabha, K., Sanjeevkumar and Ajishmuralidharan	International Journal of Emerging Technologies and Innovative Research. 6(2):161-164	2019
76.	Roll of integrated nutrient management on enhancement of early flowering, flower quality and yield on Chrysanthemum cv. MDU-1.	S. Kumar., C. Sreedar, K. Sanjeevkumar., AjishMuraleedharan and S. Elakkuvan	International Journal of research and analytical reviews. 6(1): 362-365.	2019
77.	Effect of cycocel on growth, flowering and yield of nerium ( <i>Nerium odorum</i> L.).	Kumar, S., K. Haripriya, K. Sanjeev kumar, Ajishmuraleedharan and S. Kamalakannan	Journal of Pharmacognosy and Phytochemistry. 8(3): 2226-2228	2019
78.	Impact of various pulsing solutions on the quality and longevity of <i>Asparagus densiflorus</i> cv. 'Sprenger'. 'Sprenger'.	Hariprabha, S., S. Kumar, S. Kamalakannan, R. Sudhagar and P. Madanakumari	International Journal of Research and Analytical Reviews. 6(2): 836-839.	2019

79.	Effect of spacing on growth and flowering of nerium ( <i>Nerium odorum</i> L.) cv. Pink Double.	Kumar, S., K. Haripriya, S. Kamalakannan, R. Sudhagar and P. Madhanakumari	International Journal of Research and Analytical Reviews. 6(2): 107-109.	2019
80.	Studies on the effect of integrated nutrient Management on the growth parameters of Chrysanthemum cv. MDU-1.	Kumar, S., C. Sreedar., K., Sanjeevkumar, Ajishmuralidharan and S. Elakkuvan.	Plant archives. 19 (2): 2743-2746.	2019
81.	Postharvest treatment and vase life analysis of gerbera var. Arka krishika using different vase solutions	AjishMuraleedharan, K. Sha, S. Kumar and C. Praveen Sampath Kumar.	Journal of Emerging Technologies and Innovative Research. 6(6):654-657.	2019
82.	Response of gerbera flowers to different chemicals used for increasing the vase life	AjishMuraleedharan, K. Sha, R. Ebenezer Babu Rajan, C. Praveen Sampath Kumar and J. L. Joshi	Plant Archives. 19(1):593-595.	2019
83.	Response of Anthurium andreanum cv. tropical to different media and nutrients grown under shade conditions	AjishMuraleedharan, K. Sha, G. SamlindSujin, R. Ebenezer Babu Rajan, C. Praveen Sampath Kumar and J.L. Joshi	Plant Archives. 19(1):1121-1124.	2019
84.	Effect of plant growth regulators on rooting of bougainvillea cuttings ( <i>Bougainvillea glabra</i> )	S.Madhavan, K.Sha, S.Kumar, M.Gayathiri and S.Elakkuvan	Alochana chakra journal. 9(12): 153-157.	2020
85.	Effect of panchagavya on germination and seedling growth of balsam ( <i>Impatiens balsamina</i> ).	Kumar, S., Hariprabha, S., Kamalakannan, S., Sudhagar, R. and Sanjeevkumar, K.	Plant Archives. 20 (1): 3735-3737.	2020
86.	Effect of rooting hormone on rooting and survival of nerium ( <i>Nerium odorum</i> l.) var. pink single.	Kumar, S., Ajish Muraleedharan, Kamalakannan, S., Sudhagar, R. and	Plant Archives. 20 (1):3017-3019.	2020

		Sanjeevkumar, K.		
87.	Effect of nano silver, sucrose and citric acid on extending the vase life of cut carnation cv. Domingo.	Kumar, S., Srivarshini, H., Sanjeevkumar, K., AjishMuralidharan , Kamalakannan, S. and Sudhagar, R.	Plant Archives. 20, (2):3782-3784.	2020
88.	Effect of maleic hydrazide on growth, flowering and yield of nerium ( <i>Nerium odorum</i> L.) var. Rose single.	Kumar, S., Ajish Muraleedharan, Kamalakannan, S., Sudhagar, R. and Sanjeevkumar, K.	Plant Archives. 20 (2):9665-9668.	2020
89.	Influence of integrated nutrient management on growth and flower yield of tuberose ( <i>Polianthes tuberosa</i> L.) cv. Prajwal.	R. Sudhagar, M. Rajaselvam, S. Kamalakannan, S. Kumar and T. Uma Maheswari	Plant Archives. 20 (1): 2415-2418.	2020
90.	Effect of panchagavya on germination and seedling growth of balsam ( <i>Impatiens balsamina</i> ).	S. Kumar, S. Hariprabha, S. Kamalakannan, R. Sudhagar and K. Sanjeevkumar	Plant Archives. 20(1): 3735-3737.	2020
91.	Variability studies in seedling progenies of mango ( <i>Mangifera indica</i> L.)	CT .Sathappan and D.Dhanasekaran	Annals of Plant and Soil Research. 22(2): 156- 159.	2020
92.	Effect of different spice solutions on the shelf life extension of red banana stored at room temperature.	Venkatesan. S and Manesha	Pl. Archives. 20 supplement 1:1323-1326.	2020
93.	Effect of bio regulators on hastening the growth of mango rootstock.	Venkatesan. S and Yuvaraj. G	Pl. Archives. 20(2): 3826-3828.	2020
94.	Effect of bio regulators on hastening the growth and development of mango rootstock.	Venkatesan. S and Yuvaraj. G	Pl. Archives. 20(2): 4271-4274.	2020
95.	.. Studies on the effect of organic manures, Bio-stimulates and micronutrients on certain growth and physiological characters of Tuberose ( <i>Polianthus tuberosa</i> L.) cv. Prajwal	G.Sahana Priya, R.Sureshkumar, M.Rajkumar, R.Sendhilnathan and T.R. Bharathkumar	Plant Archives. 20(1):941-944.	2020

96.	Studies on the effect of organic manures, Bio-stimulates and micronutrients on certain growth and yield parameters of Tuberose ( <i>Polianthus tuberosa</i> L.) cv. Prajwal	G.Sahana Priya, R.Sureshkumar, M.Rajkumar, R.Sendhilnathan and T.R. Bharathkumar.	Plant Archives 20(1): 843-846.	2020
97.	Effect of VAM and Azotobacter on growth and yield characters of African marigold ( <i>Tagetes erecta</i> L.) cv. Poornima yellow.	S.Sivasankar, P.Ilakkiya, M.Rajkumar, R.Sureshkumar and R.Sendhilnathan	Plant Archives. 20 (1):1133-1136	2020
98.	Response of various rooting hormones on the rooting of rose cuttings.	Ajish Muraleedharan, K. Sha, G. Samlind Sujin, P.K. Karthikeyan, J.L. Joshi and C. Praveen Sampath Kumar	Plant Archives. 20 (2): 4578-4580.	2020
99.	Role of preservative chemicals on extending the vase life along with quality attributes of gerbera cut flowers.	Ajish Muraleedharan, K. Sha, S. Kumar, P.K. Karthikeyan, C. Praveen Sampath Kumar and J.L. Joshi	Plant Archives. 20(2): 4762-4764.	2020
100	Extending the vase life and quality of anthurium cut flowers by using chemical preservatives	Ajish Muraleedharan, K. Sha, S. Kumar, G. Samlind Sujin, C. Praveen Sampath Kumar and P.K. Karthikeyan.	Plant Archives. 20 (2): 4885-4888.	2020
101	Performance of anthurium plants to foliar application of organic nutrients in combination with gibberellic acid.	Ajish Muraleedharan, K. Sha, S. Kumar, S. Kousika, C. Praveen Sampath Kumar, J.L. Joshi and P.K. Karthikeyan.	Plant Archives. 20 (2):7567-7570.	2020
102	Influence of sea weed extract along with growth regulators on the growth, flowering and yield of	Ajish Muraleedharan, K. Sha, S. Kumar, G.	Plant Archives. 20 (2):1196-1199	2020

	anthurium plants.	Samhind Sujin, J.L. Joshi and C. Praveen Sampath Kumar		
103	Postharvest handling of <i>Anthurium andreanum</i> cut flowers using silver thiosulphate (STS).	Ajish Muraleedharan	Plant Archives 20, (Supplement 2): 1433-1435	2020
104	Response of orchid cut flowers as affected by floral preservatives on the postharvest quality	Ajish Muraleedharan, K. Sha, S. Kumar, G. Usha, P.K. Karthikeyan, C. Praveen Sampath Kumar and J.L. Joshi	Plant Archives 20, (Supplement 2): 1604-1607	2020
105	Growth regulator effects on the development and yield of <i>Anthurium andreanum</i> plants cv. Tropical.	Ajish Muraleedharan, K. Sha, G. Samhind Sujin, P.K. Karthikeyan, C. Praveen Sampath Kumar, J.L. Joshi and A.J. Nainu	Plant Archives 20 (Supplement 2): 4183-4186	2020
106	Effect of growing media and gibberellic acid on flowering and quality of Carnation ( <i>Dianthus caryophyllus</i> L.) cv. White liberty.	Rakshana, J. , R. Sendhilmathan*, M. Rajkumar, R. Sureshkumar and S. Sivasankar.	Plant Archives, 20(2): 6428-6432.	2020
107	Effect of growing media and gibberellic acid on growth and yield of Carnation ( <i>Dianthus caryophyllus</i> L.) cv. White liberty.	Sendhilmathan, R.* , J. Rakshana, M. Rajkumar, R. Sureshkumar and S. Sivasankar.	Plant Archives. 20 (2): 9525-9529.	2020
108	Performance of foliage ornamentals in hydroponic nutrient solutions	D.Dhanasekaran	Journal of Floriculture and Landscaping. 6: 09-13	2020
109	Performance Of Foliage Ornamentals on Different Nutrient Solutions Under Passive Hydroponic Vertical Culture	D.Dhanasekaran	Plant Archives. 20 (Supplement 1):3358-3364.	2020
110	Performance of spider plant ( <i>Chlorophytum comosum</i> ) in modular	D. Dhanasekaran, K. Ramya and	Annals of Plant and Soil Research	2020

	vertical green walls under various media and nutrients	CT.Sathappan	22(4): 410-414 (2020)	
111	weed management studies in bermuda grass ( <i>Cyanodon dactylon</i> ) cv. G2	Dhanasekaran, D and K.Sekar	Corn - The Journal of Floriculture, 8 (2) 51-55.	2020
112	Optimization of media and nutrition for foliage plants grown under modular vertical green walls.	Dhanasekaran,D, K.Ramya, S.Rameshkumar and CT.Sathappan	Journal of Ornamental Horticulture. 23 (1): 51-60	2020
113	Impact of various holding solutions on the quality and longevity of <i>Asparagus densiflorus</i> cv. 'sprengeri'.	Kumar, S., S. Hariprabha, S. Kamalakannan, G. Samlind Sujin and K. Sanjeevkumar	Annals of plant and soil research. Vol. 22(1): 50-54.	2020
114	Effect of chemical floral preservatives on extending vase life of gerbera ( <i>Gerbera jamesonii</i> h. Bolus).	Arunesh. A, Ajish Muraleedharan, K. Sha, S. Kumar, J.L. Joshi, Praveen Sampath Kumar and R. Ebenezer Babu Rajan	Plant Archives. 20 (Supplement1): 680-682.	2020
115	Studies on post harvest shelf life of tuberose ( <i>Polianthes tuberosa</i> ).	Kumar. S, Ajish Muraleedharan, S. Kamalakannan, S. Elakkuvan and R. Sudhagar	Plant Archives. 20 (Supplement 1): 3630-3633	2020
116	Effect of panchagavya on germination and seedling growth of balsam ( <i>Impatiens balsamina</i> )	Kumar. S, S. Hariprabha, S. Kamalakannan, R. Sudhagar and K. Sanjeevkumar	Plant Archives. 20 (Supplement 1): 3735-3737.	2020
117	Effect of rooting hormone on rooting and survival of nerium ( <i>Nerium odorum</i> L.) var. Pink single.	Kumar. S, Ajish Muraleedharan, S. Kamalakannan, R. Sudhagar and K. Sanjeevkumar	Plant Archives. 20(1): 3017-3019	2020
118	Influence of sea weed extract along with growth regulators on the growth, flowering and yield of anthurium plants	Ajish Muraleedharan, K. Sha, S. Kumar, G. Samlind Sujin, J.L. Joshi and C. Praveen Sampath Kumar	Plant Archives. 20(2): 1196-1199	2020

119	Effect of nano silver, sucrose and citric acid on extending the vase life of cut carnation cv. Domingo	Kumar, S., H. Srivarshini, K. Sanjeevkumar1, Ajish Muralidharan, S. Kamalakannan and R. Sudhagar	Plant Archives. 20(2): 3782-3784	2020
120	Efficacy of floral preservatives on physiological changes and keeping quality of cut carnation ( <i>Dianthus caryophyllus</i> L.) cv. Domingo	Kumar, S., H. Srivarshini, and S. Hari Prabha	Annals of plant and soil research. 22(3): 290-295.	2020
121	Effect of maleic hydrazide on growth, flowering and yield of nerium ( <i>Nerium odorum</i> L.) cv. Rose Single	Kumar. S, Ajish Muraleedharan, S. Kamalakannan, R. Sudhagar and K. Sanjeev Kumar	. Plant Archives. 20(2): 9665-9668	2020
122	Studies on the effect of different growing media on the growth and flowering of gerbera cv. Goliath	Arunesh. A, Ajish Muraleedharan, K. Sha, S. Kumar, J.L. Joshi , Praveen Sampath Kumar and Ebenezer Babu Rajan	Plant Archives. 20 (Suppliment 1):653-657	2020
123	Effect of chemical floral preservatives on extending vase life of gerbera ( <i>Gerbera jamesonii</i> h. bolus)	Arunesh. A, Ajish Muraleedharan, K. Sha, S. Kumar, J.L. Joshi , Praveen Sampath Kumar and Ebenezer Babu Rajan	Plant Archives. 20 (Suppliment 1): 680-682	2020
124	Performance of <i>Anthurium andreanum</i> to different growing media on flowering	Ajish Muraleedharan, K. Sha, S. Kumar, G. Samlind Sujin, J. L. Joshi and C. Praveen Sampath Kumar	Plant Archives. 20 (Suppliment 1):3738-3740.	2020
125	Rooting capacity of chrysanthemum cuttings by using different types of growing media	Ajish Muraleedharan, K. Sha, S. Kumar, J.L. Joshi and C. Praveen Sampath Kumar	Plant Archives. 20(1): 2502-2504	2020
126	Effect of organic inputs and mulching on growth and yield of roselle ( <i>Hibiscus sabdariffa</i> var. <i>Sabdariffa</i> ).	S.A. Sindhu Bharadhi, K. Haripriya and S. Kamalakannan	Annalus of Plant and Soil Research. 23(2): 219-222.	

127	Evaluation in different gladiolus ( <i>Gladiolus grandiflorus</i> L.) Varieties for spike and corm yield enhancement in coastal Tamil Nadu	Mary Ruby Shyla, R; Ramesh Kumar, S.;	Plant Archives. 21S1527-531	2021
128	Effect of organic manures and foliar application of fish amino acid on vegetative growth and dry matter production of african marigold ( <i>Tagetes erecta</i> L.)	Sivasankar, S; Ilakkiya, P; Rameshkumar, S; Muruganandam, C; Karthikeyan, PK;	Plant Archives. 2112535-2537	2021
129	Effect of organic manures and foliar application of fish amino acid on yield and quality parameters of african marigold ( <i>Tagetes erecta</i> L.)	Sivasankar, S; Ilakkiya, P; Rameshkumar, S; Muruganandam, C; Karthikeyan, PK;	Plant Archives. 2112532-2534	2021
130	Effect of gypsum and micronutrients on spike and corm yield of gladiolus ( <i>Gladiolus grandiflorus</i> ) cv. Guvari.	Shyla, R; RUBY, MARY; Rameshkumar, S;	Crop Research. (0970-4884)56	2021
131	Effect of organic inputs and mulching on growth and yield of roselle ( <i>Hibiscus sabdariffa</i> var. <i>sabdariffa</i> ).	Sindhu bharadhi, S. A., Haripriya, K. and Kamalakannan, S.	Annals of Plant and Soil Research. 23(2): 219-222.	2021
132	Evaluation of sunflower genotypes ( <i>Helianthus annuus</i> L.) as bedding plants in the coastal ecosystem	B. Pamela Elisheba and R. Sudhagar	Plant Archives, 21 (Supplement 1): 2519-2524.	2021
133	Growth manipulation in ornamental sunflower ( <i>Helianthus annuus</i> ) cv. Ring of Fire as a bedding plant	B. Pamela Elisheba and R. Sudhagar	Crop Research, 56 (1 & 2): 30-36.	2021
134	Screening of sunflower genotypes ( <i>Helianthus annuus</i> L.) as bedding plants in the coastal ecosystem	B. Pamela Elisheba and R. Sudhagar	Research Journal of Agricultural Sciences, 12(2): 428-432.	2021
135	Extending post-harvest life and keeping quality of gerbera ( <i>Gerbera jamaesonii</i> ) var. Red Torrossa using pulsing and preservative solutions	M. Irfana Farwin, D. Dhanasekaran, CT .Sathappanand J. Padmanaban	Journal of Ornamental Horticulture 24(1); 63-68,	2021
136	Effect of organic manures and foliar application of fish amino acid on	S.Sivasankar, P.Ilakkiya, S.Rameshkumar,	Plant Archives	2021

	vegetative growth and dry matter production of African marigold ( <i>Tagetes erecta</i> L.)	C.Muruganandam		
137	Influence of organic nutrients and bio regulators on certain growth and flower quality attributes of Celosia ( <i>Celosia cristata</i> L.)	R. Sendhilnathan*, E. Balaraman, M. Rajkumar, R. Sureshkumar and T.R. Barathkumar	Plant Archives 21 (Supplement 1): 2220-2223.	2021
138	Weed Management in Tropical Turf Established with Bermuda Grass ( <i>Cynodon dactylon</i> (L.) Pers. X <i>Cynodon transvaalensis</i> L.)	D Dhanasekaran	Research Journal of Agricultural Sciences, 12(3)	2021
139	Extending post harvest life and keeping quality of gerbera ( <i>Gerbera jamaesonii</i> ) var. Red Torrossa using pulsing and preservative solutions	M. Irfana Farwin, D. Dhanasekaran, C.T. Sathappan and J. Padmanaban	Journal of Ornamental Horticulture 24(1); 63-68,	2021
140	Effect of micronutrient on growth of crossandra ( <i>Crossandra infundibuliformis</i> L.) cv. Delhi	Lenin .A .R, Rizwana Begum, Kalaiselvan .S and Kannan .R	International Journal of Botany Studies. 6(6): 68-71.	2021
141	Effect of micronutrient on yield of crossandra ( <i>Crossandra infundibuliformis</i> L.) cv. Delhi	Lenin .A .R, Rizwana Begum, Kalaiselvan .S and Dhanasekaran .D	International Journal of Botany Studies. 6(5): 1092-1095.	2021
142	Response of orchid cut flowers as affected by floral preservatives on the postharvest quality.	Ajish Muraleedharan, K. Sha, S. Kumar, G. Usha, P.K. Karthikeyan, C. Praveen Sampath Kumar and J.L. Joshi.	Plant Archives. 21: (Supplement 1): 1825-1829	2021
143	Response of plant growth regulators on the growth, flowering and yield attributes of african marigold ( <i>Tagetes erecta</i> L.)	Kousika. S, Ajish Muraleedharan, K. Sha, P.K. karthikeyan, C. Praveen Sampath Kumar, J.L. Joshi and A.J. Nainu.	Plant Archives. 21(1): 644-647	2021
144	Postharvest Quality of Goldenrod Cut Flowers on Different Vase Solutions Cv. Tara Gold.	Ajish Muraleedharan, C. Praveen Sampath	Res. Jr. of Agril. Sci. 12(5): 1829-1832	2021

		Kumar and J. L. Joshi.		
145	Effect of Pulsing with Sucrose in Prolonging the Vase Life of Goldenrod Flowers.	Vinodhini G, Ajish Muraleedharan, P. K. Karthikeyan, J. L. Joshi and C. Praveen Sampath Kumar.	Res. Jr. of Agril. Sci. 12(6): 2120-2123	2021
146	Synergistic effect of nitrogen, phosphorus, potassium and zinc on ornamental sunflower ( <i>Helianthus annuus</i> L.) CV. 'Ring of fire' as bedding plants	B. Pamela Elisheba and R. Sudhagar	International Journal of Botany Studies. 7(1): 411-415.	2022
147	Effect of Different Chemicals on the Postharvest Life and Quality of Goldenrod ( <i>Solidagocanadensis</i> ).	Vinodhini G, Ajish Muraleedharan, J. L. Joshi and C. Praveen Sampath Kumar.	Res. Jr. of Agril. Sci. 13(2): 383-388	2022

#### Workshop/Symposium/Webinars organized from 2017-2022

S.No	Title of the Programme	Name of the Faculty	Date
1.	Workshop on Roof Garden	Dr. R. Sudhagar Dr. S. Venkatesan Dr. T. Uma Maheswari	2 <sup>nd</sup> & 3 <sup>rd</sup> February 2018
2.	National workshop on BHUVAN Geo portal for Precision farming	Dr. S. Venkatesan Dr. R. Sudhagar	8 <sup>th</sup> January 2019
3.	National symposium on Horticulture in the Vanguard of climate change and urban environment	Dr. R. Ramesh Kumar Dr. D. Dhanasekaran Dr. CT. Sathappan	7 <sup>th</sup> & 8 <sup>th</sup> February 2019
4.	Webinar on Recent advances in the improvement of cucurbitaceous vegetables and Bhendi	Dr. S. Kamalakannan	11 <sup>th</sup> & 16 <sup>th</sup> July 2020
5	Webinar on Emerging trends in temperate fruit production	Dr. CT. Sathappan	12 <sup>th</sup> & 13 <sup>th</sup> July 2020

6	Webinar on Strategies to combat recent challenges in Floriculture Industry	Dr. S. Rameshkumar Dr. D. Dhanasekaran	18 <sup>th</sup> July 2020
7	Webinar on Landscape tools for smart societies	Dr. S. Rameshkumar Dr. D. Dhanasekaran	19 <sup>th</sup> July 2020
8	Webinar on New normal in floriculture	Dr. S. Rameshkumar Dr. D. Dhanasekaran	23 <sup>rd</sup> July 2020
9	Webinar on Recent advances in strawberry production	Dr. CT. Sathappan Dr. D. Dhanasekaran	24 <sup>th</sup> July 2020
10	Webinar on Research Advances in kiwi production	Dr. CT. Sathappan Dr. D. Dhanasekaran	31 <sup>st</sup> July 2020
11	Webinar on Health foods from fruits and vegetables – An Imminent need	Dr. CT. Sathappan Dr. D. Dhanasekaran	1 <sup>st</sup> August 2020
12	Webinar on Banana - Fruit for Nutritional and livelihood security	Dr. R. Sendhilnathan Dr. S. Sivasankar	2 <sup>nd</sup> August 2020
13	Webinar on Annona – The super fruit of 21 <sup>st</sup> century	Dr. R. Kandasamy Dr. E. Arivazhagan	3 <sup>rd</sup> August 2020
14	Webinar on Nutraceuticals from flower crops	Dr. S. Rameshkumar Dr. N. Dhamodharan	4 <sup>th</sup> August 2020
15	Webinar on Flower seed production - challenges and opportunities	Dr. S. Rameshkumar Dr. D. Dhanasekaran Dr. CT. Sathappan	5 <sup>th</sup> August 2020
16	International workshop on Naunces in Floriculture industry ( <a href="#">Webinar 1.pdf</a> )	Dr. S. Sivasankar	6 <sup>th</sup> September 2021
17	International workshop on Naunces in landscape industry ( <a href="#">Webinar2.pdf</a> )	Dr. S. Rameshkumar Dr. CT. Sathappan Dr. D. Dhanasekaran	13 <sup>th</sup> September 2021
18	International workshop on Naunces in Post harvest horticulture ( <a href="#">Webinar3.pdf</a> )	Dr. CT. Sathappan	20 <sup>th</sup> September

		Dr. J. Padmanaban Dr. D. Dhanasekaran	2021
19	National work shop - Emerging trends in production and processing of guava ( <a href="#">Webinar 4.pdf</a> )	Dr. S. Kamalakannan Dr. S. Kumar	25 <sup>th</sup> September 2021
20	International workshop - Opportunities and challenges in horticultural technologies ( <a href="#">Webinar 5.pdf</a> )	Dr. A. Anburani Dr. C. Muruganandam Mr. S. Elakkuvan Dr. R. Rajeswari	30 <sup>th</sup> September 2021
21	International Virtual conference - Startups in Horticulture Industry (SUHI - 21) ( <a href="#">Webinar 6.pdf</a> )	Dr.R.Sendhinathan Dr. M. Rajkumar Dr. P. Madhana Kumari	20 <sup>th</sup> October 2021
22	International Virtual Workshop - Scope and opportunities in plantation crops (SOPC - 21) ( <a href="#">Webinar 7.pdf</a> )	Dr.R.Kandasamy Dr. E. Arivazhagan Dr. A. R. Lenin	27 <sup>th</sup> October 2021
23	International Virtual conference - Innovative trends in horticulture production (ITHP - 21) ( <a href="#">Webinar 8.pdf</a> )	Dr.R.Suresh Kumar Dr. T.R. Barathkumar Dr. T. Uma Maheswari	29 <sup>th</sup> October 2021
24	National Virtual workshop - Procurement, processing and product promotion in horticulture crops ( <a href="#">Webinar 9.pdf</a> )	Dr.R.Sudhagar Dr. S. Venkatesan Dr. M. Gayathiri	16 <sup>th</sup> November 2021
25	International Virtual conference - Healthy horticulture for wealthy environment (file:///H:/webinar/Webinar%2010.pdf)	Dr.S.Kamalakannan Dr. S. Kumar Dr. R. Rajeswari	18 <sup>th</sup> November 2021

#### Awards/Recognitions from 2017 to 2022

S. No	Name of the faculty	Awards
1.	Dr. K. HariPriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit

		Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	<ol style="list-style-type: none"> <li>1. Subject matter Specialist in selection committee, ICAR-National Research Centre for Banana Trichirapalli. 09.04.2021</li> <li>2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 22.06.2021</li> <li>3. External expert member, expert committee for restructuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021</li> <li>4. Board of studies in Agriculture - (GRI), Gandhigram Rural Institute, Gandhigram, Dindigul. 2021-2024</li> <li>5. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019</li> </ol>
3	Dr. A. Anburani	<ol style="list-style-type: none"> <li>1. APSI Honours award by Academy in Plant Sciences, India.</li> <li>2. Best oral presentation award at international symposia, Hyderabad.</li> </ol>
4	Dr. S. Anuja	<ol style="list-style-type: none"> <li>1. Received best paper award, Annamalai University.</li> <li>2. Received certificate of achievement award.</li> </ol>
5	Dr. S. Rameshkumar	1. Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu
6	Dr. J. Samruban	1. 1 <sup>st</sup> poster presentation award in 9 <sup>th</sup> Indian Horticulture congress 2021, Kanpur
7	Dr.R.Kandasamy	1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry
8	Dr. CT. Sathappan	1. Fellow of National Gladiolus Trust.
9	Dr. S. Venkatesan	<ol style="list-style-type: none"> <li>1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Utterpredesh, India. On the occasion of International Conference on GRISAAS- 2019</li> <li>2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Utterpredesh, India. On the occasion of International Conference on GRISAAS- 2019.</li> <li>3. Best Horticulturalist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India.</li> </ol> <p>At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on</p>

		<p>October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>4. Best oral presentation Award- 3<sup>rd</sup> National Conference on Promoting &amp; Reinvigorating Agri - Horti, Technological Innovations (24<sup>th</sup>&amp; 25<sup>th</sup> December, 2019) held at Danbad Jharkhand, India.</p> <p>5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment(VOICE) &amp; Pondicherry Institute of Agricultural Sciences( PIAS ) in Association with Murray State University, USA. Supported by Centre for Environment &amp; Agricultural Development(CEAD)- 2020</p> <p>6. Excellence in Research award-3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI ), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>8. Best Horticulturist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</p> <p>10. Best Poster Award- Two days DST PURSE - II Sponsored National conference on “Transforming Agricultural Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 &amp; 22, 2022.</p>
10	Dr. T. R. Barath Kumar	<p>1. PRAGATI, Organizing Committee, Dhanbad, Jharkhand, India. 2017</p> <p>2. TECHSEAR, Organizing Committee, ICAR-IIRR-</p>

		<p>Rajendranagar, Hyderabad, India. 2017</p> <p>3. Endling conferences society, ICFA-2018, Pune, Maharashtra, India. 2018</p> <p>4. NSPOFED, Organizing Committee, School of agriculture and animal sciences, Gandhigram rural institute-Deemed to be University, Gandhigram, Dindigul, Tamil Nadu, India. 2019.</p> <p>5. Astha foundation (Meerut,U.P) &amp; Organizing Committee GRISAAS, ICAR, NAARM, Rajendranagar, Hyderabad, Telangana, India. 2019.</p> <p>6. ICEACBS, Organizing Committee, VOICE, PIAS, Murray State University (USA) and CEAD Puducherry, India. 2020.</p> <p>7. "3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)" Ranchi, Jharkhand. 2022</p> <p>8. "3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)" Ranchi, Jharkhand. 2022</p>
11	Dr. R. Sendhilnathan	<p>1. Awarded Best poster presentation. in 21<sup>st</sup> century (NSPOFED -in 21<sup>st</sup> century. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of agriculture and animal sciences, Gandhigram Rural Institute, Dindigul.</p> <p>2. Excellence in Research award for outstanding contribution in the field of "Floriculture and landscape gardening" at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019 at ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India.</b></p> <p>3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.</p>
12	Dr. S. Madhavan	<p>1. Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources</p>
13	Dr. P. Madhana Kumari	<p>1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry</p> <p>2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.</p>
14	Dr. T. Uma Maheswari	<p>1. Best oral presentation award- AIASA, 2020</p>

		2. Best women scientist award- ICEACBS, Puducherry, 2020
15	Dr. D. Dhanasekarn	1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018) 2. Best Oral Presentation IInd Prize, NABS Conference, Pondicherry (2019) 3. Young Scientist Award, National Gladiolus Trust (2020) 4. Best Oral Presentation, IIIrd Prize, First NABS (2021) 5. Best Oral Presentation IInd Prize, 7th National Youth Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA, TNAU & ICAR, Coimbatore, 24-25 March, 2022
16	Dr. S. Kumar	1. Best oral presentation award- 3 <sup>rd</sup> ICFAI, Jharkhand. 2. Excellence in teaching award- ICEACBS, Puducherry, 2020
17	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
18	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry
19	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy - 2019. Thangavur. 2. Best faculty award in horticulture - CNRTSPA 2019-William research award, Kanyakumari

#### Abroad Visits

S. No	Name of the Faculty	Country visited & year	Purpose of visit
1.	Dr. R. Suresh Kumar	Thailand (2018)	International Conference of Food Agriculture and Innovation (ICFAI)
2.	Dr. J. Padmanaban	Switzerland (2019) Italy (2019) France (2019)	Academic collaboration with Tamil education Development council (TEDC)

#### Details of Project (2017-2022)

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Type	Funding Agency
1.	2019-2021	Dr. P. Karuppaiah (PI)	Doubling the farmers income	8.0	Govt.	Indian Council of Social Science

			through protected cultivation technology – An economic evaluation study in Tamil Nadu.			Research
2.	2017-2018	Dr. S. Rameshkumar (PI)	As PI : Evaluation of Picoxystrobin 22.52% w/w SC against Powdery mildew and Downy mildew of Grapes	1.50	Non-Govt.	M/S. Bharat Rasayan
3.	2017-2019	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	4.42	Non-Govt.	M/S. T Stanes & Co
4.	2018-2020	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Effect of Active ORG on the nutrient availability, growth, metabolism and yield of <i>Lycopersicon esculentum</i> Mill.	1.36	Non-Govt.	M/S. T Stanes & Co
5.	2021-2022	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Evaluation of bio efficacy of Dr.ROOT on the yield of Onion –PI	1.56	Non-Govt	M/S. T Stanes & Co
6.	2021-2022	Dr. S. Rameshkumar (PI)	As PI : Technology Dissemination Project for “Tree transplantation in Thenkasi to Thirunelvel Highway Extension Site”	1.18	Non-Govt	P & C Projects (P) Ltd.
7.	2018-2019	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Bio – efficacy of Nano nutrients on growth and yield of capsicum	3.88	Co-op. Govt.	IFFCO, Chennai
8.	2020-	Dr. J. Sam Ruban (PI)	Effect of Nano DAP	4.88	Co-op.	IFFCO, Chennai

	2023	Dr. M. Rajkumar (Co-PI)	on vegetable cowpea		Govt.	
9.	2019-20	Dr. M. Rajkumar (PI) Dr. J. Sam Ruban (Co-PI)	Evaluation of bio-efficacy of crop tiger on Banana	2.50	Private	PEPTECH, Bioscience limited, New Delhi
10.	2022 onwards	Dr. R. Kandasamy (PI), Dr. E. Arivazhagan (Co-PI) and Dr. C. Kathirvelu (Co-PI)	Efficacy of Bio-stimulants, Zymgold Liquid, Armurox, Equilibrium, Terrasorb Complex and Zym gold Plus Granules with respect to yield, yield attributing factors and crop safety on tomato crop	8.82	Non. Govt	Godrej Agrovet Ltd., Mumbai
11	2017-2019	Dr. RM. Kathiresan and Dr. CT. Sathappan	As Associating scientist in "Annamalai rice+fish+poultry farming system for improving nutrition and livelihoods of small farmers in Nepal	120.00	Research and Extension	IKP-KP & USAID
12.	2018-2021	Dr.RM.Kathiresan and CT. Sathappan (Associating Scientist)	As an Associating Scientist In "Agronomic Integration of Technologies for Productivity Management and Optimal Water Use In Wetlands of Cauvery River Delta"	209.00	Govt.	DST- Mission mode
13.	2022-24	Dr. C. Kathirvelu (Principal investigator) Dr. S. Venkatesan and	Bio- efficacy and Phytotoxicity and Compatibility of	5.52	Non Govt	M/S Parijat Industries Limited, New Delhi.

		Dr. K. Suseendran (Co Principal investigator)	PIPL 100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crop on various growth parameters			
14.	2018-2020	Dr.P.Sudhagar(PI) Dr.R.Sureshkumar(Co-PI)	Efficacy of LAATU premium(Gibberellin acid 0.001%) as plant growth regulator and yield of Tomato(Co-PI)	3.00	Pvt.	Sumitomo Chemicals Pvt.Ltd, New Delhi
15.	01.07.2018 to 30.06.2020	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy and Phytotoxicity of homobrassinolide 0.04% EC in Paddy, Groundnut and Tomato	9.00	Non Govt.	m/s Godrej Agrovet Ltd, Mumbai.
16.	July 2018 to December 2019	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio-efficacy of new herbicide clethodim 12% EC for controlling grassy weeds in cotton, onion and soyabean and its phytotoxicity effect on succeeding crops	7.50	Non Govt.	Deccan fine (Chemicals) India Pvt. Ltd. Hyderabad, Telengana
17.	December 2018 to December 2021	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy toxicity evaluation of Glutathione Ammonium 13.5% against weed flora in grapes and its effect on succeeding crops .	13.33	Non Govt.	M/S UPL.Pvt.ltd, Mumbai.
18.	January 2020 to June 2022	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio - efficacy and phytotoxicity of Flumioxazin 50 % SC against major weeds in tea and non- cropped area and its effect on	5.46	Non Govt.	M/S. Sumitomo chemical India Ltd. Mumbai NON GOVT

			succeeding crops for two seasons			
19.	December 2019 to May 2020	Dr.M.Rajkumar - PI Dr. J. Samruban (Co-PI)	Evaluation of Bio - efficacy of growth enhance formulations and their effect on Onion, Rice and Chilli	2.27	Non Govt.	Agri solutions Pvt.Ltd. Nashik
20.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of studies on Bio-Efficacy of evaluation of the bio-stimulant- Gaxy on cotton and grape and opteine on soybean and ground nut and pilatus on tomato.	10.50	Non Govt.	M/S UPL.Pvt.Ltd. Mumbai.
21.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy of evaluation of Bio-Stimulant macarena on soybean, tomato, cotton and Brique on chilli and tomato.	10.50	Non Govt.	M/S.UPL.Pvt, Mumbai.
22.	February 2022 to February 2024	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy and phytotoxicity evaluation of SIAPTION 101 on growth, yield and quality of grapes for 2 season.	2.275	Non Govt.	M/s Jivagro Ltd.
23.	2018 - 2020	Prof.Rm.Kathiresan (PI) Dr.J.Padmanaban (Assoc. staff)	Agronomic Integration of Technologies for productivity management & Optimal Water Use in Wetland of Cauvery 35River	67.00	Govt.	DST, New Delhi

			Delta			
24.	2021-2022	Dr.J.Padmanaban (PI) Dr.S.Manimaran (Co-PI)	Evaluation of Bio-stimulants: Top-up Gold (Granules) / Enhancer (Liquid) in Paddy	3.75	Non Govt.	Plantgene Biological Pvt. Ltd., Trichy
25.	2021-2024	Dr.S,Kanagarajan (PI) Dr.J.Padmanaban(Co-PI)	Testing of new insecticide: Evicent 45 WG against Thrips and capsule borer in Cardamom	10.00	Non Govt.	Syngenta India Ltd., CBE
26.	October 2021 to September 2024	Dr. T. Uma Maheswari (Co-PI) Dr.R.Kanagarajan (PI)	Evaluation project: Testing of new insecticide SPID + ACET 54 WG against Tea pests	5.00	Non Govt.	M/S SYNGENTA India Ltd., Coimbatore
27.	February 2022 to July 2024	Dr. T. Uma Maheswari-PI Dr.R.Kanagarajan (Co-PI)	Effective utilization of agricultural green waste in biosolarization as an innovative approach for ecofriendly cultivation of tomato ( <i>Solanumlycopersicum</i> l)	10.13	Govt.	RUSA 2.0-R&I
28.	2022-24	Dr. S.Babu (PI) Dr. D.Dhanasekaran (Co-PI)	Bioefficacy trail of Glyphosate 41 % SL IPA Salt as a post emergence herbicide against grassy weeds, broad leaf weeds and sedges existing in the trail lot of tomato and mango orchard	9.60	Trail	Crystal Crop Protection Ltd., New Delhi
29.	2022-24	Dr. C.Kathirvelu (PI) Dr. D.Dhanasekaran (Co-PI)	Climate Resilience on Butterfly fauna of coastal areas of Tamilnadu and establishing Butterfly garden at Annamalai university Gardens	5.06	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme

30.	2022-24	Dr. D.Dhanasekaran (PI) Dr. CT.Sathappan, Dr. M.Govindarajan and Dr. G.Senthilkumar	Phyto-remediation of Indoor pollution through ornamental plants with various horticultural modules for improving health and urban environment.	10.13	Govt.	RUSA 2.0 Research and Innovation- Health and Environment scheme
<b>Total Amount</b>				<b>57.04</b> <b>(Rupees</b> <b>in</b> <b>lakhs)</b>		

#### 6.4.3. Technical and Supporting Staff

The following technical and supporting staff members in the Department are helping in academic, research and administrative activities.

Sl.No.	Sanctioned posts	Staff in place	Responsibility
1	Secretarial staff (ASO-1, Helper-2)	3	Assisting administrative work Maintenance of office files and official records
2	Technical staff (Orchard manager- 1, DGS-1, and DFS- 2)	4	Assisting in orchard operations, field trials, farm record maintenance, sale proceeds, supervision of labourers, execution of purchase and settlement of bills and recording of trial observations. DTP works, data processing and documentation
3	Farm workers /Gardeners	22	Layout of field trials and farm operations.

#### 6.4.4. Classrooms and Laboratories

##### I. PARTICULARS OF INSTRUCTIONAL UNITS IN THE DEPARTMENT

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)	SEATING CAPACITY
1.	HOD Room	320 sq.ft	1
2.	Office Room	240 sq.ft	4
3.	PG Class Room 1	320 sq.ft	15

4.	PG Class Room 2	640 sq.ft	40
5.	PG Class Room 3	720 sq.ft	40
6.	PG Class Room 4	420 sq.ft	15
7.	Ph.D Class Room 1	640 sq.ft	15
8.	Ph.D Class Room 2	320 sq.ft	15
9.	Laboratory (PG/Ph.D)	640 sq.ft	15
10.	Staff Room 1	320 sq.ft	4
11.	Staff Room 2	400 sq.ft	5
12.	Staff Room 3	640 sq.ft	12
13.	Staff Room 4	100 sq.ft	5
14.	Staff Room 5	120 sq.ft	5
15.	Staff Room 6	100 sq.ft	1
16.	Staff Room 7	320 sq.ft	1
17.	Staff Room 8	320 sq.ft	1
18.	Postharvest lab (UG) (Distillation unit, Dehydrator, Pulper, Sealer and Mixer machine)	1333 sq.ft	40

**List of equipments available**

<b>S.No</b>	<b>Name of the Equipment</b>	<b>Equipment available in the department</b>
1.	Weighing balance (0.001)	1

2.	Weighing balance (0.01)	3
3.	Weighing balance (200 g)	2
4.	Weighing balance 60 kg (30 kg)	1
5.	Distillation unit	2
6.	pH meter	4
7.	EC meter	2
8.	Hand refractometer	5
9.	Digital vernier calliper	2
10.	Deep freezer vertical (-20°C, 275 l)	1
11.	Thermocycler unit	1
12.	Gel documentation unit	1
13.	Stereo zoom microscope	1
14.	Compound microscope	4
15.	Hot air oven	1
16.	Dehydrator	2
17.	Magnetic stirrer (5 l)	3
18.	Micro wave oven (25 l)	2
19.	Refrigerator (320 l)	3
20.	Water bath with shaker (20 l)	1
21.	UV spectrophotometer	1
22.	Refrigerated centrifuge	1
23.	Vertical gel unit (dual unit max)	1
24.	Horizontal gel unit (medium)	1
25.	Power pack (small)	1
26.	Micropipette (10 $\mu$ -l, 100 $\mu$ -l, 200 $\mu$ -l, 1000 $\mu$ -l)	1
27.	Laminar air flow chamber	1

28.	Digital thermometer and hygrometer	5
29.	Autoclave (vertical) 250l	1
30.	Nitrogen distillation unit	1
31.	Air conditioner (2 tonnes)	4
32.	Online UPS (10 volts)	1
33.	Digital camera (14 mph)	1
34.	Vortex	1
35.	Hot plate	2
36.	Soxhlet Apparatus	2

## II. PARTICULARS OF INSTRUCTIONAL UNITS IN ORCHARD

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Orchard	5.66 hectare
2	Shade house	1650 sq.ft
3	Nursery	3634 sq.ft
4	UG practical class Room-III	1196 sq.ft
5	UG practical class Room-IV	1196 sq.ft
6	Class Room 1 (UG)	560 sq.ft
7	Field lab (PG/Ph.D)	380 sq.ft
8	Display / UG class room-2	380 sq.ft
9	Farm manager office	200 sq.ft
10	Tractor Shed	380 sq.ft

11	Store room	936 sq.ft
12	Implement shed	216 sq.ft
13	Threshing yard	900 sq.ft
14	Seed processing and storage unit	125 sq.ft
15	Farm fencing	1.05 km

### III. PARTICULARS OF INSTRUCTIONAL UNITS IN FLORICULTURE AND MEDICINAL PLANTS AREA

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Floriculture and medicinal plants Unit	1.41 hectare
2	Vermicompost shed	450 sq.ft
3	NVP house 1	418 sq.ft
4	NVP house 2	418 sq.ft
5	NVP house 3	1071 sq.ft
6	Shade house	150 sq.ft
7	Mist chamber	216 sq.ft
8	Poly house	2640 sq.ft

#### 6.4.5. Conduct of Practical and Hands-on-Training

Hands- on -training is given to students during classes:

- Training to diagnose cultivation problems in flower crops.
- CAD training is given to students in the CAD lab available at computer science department.
- Special training for manual drafting techniques is given.
- Exposed to special google tools and designing software for landscape designing and site analysis.

Field visits/ visit to renowned institutes, industries, progressive farms etc,

Field visits are arranged for the students to

- Various research stations for acquainting knowledge on different crop management aspects, germplasm conservation and various research activities.
- Small scale Industries for value addition in flower crops.
- Organic product outlets to learn about organic certification and market price.
- Start up entrepreneurs on various horticultural aspects including cut flower industries and landscape companies.
- Central institutions on various aspects related to horticulture.
- Progressive farmers' fields to learn about the adoption of technologies.

#### 6.4.6. Supervision of students in Ph.D. Programme

Each Ph.D. scholar shall have a Research Advisory Committee (RAC) to guide the scholar in carrying out his/her programme.

RAC consists of Professors not fewer than four with the Supervisor as Chairperson. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director DARE for information.

RAC will discuss, advice and recommend on all matters connected with the scholar's research from admission till the submission of the thesis. Approve the topic of research and the synopsis. Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D. If necessary, recommend and approve change of title of dissertation/ thesis and change of Research Supervisor. Conduct and supervise the presentation by the candidate of the final draft of his/her proposed thesis for approval before the submission of synopsis of the thesis to the University and to give a certificate to this effect to be submitted along with the synopsis. The Research Advisory Committee will meet every semester. To scrutinize the research proposal / progress report submitted by the research scholar. To assess the conduct of experiments/field work, peruse laboratory notebooks, data recording, analysis, and publication. To review and endorse the annual progress report of the research scholar. To approve the synopsis of the thesis. The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department.

#### Students Teacher Ratio

S.No	Number of recognized Teacher for Ph.D. guidance	Academic year	Intake of students	Students Teacher Ratio
1.	33	2017-18	2	1:16.5
2.	33	2018-19	1	1:33
3.	33	2019-20	3	1:11

4.	33	2020-21	2	1:16.5
5.	33	2021-22	3	1:11

#### 6.4.7. Feedback of stakeholders

Constant feedback is obtained from the stakeholders as given below.

**Students:** The feedback about the curriculum and teaching methodology are obtained from the students every semester after completing the course. These comments were reviewed and considered while revising the syllabus. Department uses the feedback for enhancing the audio-visual aids, advanced laboratory equipment's and e- journals. Apart from this the mentor-mentee system enables the teachers to obtain constant feedback from students.

**Employers, those who come for campus placements:** Based on the feedback from employers, skill development and personality development programmes are conducted in addition to regular curriculum content.

**Farmers:** Feedback is regularly obtained during Farmers Day, field visits, and field trials.

**Industries:** Quality sustenance and quality enhancement measures in curriculum development process is done by restructuring the course contents based on requirement prescribed by the industry people during our industrial visits.

**Entrepreneurs:** Based on the feedback from entrepreneurs, the contents for skill development and personality development programmes are decided and implemented.

**Govt. officials:** Feedback obtained from Government officials are included during the revision of courses for PG research programmes.

#### Action taken:

- In the year 2019-20 the students expressed their differently in clearing MOOC-Swayam, NPTEL. Accordingly resolution was passed to have Topical Research course instead of MOOC. Which was passed through Faculty board.
- Number of field visits were increased learning production technologies.
- Vale added courses are offered to students.
- Laboratory timing are extended even during holidays for the access of the students.
- Coaching for TNPSC (ADH) were conducted.

#### 6.4.8. Student intake and attrition in the programme for last five years Ph.D. (Hort.) Floriculture and Landscaping

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
2	1	3	2	3	--	--	--	66.66 %	--

**List of Ph. D. (Hort.) Floriculture and Landscaping thesis - submitted 2017 - 2022**

S.No	Name of the guide	Name of the students	Year of submission	Title of the research
1.	Dr.R.Sudhagar	B.Pamela Elisheba	2022 (Awarded)	Standardisation of production technology of ornamental sunflower ( <i>Helianthus annuus</i> ) as bedding plants in the coastal system
2.	Dr.S.Ramesh Kumar	R.Mary Ruby Shyla	2022	Studies on varietal evaluation and crop management practices for spike and corm yield enhancement in Gladiolus ( <i>G.grandiflorus.L.</i> ) For coastal Tamilnadu
3.	Dr.K.Manivannan	V.Thirumalmurugan	2022	Standardaziation of agro techniques for African marigold ( <i>Tagetes erecta</i> )

**Employment Details**

Name of the Student	Academic year of completion of degree	Name of the institute if joined in Ph.D.	Employment details			
			Central Govt.	State Govt.	Name of the Company	Entrepreneur
B.Pamela Elisheba	2022	-	-	-	Indian Agriculture college, Trinelvei	-
R.Mary ruby shyla	2022	-	-	-	PGP College of Agricultural Sciences, Namakkal.	-

## NET qualified details

Floriculture and Landscaping				
S.NO.	Academic Year	Name of the Candidate	Roll number	Year of passing
1.	2018-19	G.Indhumathi	5091111757	2020
2.	2020-21	S.Hariprabha	5011116027	2020
3.	2020-21	M. Ameaga	4111105866	2021
4.	2020-21	S.Sivabalan	4111105565	2022
5.	2020-21	Z.Rizwana Begum	4091105590	2021
6.	2022-21	G. Usha	4131105300	2021

## Salient research achievements of the Department

- Developed technologies for reviving Neyveli Mine Spoil ecosystem by growing ornamental plants and avenue trees
- Provided tree transplantation technology and consultancy services for Tenkasi to Thirunelveli Highway expansion project and successfully transplanted 1800 avenue trees with a success rate of 90% survival.
- Technology standardization for establishment of butterfly garden in coastal condition
- Phytoremediation technology to combat indoor air pollution.
- Standardized post harvest treatments to improve the vase life and quality of flowers and foliages Viz., Gerbera, Carnation, Gladiolus, Tuberose, Asparagus, Jasmine, goldenrod, and Heliconia
- Standardized foliar application of micro nutrition, growth regulators, and bio-stimulants to improve the growth and flower yield of floriculture crops Viz., Marigold, Phyllodendron, Flowering annuals, Gomphrena, Gaillardia, Tube rose, jasmine, chrysanthemum, Carnation, Crossandra, China Aster, Gerbera, rose, and Dracena.
- Studied the influence of silver nano particles on the shelf life of flower crops
- Studied the influence of nano nutrients on growth and yield of flower crops
- Standardized organic inputs for yield maximization in flower crops
- Standardized growing media and hydroponic nutrition composition for growing ornamental plants in vertical green wall module
- Standardized growing media composition and developed a do-it-yourself tray module for nursery production of lawn grass.
- Identified gladiolus varieties suitable for growing in coastal tract and standardized package of practices for quality improvement in spikes and coms
- Standardized production technologies for ornamental sunflower, African marigold and Gerbera

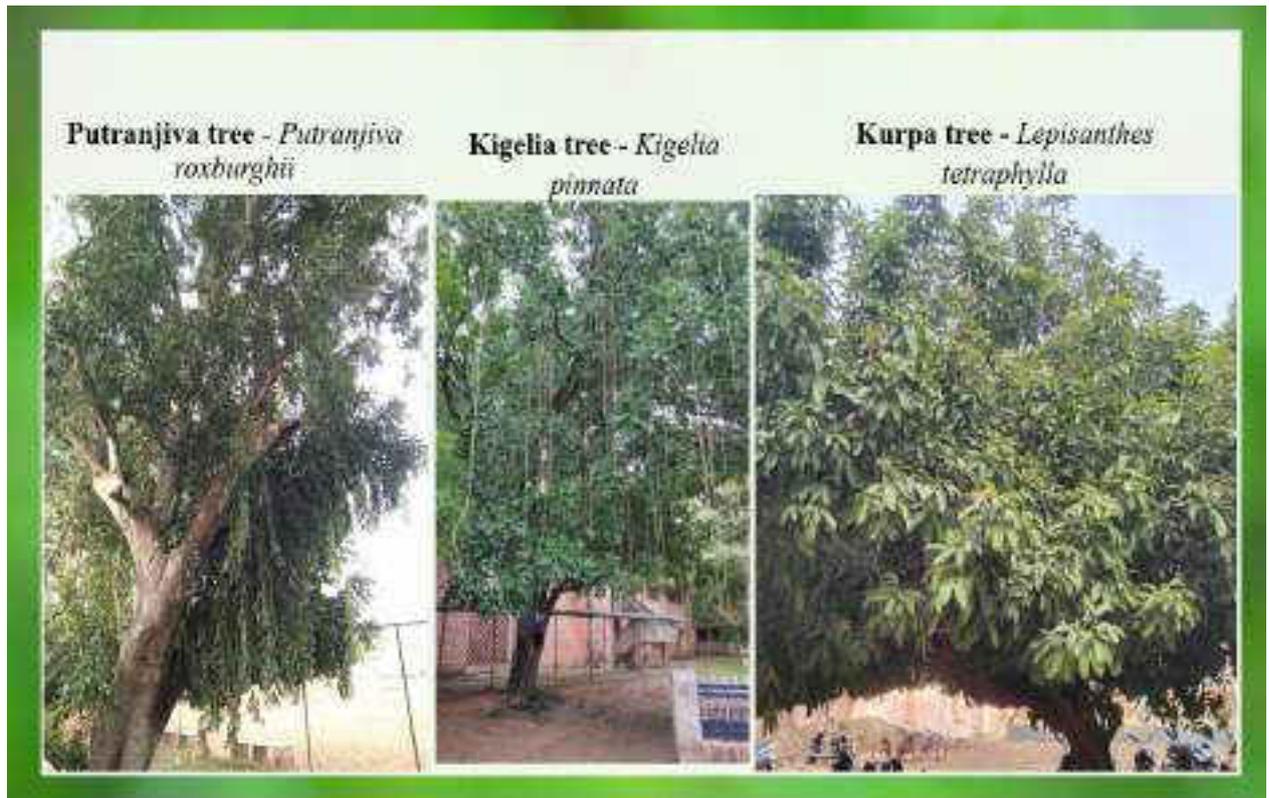
- Standardized production technologies for Nerium loose flower production
- Standardized production technologies for Crape Jasmine to bring the crop under commercial cultivation.

#### **6.4.9. ICT Application in Curricula Delivery**

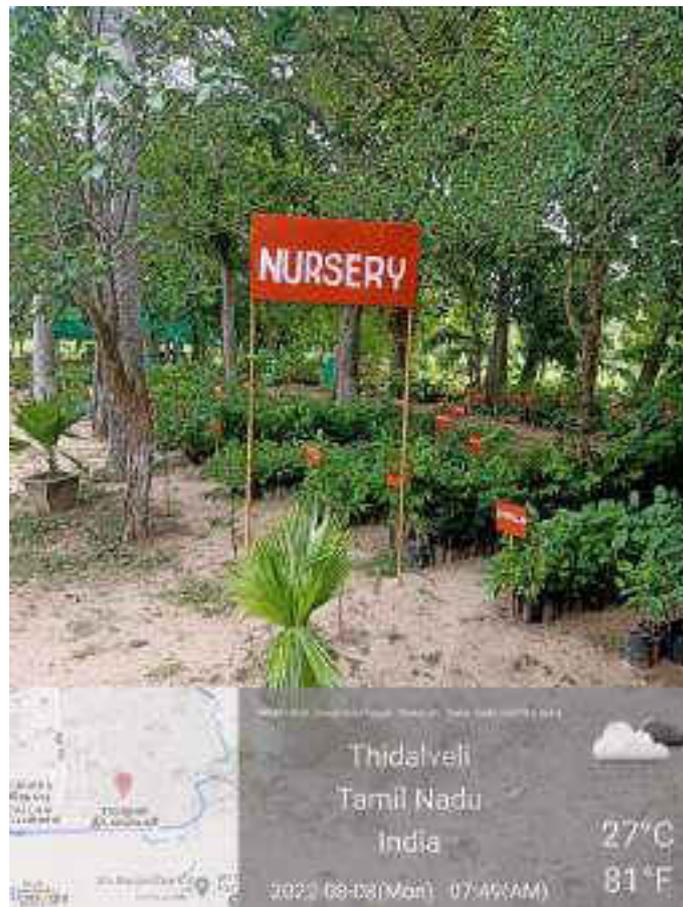
A smart class room facility, six computers with internet facility and two LCD projectors and smart TV help in making the teaching enabled with ICT in the Department. Video facilities available in Department help us to cast videos on precision farming practices pertaining to floriculture, nursery and post harvest value addition. Software's on Archi CAD (AUTO CAD/smart draw) and 3 D Land cad is used to demonstrate to the students for the Ornamental and Landscape Gardening course. PPTs are designed and updated regularly to teach the syllabus content in a way to make the students understand better. Mobile Apps for Landscape designing, sound pollution monitoring and Google class room are used and students are exposed to these Apps to keep them aware of the current trends. Site analysis and measuring tools available on Google Earth is exposed to the students for learning landscaping in a smart way.



EDUCATIONAL TOUR



TREASURES AT UNIVERSITY GARDEN



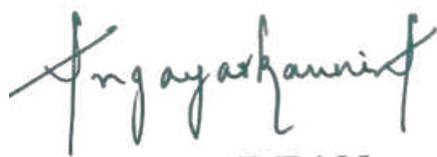
ORCHARD NURSERY

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented college-Wise.

6.4.11 Since the accreditation of Programmes is related to the all India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12 Certificate (Applicable when SSR is submitted for Programme)

I **A. Angayarkanni**, the Dean Faculty of Agriculture, Annamalai University hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



**DEAN**  
**FACULTY OF AGRICULTURE**  
**ANNAMALAI UNIVERSITY**

**Signature of Dean of the College with Date & Seal**



# Annamalai University

Accredited With 'A+' Grade by NAAC

## FACULTY OF AGRICULTURE

### *ICAR ACCREDITATION*

**Self Study Report (2017 to 2022) for  
Ph.D. Plantation, Spices, Medicinal & Aromatic Crops**

Submitted to  
National Agricultural Education Accreditation Board  
ICAR, New Delhi

Annamalainagar - 608 002  
Tamilnadu  
2022





**ANNAMALAI UNIVERSITY**

(Accredited with A<sup>+</sup> Grade by NAAC)



**FACULTY OF AGRICULTURE**

**Department of Horticulture**

**SELF STUDY REPORT OF**

**PH. D. (HORT.) PLANTATION, SPICES,  
MEDICINAL AND AROMATIC CROPS**

ANNAMALAINAGAR - 608 002

TAMIL NADU

INDIA

2022

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## Self-Study Report

### 6.4. Name of the Programme Ph. D. (Hort.) Plantation, Spices, Medicinal and Aromatic crops

Offered by: Department of Horticulture

#### 6.4.1. Brief History

The Division of Horticulture came into existence in 1958 with an objective of offering horticultural subjects to B.Sc. (Ag.) graduates. In the early stages, the Division was attached with the Department of Agricultural Botany. Under the leadership of renowned Horticulturist of International repute, Dr. S. Krishnamoorthy, a pioneering post graduate course in Horticulture was introduced for the first time in South India in 1958-59. With further expansion, the erstwhile Division of Horticulture functioning from 1958-59 onwards was upgraded as a Department in 1991 with the revival of a full fledged doctoral programme – Ph. D. in Horticulture and later on Ph.D. in Horticulture with course work from 2013 onwards. This integrated Ph.D. in Horticulture programme was continued upto 2021. However, during last board of studies held on 14<sup>th</sup> May 2022 the existing Ph.D in Horticulture was bifurcated into four specialized degree programme *viz.*, Fruit Science, Vegetable Science, Floriculture and Landscaping and Plantation, Spices, Medicinal and Aromatic Crops based on BSMA recommendation of 5<sup>th</sup> Deans committee of ICAR.

Historical Itinerary	Year/Period
Division of Horticulture	1958
First PG Programme in Horticulture	1958-59
Upgraded as a Department	1991
Post graduate Programme M.Sc. (Ag.) in Horticulture	1991
M.Sc. (Hort.) in Fruit Science/Vegetable Science/Floriculture and Landscaping/Plantation, Spices, Medicinal and Aromatic crops	2012 -2013
Ph. D. in Horticulture	1991
Ph. D. in Horticulture with course work	2013
Ph. D. Fruit Science/Vegetable Science/Floriculture and Landscaping/ Plantation, Spices, Medicinal and Aromatic crops	2022 – 2023 onwards

The Ph.D. (Hort.) Plantation, Spices, Medicinal and Aromatic crops has 100 credits in 6 semesters which includes 12 credits for major courses, 06 credits for minor courses, 05 credits for supporting courses, 02 credits for seminar and 75 credits for Ph.D thesis research. In addition to 100 credits, 02 contact hours for non credit compulsory courses and 02 contact hours for MOOC have been included to improve the research acumen and employability of the students. Revision of the curricula was carried out in the academic year 2022-2023 in concurrence with the latest recommendations from BSMA and 5<sup>th</sup> Dean’s committee of ICAR.

### Semester wise Distribution of Credits

Semester	Major Course	Minor Course	Supporting Course	Seminar	Research
I	6	4	2	1	2
II	6	2	3	1	10
III	-	-	-	-	15
IV	-	-	-	-	16
V	-	-	-	-	16
VI	-	-	-	-	16
<b>Total credit</b>	<b>12</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>75</b>

### Distribution of Courses

Course code	Course Title	Credit hour (Theory + Practical)
<b>Major Courses</b>		12
PSMA 601*	Advances in Production of Plantation and Spice Crops	3+0
PSMA 602*	Advances in Production of Medicinal and Aromatic Crops	3+0
PSMA 603*	Recent Breeding Approaches in Plantation, Spice, Medicinal and Aromatic Crops	3+0
PSMA 604	Advanced Methods in Laboratory Techniques for PSMA crops	1+2
PSMA 605	Biotechnological Approaches in PSMA Crops	3+0
<b>Minor Courses</b>		6
PSMA 606	Abiotic Stress Management in Plantation, Spice, Medicinal and Aromatic Crops	2+1
PSMA 607	Organic Spice and Plantation Crops Production	2+1
PSMA 608	Marketing and Export of Plantation, Spice, Medicinal and Aromatic Crops	2+1
<b>Supporting Courses</b>		5
COM 601	Advances in Computer Applications (1+1)	2

STA 601	Advances in Designs of Experiments (2+1)	3
	<b>Seminar</b>	
	Doctoral Seminar - I (0+1)	1
	Doctoral Seminar - II (0+1)	1
	<b>Research</b>	
	Doctoral Research (0+75)	75
	<b>Non credit courses</b>	
	<b>MOOC</b> (2+0)	-
	Research and Public Ethics (2+0)	-

### Vision

- Imparting quality education in Plantation, Spices, Medicinal and Aromatic crops degree programmes.
- Increasing employability of graduates in Plantation, Spices, Medicinal and Aromatic crops to meet the industrial demand and societal need by providing updated syllabus content on par with National and global standards.

### Strategic plan to achieve Vision and Goal

Goal	Programme Objectives	Implementation Plan	Performance Metrics /Timeline
Quality education	To prepare students to generate knowledge on management, production and strategies leading to the development of research philosophies, concepts and methodologies.	Classes are handled by experienced Faculty through class room teaching and practical demonstration.	Periodical class tests, practical assignments, quiz and end term exams are conducted to evaluate the performance of students.
Employability and National standards	To inculcate ability in students to critically analyze and comprehend the knowledge gained from a range of scientific data to approach cultivation problems and reach appropriate solutions	The students are guided to collect literature, identify gaps and propose research problem and conduct research on it.  Timely revision of curriculum according to BSMA and ICAR	The advisory committee supervises and evaluates the students during end of every semester.

	in the area of their specialization.	Deans committee.	
Professional ethics	To enhance capability of students to adhere to professional ethics and responsibilities related to horticultural practices.	The curriculum includes field / lab research activities making the students aware of professional norms and resource usage in cautious manner.	The student is continuously monitored by periodical review of work done in field, use of agricultural inputs, recording timely observations and verification of data by advisory committee.
Technology transfer	To facilitate exposure of students to function effectively as an individual and as a member or leader in diverse teams or interdisciplinary environment.	The interdisciplinary research approach is encouraged in making the students work in a diverse environment.	The activity of students in related research labs is evaluated by the major supervisor from time to time.
Lifelong learning	To engage the students in life-long learning and professional development through self- directed studies.	The programme includes compulsory courses along with research, seminars and publication of research work.	The continuous evaluation of courses is done through theory and practical exams while research is evaluated based on research progress in each semester and thesis submission at the end of the degree.

### Accomplishments

The Department of Horticulture is a pioneer institute which offered post graduate Horticultural programme in South India during 1958-59. The Horticulturists of international repute like Dr. S. Krishnamoorthy, Prof. P. Kalyanasundaram and Dr. L. R. Rajasekaran have fuelled the growth of this Department in its early stage and formed the basis of its present state of existence. The Department has been imparting quality education by using updated technologies in the field of education with audio visual aids, method demonstrations and participatory approach

and interactive practical experiments. **The Department was awarded with DST - FIST funds for infrastructure development. The syllabus content are updated as per suggestions by stake holders, lead organisations in agriculture and scientific experts. The students are given practical exposure in horticulture industries by hands- on - training and by study tours and industrial trainings.** The students are given counselling by the teachers for their academic improvement and future planning. Special coaching for ICAR JRF, SRF and NET examinations are provided.

The Department of Horticulture has contributed to the horticulture sector by researching upon the need based objectives in the coastal area. The location specific research outcomes are disseminated to the farmers in the coastal Tamil Nadu to propel horticultural crops in the coastal farming system. The department distributes certified seeds of “Annamalai brinjal” to the farmers. **The standardized package of practices developed for rice-fallow vegetable production, common tropical vegetables and introduction of nutritionally rich/economically feasible less known crops has been carried out. For the industrial sector stake holders, the Department is providing its research expertise by conducting product evaluation research.**

The Department is training the farmers in new technologies that are upcoming in the field of horticulture and creating awareness among the farmers about the new crops, varieties and techniques. Diagnostic services to the farmers are provided for various production problems. Demonstration of technologies through Rural Horticultural Work Experience is done every year. Periodically workshops and seminars are conducted for the benefit of industrial stake holders, scholars and scientists.

Category	Upto 2016	Last five year period (2017-2022)
Number of Publications (Journal articles)	724	338
Number of Books	13	20
Number of Book chapters	45	232
Number of Projects Handled	21	26
Grant mobilization (Rs. in lakh)	188.48	57.04
Number of Ph.D.s produced	43	8
Number of PGs produced	328	180
Number of Seminars/Conferences /Workshops/Webinar Organized	6	25
Number of Awards/recognition received by the Faculty	113	51
Countnes visited by the Faculty. (Professional Visit)	9	9

#### 6.4.2. Faculty Strength

Presently 35 staff members are available in the Department specialized in different aspects of Horticulture

S. No.	Sanctioned posts	Sanctioned	Filled	Vacant	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1	Professor*	6	6	-	1
2	Associate Professor*	5	5	-	1

3	Assistant Professor*	24	24	-	3
	<b>Total</b>	<b>35</b>	<b>35</b>	<b>-</b>	<b>5</b>

\* Engaged in UG, PG and Ph.D programmes

### Number of Faculty designated for Plantation, Spices, Medicinal and Aromatic crops

Professor\* - 02

Associate Professor\* - 01

Assistant Professor\* - 07

\*Commonly engaged for other courses also

### Faculty engaged for common courses from the other Departments

S. No	Cadre	Faculty in place (as on August, 2022)	Vacancy position	Faculty Recommended by ICAR/UGC/VCI other regulatory bodies
1.	Professor	1	-	-
2.	Associate Professor	3	-	-
3.	Assistant Professor	5	-	-

### Credentials of the Faculty

Name & Designation	Total Service (Years)	Field of Interest/ Specialization	Total number of Students Guided		Total number of Publications	Total number of Publications (July 2017 to June 2022)	
			PG	Ph.D.		Journals	**Others
Dr. K. Haripriya Professor and Head	29	Plantation, Spices, Medicinal and Aromatic crops	40	4	95	20	5
Dr. Arumugam Shakila Professor	30	Fruit Science	46	3	115	4	6
Dr. A. Anburani Professor	28	Vegetable Science	28	3	61	14	10
Dr. P. Karuppaiah,	28	Floriculture and	26	7	110	15	8

Professor		Landscaping					
Dr. S. Anuja Professor	25	Plantation, Spices, Medicinal and Aromatic crops	16	-	71	12	11
Dr.S.Rameshkumar Professor	23	Fruit Science	14	6	52	20	16
Dr. J. Samruban, Assoc. Professor	24	Plantation, Spices, Medicinal and Aromatic crops	8	-	32	8	-
Dr.R. Kandasamy Assoc. Professor	19	Vegetable Science	7	-	42	19	8
Dr. S. Kamalakannan Assoc. Professor	19	Vegetable Science	9	-	86	32	25
Dr. R. Sudhagar Associate professor	20	Floriculture and Landscaping	12	1	71	40	22
Dr. CT. Sathappan Associate professor	19	Fruit Science	7	-	37	22	9
Dr. S. Venkatesan Assistant Professor	21	Plantation, Spices, Medicinal and Aromatic crops	11	-	30	08	05
Dr. R. Sureshkumar, Assistant Professor	20	Vegetable Science	9	-	33	10	23
Dr. C. Muruganandam Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic	10	1	41	17	16

		crops					
Dr. T. R. Barathkumar Assistant Professor	20	Plantation, Spices, Medicinal and Aromatic crops	6	-	54	18	-
Dr. R. Sendhilmathan, Assistant Professor	20	Floriculture and Landscaping	10	-	39	13	18
Dr. E. Arivazhagan Assistant Professor	20	Vegetable Science	7	-	31	18	-
Dr. S. Madhavan Assistant Professor	19	Plantation, Spices, Medicinal and Aromatic crops	5	-	82	43	28
Mr. N. Dhamodharan Assistant Professor	20	Fruit Science	5	-	-	-	-
Dr. M. Rajkumar Assistant Professor	20	Fruit Science	5	-	37	11	23
Dr. K. Sha Assistant Professor	20	Vegetable Science	9	-	32	-	24
Dr. P. Madhana Kumari Assistant Professor	19	Vegetable Science	9	-	16	13	11
Dr. J. Padmanaban Assistant Professor	19	Floriculture and Landscaping	10	-	29	10	10
Dr. T. Uma Maheswari Assistant	19	Fruit Science	8	1	89	42	25

Professor							
Dr. D. Dhanasekaran Assistant Professor	19	Floriculture and Landscaping	8	1	47	39	20
Dr. A. R. Lenin Assistant Professor	18	Floriculture and Landscaping	5	-	14	4	6
Dr. S. Kumar Assistant Professor	18	Floriculture and Landscaping	5	-	52	48	22
Dr. Ajish Muraleedharan, Assistant Professor	18	Floriculture and Landscaping	4	-	83	72	11
Mr.S.Elakkuvan Assistant Professor	18	Fruit Science	4	-	20	15	-
Dr. S. Mullaimaran Assistant Professor	17	Fruit Science	3		17	8	7
Dr. M. Gayathiri Assistant Professor	17	Plantation, Spices, Medicinal and Aromatic crops	5	-	26	13	12
Dr. G.Samlind Sujin Assistant Professor	15	Vegetable Science	4	-	19	16	1
Dr. R. Arulananth Assistant professor	14	Vegetable science	2	-	17	2	15
Dr. R. Rajeswari Assistant Professor	13	Plantation, Spices, Medicinal and Aromatic crops	4	-	31	6	5
Dr. S. Sivasankar Assistant	13	Plantation, Spices,	5	-	26	20	4

Professor		Medicinal and Aromatic crops					
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### Publication Details (2017-2022)

S.No.	Title	Authors	Journal	Year
1.	Influence of bulb size and growth regulators on the performance of English cape lily ( <i>Crinum sp.</i> )	Manimaran.P and R.Sendhilmathan,	Res. Environ. life sci. 10(4) 319 -321.	2017
2.	Effect of organic, inorganic and biofertilizers on yield and quality of Thuduvalai ( <i>Solanum trilobatum L.</i> )	Suresh.V and R.Sendhilmathan	Journal on Medicinal Plants Studies. 5(4): 123-125.	2017
3.	Effect of integrated nutrient management on the growth and physiological parameters of Medicinal Solanum ( <i>Solanum viarum Dunal</i> ).	Venkatesan.S and Arumugam Shakila,	Int. Nat. J. Current Res. In life Sci. <b>6(11)</b> : 703 -707.	2017
4.	Effect of growth regulators on the yield, physiological and biochemical parameters of medicinal solanum ( <i>Solanum viarum Dunal</i> ).	Venkatesan.S and Arumugam Shakila,	J. Emerging Tech. Innovative Res. <b>4(6)</b> : 311 - 318.	2017
5.	Vase life extension on cut flowers of <i>Solidago canadensis</i> as influenced by different sucrose concentrations.	AjishMuraleedharan, J.L. Joshi, A. J. Nainu and P.K. karthikeyan	Journal of Emerging Technologies and Innovative Research. 4(2):320-326.	2017
6.	Influence of off season land management on maximizing yield and quality of turmeric cultivars ( <i>Curcuma longa L.</i> ) Under coastal regions of Tamil Nadu.	A.Anburani	The Journal of Phytology. (4) 01-03.	2018
7.	Effect of spacing and organic manures on the fresh herbage yield, dry matter production and leaf nutrient content of vallarai ( <i>Centella asiatica</i> ).	Rameshkumar. K and S. Venkatesan,	Pl. Archives. <b>18</b> : 308 -310.	2018
8.	Effect of organic inputs on the yield, dry matter production	Venkatesan.S and Arumugam	J. Emerging Tech. Innovative Res.	2018

	,solasodine content and Nutrient uptake of medicinal solanum ( <i>Solanum viarum</i> Dunal).	Shakila,	5(5): 868 – 876.	
9.	studies on the effect of biofertilizers on growth, yield and alkaloid content of ashwagandha roots ( <i>Withania somnifera</i> Dunal.).	Barathkumar, T.R. and K. Manivannan.	J.Pharmacognosy and Phytochemistry. 3199-3201.	2018
10.	Studies on the effect of biofertilizers and plant growth regulators on growth, yield and alkaloid content of ashwagandha ( <i>Withania somnifera</i> Dunal.).	Barathkumar, T.R. and K. Manivannan.	J.Pharmacognosy and Phytochemistry. 3202-3205.	2018
11.	Influence of different levels of NPK on physiological and biochemical parameters of tuduvalai ( <i>Solanum trilobatum</i> L.).	Barathkumar, T.R	Life Science Archives. 4(2):1329-1334.	2018
12.	Integrated Nutrient Management on growth and yield of Thuduvalai ( <i>Solanum trilobatum</i> L.)	Suresh. V and R. Sendhilnathan	Journal on Medicinal Plants Studies. 6(3):1-3.	2018
13.	Effect of sprigging density and foliar nitrogen on the growth of Berm	D. Dhanasekaran	J. Hortl. Sci. 13(2):43-48.	2018
14.	Effect of Integrated Nutrient Management on the Fresh herbage yield, Dry matter production, Physiological parameters, Nutrient uptake and Profitability of Mint ( <i>Mentha arvensis</i> L.).	Venkatesan. S and V. Rajamanickam,	Int. Nat. J. Adv. Innovative Res. 6(2): 166 -169.	2019
15.	Studies on the effect of storage temperature and duration of storage of tuber on sprouting, growth and yield of glory lily ( <i>Gloriosa superbal.</i> ).	Muruganandam.C., M.KaderMohideen and T.R. Barathkumar.	International journal of tropical agriculture. 37 (1-2)	2019
16.	Study on In-vitro Propagation in Glory lily ( <i>Gloriosasuperbal.</i> ).	Muruganandam.C., M.KaderMohideen and T.R. Barathkumar.	Annals of plant and Soil Research. 19: 2495-2500	2019
17.	Studies on the Effect of Certain Chemicals and Bio Regulators on Germination and Seedling Growth in Glory lily ( <i>Gloriosa</i>	Muruganandam.C M.kaderMohideen and	Plant Archives. 21: 2529-2531	2019

	<i>superba</i> L.)	T.R.Bharath Kumar		
18.	Effect of integrated nutrient management on growth and yield of thuduvalai ( <i>Solanum trilobatum</i> L.).	Suresh, V., Sendhilnathan, R., Jansirani, P., Sundharaiya, K., Palanisamy, A. and Subramani, P.	Acta Hortic. 1241, 343-348.	2019
19.	Utilization of spices as bio-mulches in intensive cropping system.	S.Mullaimaran., K,Haripriya, T.R.Barathkumar and Jaiganesh.V.	International Journal of Research and Analytical Reviews. 6(1):325z-328z.	2019
20.	Integrated nutrient management studies on biomass, dye yield and quality of indigo ( <i>indigofera tinctorial</i> ).	Dhanasekaran, D and K.Sekar	Plant Archives. 20 (Supplement 2): 3899-3901.	2020
21.	Rapid multiplication of turmeric minisetts using different media in portray nursery.	V.Narendhiran and M.Gayathiri	International Journal of Agricultural Science and Research. 10(special issue): 22-25.	2020
22.	Effect of different presprouting treatments on turmeric rhizomes,	V.Narendhiran and M.Gayathiri,	International Journal of Agricultural Science and Research. 10(special issue): 13-15	2020
23.	Response of different organic media on growing turmeric minisetts in portray nursery,	M.Gayathiri and V.Narendhiran,	International Journal of emerging technologies and innovative research. 7(4): 1304-1307.	2020
24.	Best organic media for growing turmeric minisetts in portray nursery	M.Gayathiri and V.Narendhiran,	Plant archives. 20 (1): 3014-3016	2020
25.	Response of root parameters on the effect of plant growth regulators on rooting of semi hardwood cuttings in betel vine ( <i>Piper betel</i> cv. Vellaikodi,	M.Gayathiri, S.Madhavan and S.Sindhu,	International Journal of emerging technologies and innovative	2020

			research. 7(12): 686-689.	
26.	Influence of shoot parameters on the effect of plant growth regulators on rooting of semi hardwood cuttings in betel vine ( <i>Piper betel. l</i> ) cv. vellaikodi.	M.Gayathiri, S.Madhavan and S.Sindhu	International Journal of emerging technologies and innovative research. 7(12): 836-839.	2020
27.	Vetiver-a Blessing to Coastal ecosystem for an integral Prosperity and ecological stability	Babu, S; Rameshkumar, S; Prakash, M;	Coastal Agriculture and Climate Change. 94-106	2021
28.	Effect of PGR's on rooting of gymmnema cuttings ( <i>Gymmnemasyvestre</i> )	Dr.S.Madhavan	Research Journal of Agrl. Service. 12(3): 1111-1112	
29.	Effect of Integrated Nutrient Management on Yield Parameters of Medicinal Coleus ( <i>Coleus Forskohlii Briq.</i> )	C. Muruganandam, R. Ezhilnilavu and S. Sivasankar	Plant Archives. 21: 2529-2531	2021
30.	Effect of Media on Growth Parameters of Red Ginger ( <i>Alpinia purpurata</i> (Vieill.) K. Schum.).	Kumar, S., S. Ramya, AjishMuraleedharan and K. Sanjeev Kumar	Research Journal of Agricultural Sciences. 12(5): 1694-1696.	2021
31.	Effect of Media on Growth Parameters of Red Ginger ( <i>Alpinia purpurata</i> (Vieill.) K. Schum.).	S. Kumar, S. Ramya, AjishMuraleedharan and K. Sanjeev Kumar	Res. Jr. of Agril. Sci. (5): 1694-1696.	2021

#### Workshop/Symposium/Webinars organized from 2017-2022

S.No	Title of the Programme	Name of the Faculty	Date
1.	Workshop on Roof Garden	Dr. R. Sudhagar Dr. S. Venkatesan Dr. T. Uma Maheswari	2 <sup>nd</sup> & 3 <sup>rd</sup> February 2018
2.	National workshop on BHUVAN Geo portal for Precision farming	Dr. S. Venkatesan Dr. R. Sudhagar	8 <sup>th</sup> January 2019

3.	National symposium on Horticulture in the Vanguard of climate change and urban environment	Dr. R. Ramesh Kumar Dr. D. Dhanasekaran Dr. CT. Sathappan	7 <sup>th</sup> & 8 <sup>th</sup> February 2019
4.	Webinar on Recent advances in the improvement of cucurbitaceous vegetables and Bhendi	Dr. S. Kamalakannan	11 <sup>th</sup> & 16 <sup>th</sup> July 2020
5	Webinar on Emerging trends in temperate fruit production	Dr. CT. Sathappan	12 <sup>th</sup> & 13 <sup>th</sup> July 2020
6	Webinar on Strategies to combat recent challenges in Floriculture Industry	Dr. S. Rameshkumar Dr. D. Dhanasekaran	18 <sup>th</sup> July 2020
7	Webinar on Landscape tools for smart societies	Dr. S. Rameshkumar Dr. D. Dhanasekaran	19 <sup>th</sup> July 2020
8	Webinar on New normal in floriculture	Dr. S. Rameshkumar Dr. D. Dhanasekaran	23 <sup>rd</sup> July 2020
9	Webinar on Recent advances in strawberry production	Dr. CT. Sathappan Dr. D. Dhanasekaran	24 <sup>th</sup> July 2020
10	Webinar on Research Advances in kiwi production	Dr. CT. Sathappan Dr. D. Dhanasekaran	31 <sup>st</sup> July 2020
11	Webinar on Health foods from fruits and vegetables - An Imminent need	Dr. CT. Sathappan Dr. D. Dhanasekaran	1 <sup>st</sup> August 2020
12	Webinar on Banana - Fruit for Nutritional and livelihood security	Dr. R. Sendhilnathan Dr. S. Sivasankar	2 <sup>nd</sup> August 2020
13	Webinar on Annona - The super fruit of 21 <sup>st</sup> century	Dr. R. Kandasamy Dr. E. Arivazhagan	3 <sup>rd</sup> August 2020
14	Webinar on Nutraceuticals from flower crops	Dr. S. Rameshkumar Dr. N. Dhamodharan	4 <sup>th</sup> August 2020
15	Webinar on Flower seed production - challenges and opportunities	Dr. S. Rameshkumar Dr. D. Dhanasekaran	5 <sup>th</sup> August 2020

		Dr. CT. Sathappan	
16	International workshop on Naunces in Floriculture industry ( <a href="#">Webinar 1.pdf</a> )	Dr. S. Sivasankar	6 <sup>th</sup> September 2021
17	International workshop on Naunces in landscape industry ( <a href="#">Webinar2.pdf</a> )	Dr. S. Rameshkumar Dr. CT. Sathappan Dr. D. Dhanasekaran	13 <sup>th</sup> September 2021
18	International workshop on Naunces in Post harvest horticulture ( <a href="#">Webinar 3.pdf</a> )	Dr. CT. Sathappan Dr. J. Padmanaban Dr. D. Dhanasekaran	20 <sup>th</sup> September 2021
19	National work shop - Emerging trends in production and processing of guava ( <a href="#">Webinar 4.pdf</a> )	Dr. S. Kamalakannan Dr. S. Kumar	25 <sup>th</sup> September 2021
20	International workshop - Opportunities and challenges in horticultural technologies ( <a href="#">Webinar 5.pdf</a> )	Dr. A. Anburani Dr. C. Muruganandam Mr. S. Elakkuvan Dr. R. Rajeswari	30 <sup>th</sup> September 2021
21	International Virtual conference - Startups in Horticulture Industry (SUHI - 21) ( <a href="#">Webinar 6.pdf</a> )	Dr.R.Sendhinathan Dr. M. Rajkumar Dr. P. Madhana Kumari	20 <sup>th</sup> October 2021
22	International Virtual Workshop - Scope and opportunities in plantation crops (SOPC - 21) ( <a href="#">Webinar 7.pdf</a> )	Dr.R.Kandasamy Dr. E. Arivazhagan Dr. A. R. Lenin	27 <sup>th</sup> October 2021
23	International Virtual conference - Innovative trends in horticulture production (ITHP - 21) ( <a href="#">Webinar 8.pdf</a> )	Dr.R.Suresh Kumar Dr. T.R. Barathkumar Dr. T. Uma Maheswari	29 <sup>th</sup> October 2021
24	National Virtual workshop - Procurement, processing and product promotion in horticulture crops ( <a href="#">Webinar 9.pdf</a> )	Dr.R.Sudhagar Dr. S. Venkatesan Dr. M. Gayathiri	16 <sup>th</sup> November 2021
25	International Virtual conference - Healthy	Dr.S.Kamalakannan	18 <sup>th</sup>

horticulture for wealthy environment (file:///H:/webinar/Webinar%2010.pdf)	Dr. S. Kumar Dr. R. Rajeswari	November 2021
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#### Awards/Recognitions from 2017 to 2022

S. No	Name of the faculty	Awards
1.	Dr. K. Haripriya	1. 3rd prize best poster award 2019, Indian society of vegetable science, Varanasi. 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 24.02.2022
2	Dr. Arumugam Shakila	1. Subject matter Specialist in selection committee, ICAR-National Research Centre for Banana Trichirapalli. 09.04.2021 2. Subject matter Specialist in selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 22.06.2021 3. External expert member, expert committee for re-structuring divisions in School of Agriculture and Animal Sciences, Gandhigram Rural Institute, Gandhigram, Dindigul. 19.11.2021 4. Board of studies in Agriculture – (GRI), Gandhigram Rural Institute, Gandhigram, Dindigul. 2021-2024 5. Subject expert for CAS selection committee, Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. 28.08.2019
3	Dr. A. Anburani	1. APSI Honours award by Academy in Plant Sciences, India. 2. Best oral presentation award at international symposia, Hyderabad.
4	Dr. S. Anuja	1. Received best paper award, Annamalai University. 2. Received certificate of achievement award.
5	Dr. S. Rameshkumar	1. Fellow of National Gladiolus Trust, National Gladiolus trust, Jammu
6	Dr. J. Samruban	1. 1 <sup>st</sup> poster presentation award in 9 <sup>th</sup> Indian Horticulture congress 2021, Kanpur
7	Dr. R. Kandasamy	1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry
8	Dr. CT. Sathappan	1. Fellow of National Gladiolus Trust.
9	Dr. S. Venkatesan	1. Best oral presentation award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of

	<p>International Conference on GRISAAS- 2019</p> <p>2. Best researchers award- Astha Foundation, 85, Phool Bagh Colony, Meerut, Uttarpradesh, India. On the occasion of International Conference on GRISAAS- 2019.</p> <p>3. Best Horticulturalist Award- Agricultural &amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India.</p> <p>At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>4. Best oral presentation Award- 3<sup>rd</sup> National Conference on Promoting &amp; Reinvigorating Agri - Horti, Technological Innovations (24<sup>th</sup>&amp; 25<sup>th</sup> December, 2019) held at Danbad Jharkhand, India.</p> <p>5. Best researcher award- Jointly organized by Voice of Indian Concern for the Environment(VOICE) &amp; Pondicherry Institute of Agricultural Sciences( PIAS ) in Association with Murray State University, USA. Supported by Centre for Environment &amp; Agricultural Development(CEAD)- 2020</p> <p>6. Excellence in Research award-3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>7. Best oral presentation Award- 3<sup>rd</sup>International Conference (Hybrid Mode) on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI), December 26 - 28, 2021, @ Holyday Home, Ranchi, Jharkhand, India.</p> <p>8. Best Horticulturist Award- Agricultural&amp; Environmental Technology Development Society, U. S. Nagar, Uttarakhand, India. At 3<sup>rd</sup> International Conference On Global Initiative in Agricultural, Forestry and Applied Sciences for Food Security and Sustainable Development (GIAFAS-2021) on October 17 &amp; 18, 2021 at Shri Guru Ram Rai University, Dehradun, Uttarakhand, India.</p> <p>9. Best oral presentation award- 7<sup>th</sup> National Youth Convention 2022 under the theme “Food Security to Nutritional Security : Youth Perspective” jointly organized by All India Agricultural Students Association, Tamil Nadu Agricultural University, coimbatore and Indian Council of Agricultural Research, New Delhi, India March, 24 &amp; 25, 2022.</p> <p>10. Best Poster Award- Two days DST PURSE – II Sponsored National conference on “Transforming Agricultural</p>
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		Extension Systems Towards Achieving Food and Nutritional Security” at Department of Agricultural Extension, Faculty of Agriculture, Annamalai University. March, 21 & 22, 2022.
10	Dr. T. R. Barath Kumar	<ol style="list-style-type: none"> <li>1. PRAGATI, Organizing Committee, Dhanbad, Jharkhand, India. 2017</li> <li>2. TECHSEAR, Organizing Committee, ICAR-IIRR-Rajendranagar, Hyderabad, India. 2017</li> <li>3. Endling conferences society, ICFA-2018, Pune, Maharashtra, India. 2018</li> <li>4. NSPOFED, Organizing Committee, School of agriculture and animal sciences, Gandhigram rural institute-Deemed to be University, Gandhigram, Dindigul, Tamil Nadu, India. 2019.</li> <li>5. Astha foundation (Meerut,U.P) &amp; Organizing Committee GRISAAS, ICAR, NAARM, Rajendranagar, Hyderabad, Telangana, India. 2019.</li> <li>6. ICEACBS, Organizing Committee, VOICE, PIAS, Murray State University (USA) and CEAD Puducherry, India. 2020.</li> <li>7. “3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)” Ranchi, Jharkhand. 2022</li> <li>8. “3<sup>rd</sup> International Conference on Food, Agriculture and Innovations (3<sup>rd</sup> ICFAI)” Ranchi, Jharkhand. 2022</li> </ol>
11	Dr. R. Sendhilnathan	<ol style="list-style-type: none"> <li>1. Awarded Best poster presentation. in 21<sup>st</sup>century (NSPOFED –in 21<sup>st</sup>century. 15<sup>th</sup> and 16<sup>th</sup>, march 2019. School of agriculture and animal sciences, Gandhigram Rural Institute, Dindigul.</li> <li>2. Excellence in Research award for outstanding contribution in the field of “Floriculture and landscape gardening” at International Conference on (GRISAAS-2019) held <b>between 20<sup>th</sup> to 22<sup>nd</sup> October 2019 at ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India.</b></li> <li>3. Best researcher award (ICEACBS2020) held between Jan 24-25, 2020 at Pondicherry, India.</li> </ol>
12	Dr. S. Madhavan	<ol style="list-style-type: none"> <li>1. Distinguished Young Scientist Award in the International conference on Conservation of Natural Resources</li> </ol>

13	Dr. P.Madhana Kumari	1. Best scientist award issued during 2020 at International conference on Environmental Agricultural, Chemical and Biological Sciences held at Puducherry 2. Best oral presentation award issued by AIASA Tamilnadu during 2019 held at Annamalai University.
14	Dr. T. Uma Maheswari	1. Best oral presentation award- AIASA, 2020 2. Best women scientist award- ICEACBS, Puducherry, 2020
15	Dr. D. Dhanasekarn	1. Fellow of National Gladiolus trust, National Gladiolus trust, Jammu (2018) 2. Best Oral Presentation IInd Prize, NABS Conference, Pondicherry (2019) 3. Young Scientist Award, National Gladiolus Trust (2020) 4. Best Oral Presentation, IIIrd Prize, First NABS (2021) 5. Best Oral Presentation IInd Prize, 7th National Youth Convention Food Security to Nutritional Security: Youth Perspective (FSNS 2022) Jointly organized by AIASA, TNAU & ICAR, Coimbatore, 24-25 March, 2022
16	Dr. S. Kumar	1. Best oral presentation award- 3 <sup>rd</sup> ICFAI, Jharkhand. 2. Excellence in teaching award- ICEACBS, Puducherry, 2020
17	Mr. S. Elakkuvan	Outstanding Horticulturalist award, ICEACBS 2020, Puducherry
18	Dr. G. SamlindSujin	Best young scientist award, ICEACBS 2020, Puducherry
19	Dr. R. Arulanath	1. Dr. Sir C.V. Raman Best scientist state award, Bahujana Sahitya Academy - 2019. Thangavur. 2. Best faculty award in horticulture - CNRTSPA 2019- William research award, Kanyakumari

#### Abroad Visits

S. No	Name of the Faculty	Country visited & year	Purpose of visit
1.	Dr. R. Suresh Kumar	Thailand (2018)	International Conference of Food Agriculture and Innovation (ICFAI)
2.	Dr. J. Padmanaban	Switzerland (2019) Italy (2019) France (2019)	Academic collaboration with Tamil education Development council (TEDC)

**Details of Project (2017-2022)**

Sl. No.	Year	Name of the Investigator	Title of the Project	Amount in lakhs	Type	Funding Agency
1.	2019-2021	Dr. P. Karuppaiah (PI)	Doubling the farmers income through protected cultivation technology – An economic evaluation study in Tamil Nadu.	8.0	Govt.	Indian Council of Social Science Research
2.	2017-2018	Dr. S. Rameshkumar (PI)	As PI : Evaluation of Picoxystrobin 22.52% w/w SC against Powdery mildew and Downy mildew of Grapes	1.50	Non-Govt.	M/S. Bharat Rasayan
3.	2017-2019	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Bio efficacy studies of Fytovita and Pepto on the growth, metabolism and yield of field and vegetable crops	4.42	Non-Govt.	M/S. T Stanes & Co
4.	2018-2020	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Effect of Active ORG on the nutrient availability, growth, metabolism and yield of <i>Lycopersicon esculentum</i> Mill.	1.36	Non-Govt.	M/S. T Stanes & Co
5.	2021-2022	Dr. S. Baradhan (PI) Dr. S. Rameshkumar (Co-PI)	As Co-PI: Evaluation of bio efficacy of Dr.ROOT on the yield of Onion –PI	1.56	Non-Govt	M/S. T Stanes & Co
6.	2021-2022	Dr. S. Rameshkumar (PI)	As PI : Technology Dissemination Project for “Tree transplantation in Thenkasi to Thirunelvel Highway Extension	1.18	Non-Govt	P & C Projects (P) Ltd.

			Site"			
7.	2018-2019	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Bio – efficacy of Nano nutrients on growth and yield of capsicum	3.88	Co-op. Govt.	IFFCO, Chennai
8.	2020-2023	Dr. J. Sam Ruban (PI) Dr. M. Rajkumar (Co-PI)	Effect of Nano DAP on vegetable cowpea	4.88	Co-op. Govt.	IFFCO, Chennai
9.	2019-20	Dr. M. Rajkumar (PI) Dr. J. Sam Ruban (Co-PI)	Evaluation of bio-efficacy of crop tiger on Banana	2.50	Private	PEPTECH, Bioscience limited, New Delhi
10.	2022 onwards	Dr. R. Kandasamy (PI), Dr. E. Arivazhagan (Co-PI) and Dr. C. Kathirvelu (Co-PI)	Efficacy of Bio-stimulants, Zymgold Liquid, Armurox, Equilibrium, Terrasorb Complex and Zym gold Plus Granules with respect to yield, yield attributing factors and crop safety on tomato crop	8.82	Non. Govt	Godrej Agrovet Ltd., Mumbai
11	2017-2019	Dr. RM. Kathiresan and Dr. CT. Sathappan	As Associating scientist  in " Annamalai rice+fish+poultry farming system for improving nutrition and livelihoods of small farmers in Nepal	120.00	Research and Extension	IKP-KP & USAID
12.	2018-2021	Dr.RM.Kathiresan and CT. Sathappan (Associating Scientist)	As an Associating Scientist In "Agronomic Integration of Technologies for Productivity Management and Optimal Water Use	209.00	Govt.	DST- Mission mode

			In Wetlands of Cauvery River Delta”			
13.	2022-24	Dr. C. Kathirvelu (Principal investigator) Dr. S. Venkatesan and Dr. K. Suseendran (Co Principal investigator)	Bio- efficacy and Phytotoxicity and Compatibility of PIPL 100 against Chilli, PIPL 200 against Potato and PIPL 300 against Rice crop on various growth parameters	5.52	Non Govt	M/S Parijat Industries Limited, New Delhi.
14.	2018-2020	Dr.P.Sudhagar(PI) Dr.R.Sureshkumar(Co-PI)	Efficacy of LAATU premium(Gibberellin acid 0.001%) as plant growth regulator and yield of Tomato(Co-PI)	3.00	Pvt.	Sumitomo Chemicals Pvt.Ltd, New Delhi
15.	01.07.2018 to 30.06.2020	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio-efficacy and Phytotoxicity of homobrassinolide 0.04% EC in Paddy, Groundnut and Tomato	9.00	Non Govt.	m/s Godrej Agrovet Ltd, Mumbai.
16.	July 2018 to December 2019	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio-efficacy of new herbicide clethodim 12% EC for controlling grassy weeds in cotton, onion and soyabean and its phytotoxicity effect on succeeding crops	7.50	Non Govt.	Deccan fine (Chemicals) India Pvt. Ltd. Hyderabad, Telengana
17.	December 2018 to December 2021	Dr. P. Sudhagar (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy toxicity evaluation of Glutamine Ammonium 13.5% against weed flora in grapes and its effect on succeeding crops .	13.33	Non Govt.	M/S UPL.Pvt.ltd, Mumbai.

18.	January 2020 to June 2022	Dr. P. Sudhaghar (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of Bio – efficacy and phytotoxicity of Flumioxazin 50 % SC against major weeds in tea and non- cropped area and its effect on succeeding crops for two seasons	5.46	Non Govt.	M/S. Sumitomo chemical India Ltd. Mumbai NON GOVT
19.	December 2019 to May 2020	Dr.M.Rajkumar – PI Dr. J. Samruban (Co-PI)	Evaluation of Bio – efficacy of growth enhance formulations and their effect on Onion, Rice and Chilli	2.27	Non Govt.	Agri solutions Pvt.Ltd. Nashik
20.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Evaluation of studies on Bio- Efficacy of evaluation of the bio-stimulant- Gaxy on cotton and grape and opteine on soybean and ground nut and pilatus on tomato.	10.50	Non Govt.	M/S UPL.Pvt.Ltd. Mumbai.
21.	July 2021 to June 2023	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Studies on Bio- efficacy of evaluation of Bio- Stimulant macarena on soybean, tomato, cotton and Brique on chilli and tomato.	10.50	Non Govt.	M/S.UPL.Pvt, Mumbai.
22.	February 2022 to February 2024	Dr. R. Ramam (PI) Dr.M.Rajkumar (Co-PI)	Bio-efficacy and phytotoxicity evaluation of SIAPTION 101 on growth, yield and quality of grapes for 2 season.	2.275	Non Govt.	M/s Jivagro Ltd.

23.	2018 -2020	Prof.Rm.Kathiresan (PI) Dr.J.Padmanaban (Assoc. staff)	Agronomic Integration of Technologies for productivity management & Optimal Water Use in Wetland of Cauvery 35 River Delta	67.00	Govt.	DST, New Delhi
24.	2021-2022	Dr.J.Padmanaban (PI) Dr.S.Manimaran (Co-PI)	Evaluation of Bio-stimulants: Top-up Gold (Granules) / Enhancer (Liquid) in Paddy	3.75	Non Govt.	Plantgene Biological Pvt. Ltd., Trichy
25.	2021-2024	Dr.S.Kanagarajan (PI) Dr.J.Padmanaban(Co-PI)	Testing of new insecticide: Evicent 45 WG against Thrips and capsule borer in Cardamom	10.00	Non Govt.	Syngenta India Ltd., CBE
26.	October 2021 to September 2024	Dr. T. Uma Maheswari (Co-PI) Dr.R.Kanagarajan (PI)	Evaluation project: Testing of new insecticide SPID + ACET 54 WG against Tea pests	5.00	Non Govt.	M/S SYNGENTA India Ltd., Coimbatore
27.	February 2022 to July 2024	Dr. T. Uma Maheswari-PI Dr.R.Kanagarajan (Co-PI)	Effective utilization of agricultural green waste in biosolarization as an innovative approach for ecofriendly cultivation of tomato ( <i>Solanumlycopersicum</i> l)	10.13	Govt.	RUSA 2.0-R&I
28.	2022-24	Dr. S.Babu (PI) Dr. D.Dhanasekaran (Co-PI)	Bioefficacy trail of Glyphosate 41 % SL IPA Salt as a post emergence herbicide against grassy weeds, broad leaf weeds and sedges existing in the trail	9.60	Trail	Crystal Crop Protection Ltd., New Delhi

			lot of tomato and mango orchard			
29.	2022-24	Dr. C.Kathirvelu (PI) Dr. D.Dhanasekaran (Co-PI)	Climate Resilience on Butterfly fauna of coastal areas of Tamilnadu and establishing Butterfly garden at Annamalai university Gardens	5.06	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
30.	2022-24	Dr. D.Dhanasekaran (PI) Dr. CT.Sathappan, Dr. M.Govindarajan and Dr. G.Senthilkumar	Phyto-remediation of Indoor pollution through ornamental plants with various horticultural modules for improving health and urban environment.	10.13	Govt.	RUSA 2.0 Research and Innovation-Health and Environment scheme
<b>Total Amount</b>				<b>57.04</b> <b>(Rupees in lakhs)</b>		

### 6.4.3. Technical and Supporting Staff

The following technical and supporting staff members in the Department are helping in academic, research and administrative activities.

Sl.No.	Sanctioned posts	Staff in place	Responsibility
1	Secretarial staff (ASO-1, Helper-2)	3	Assisting administrative work Maintenance of office files and official records
2	Technical staff (Orchard manager-1, DGS-1, and DFS-2)	4	Assisting in orchard operations, field trials, farm record maintenance, sale proceeds, supervision of labourers, execution of purchase and settlement of bills and recording of trial observations. DTP works, data processing and documentation
3	Farm workers /Gardeners	22	Layout of field trials and farm operations.

#### 6.4.4. Classrooms and Laboratories

##### I. PARTICULARS OF INSTRUCTIONAL UNITS IN THE DEPARTMENT

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)	SEATING CAPACITY
1.	HOD Room	320 sq.ft	1
2.	Office Room	240 sq.ft	4
3.	PG Class Room 1	320 sq.ft	15
4.	PG Class Room 2	640 sq.ft	40
5.	PG Class Room 3	720 sq.ft	40
6.	PG Class Room 4	420 sq.ft	15
7.	Ph.D Class Room 1	640 sq.ft	15
8.	Ph.D Class Room 2	320 sq.ft	15
9.	Laboratory (PG/Ph.D)	640 sq.ft	15
10.	Staff Room 1	320 sq.ft	4
11.	Staff Room 2	400 sq.ft	5
12.	Staff Room 3	640 sq.ft	12
13.	Staff Room 4	100 sq.ft	5
14.	Staff Room 5	120 sq.ft	5
15.	Staff Room 6	100 sq.ft	1
16.	Staff Room 7	320 sq.ft	1

17.	Staff Room 8	320 sq.ft	1
18.	Postharvest lab (UG) (Distillation unit, Dehydrator, Pulper, Sealer and Mixer machine)	1333 sq.ft	40

#### List of equipments available

S.No	Name of the Equipment	Equipment available in the department
1.	Weighing balance (0.001)	1
2.	Weighing balance (0.01)	3
3.	Weighing balance (200 g)	2
4.	Weighing balance 60 kg (30 kg)	1
5.	Distillation unit	2
6.	pH meter	4
7.	EC meter	2
8.	Hand refractometer	5
9.	Digital vernier calliper	2
10.	Deep freezer vertical (-20°C, 275 l)	1
11.	Thermocycler unit	1
12.	Gel documentation unit	1
13.	Stereo zoom microscope	1
14.	Compound microscope	4
15.	Hot air oven	1
16.	Dehydrator	2
17.	Magnetic stirrer (5 l)	3
18.	Micro wave oven (25 l)	2

19.	Refrigerator (320 l)	3
20.	Water bath with shaker (20 l)	1
21.	UV spectrophotometer	1
22.	Refrigerated centrifuge	1
23.	Vertical gel unit (dual unit max)	1
24.	Horizontal gel unit (medium)	1
25.	Power pack (small)	1
26.	Micropipette (10 $\mu^{-1}$ , 100 $\mu^{-1}$ , 200 $\mu^{-1}$ , 1000 $\mu^{-1}$ )	1
27.	Laminar air flow chamber	1
28.	Digital thermometer and hygrometer	5
29.	Autoclave (vertical) 250 l	1
30.	Nitrogen distillation unit	1
31.	Air conditioner (2 tonnes)	4
32.	Online UPS (10 volts)	1
33.	Digital camera (14 mph)	1
34.	Vortex	1
35.	Hot plate	2
36.	Soxhlet Apparatus	2

## II. PARTICULARS OF INSTRUCTIONAL UNITS IN ORCHARD

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Orchard	5.66 hectare
2	Shade house	1650 sq.ft

3	Nursery	3634 sq.ft
4	UG practical class Room-III	1196 sq.ft
5	UG practical class Room-IV	1196 sq.ft
6	Class Room 1 (UG)	560 sq.ft
7	Field lab (PG/Ph.D)	380 sq.ft
8	Display / UG class room-2	380 sq.ft
9	Farm manager office	200 sq.ft
10	Tractor Shed	380 sq.ft
11	Store room	936 sq.ft
12	Implement shed	216 sq.ft
13	Threshing yard	900 sq.ft
14	Seed processing and storage unit	125 sq.ft
15	Farm fencing	1.05 km

### III. PARTICULARS OF INSTRUCTIONAL UNITS IN FLORICULTURE AND MEDICINAL PLANTS AREA

S.NO	NAME OF THE INSTRUCTIONAL UNITS	SIZE (hectare/square feet)
1	Floriculture and medicinal plants Unit	1.41 hectare
2	Vermicompost shed	450 sq.ft
3	NVP house 1	418 sq.ft
4	NVP house 2	418 sq.ft
5	NVP house 3	1071 sq.ft
6	Shade house	150 sq.ft

7	Mist chamber	216 sq.ft
8	Poly house	2640 sq.ft

#### 6.4.5. Conduct of Practical and Hands-on-Training

Hands-on-training is given to students during classes:

- Experiments are designed for mass multiplication of vegetative propagules.
- Nuances in micro climate fluctuations in relation to secondary metabolites are studied
- Field stays are arranged to enlighten the switch over of practices helping in augmenting the production
- Abiotic stress effects on specific crops and alleviation procedures are exposed during field visits.
- Need based latest research progress in central institutes are planned during outstation programmes.
- Marketing strategies of commercially important crops are being taught through private agencies.

Field visits/ visit to renowned institutes, industries, progressive farms etc,

Field visits are arranged for the students to

- Identification of value added byproducts of plantation crops
- Processing industries on beverages
- Extraction units alkaloids
- Distillation units for essential oils
- Central institutes
- Herbal products units
- Value added by products units

#### 6.4.6. Supervision of students in Ph.D. Programme

Each Ph.D. scholar shall have a Research Advisory Committee (RAC) to guide the scholar in carrying out his/her programme.

RAC consists of not fewer than four with the Supervisor as Chairperson. The Research Advisory Committee should have representatives from the major and minor fields. The Research Supervisor should convene a meeting of the Research Advisory Committee at least once in a semester. The research credit evaluation form should be communicated to the Head of Department and the Director DARE for information.

RAC will discuss, advise and recommend on all matters connected with the scholar's research from admission till the submission of the thesis. Approve the topic of research and the synopsis. Assess and approve the progress reports of Ph.D. scholars in the prescribed format and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D. If necessary, recommend and approve change of title of dissertation/

thesis and change of Research Supervisor. Conduct and supervise the presentation by the candidate of the final draft of his/her proposed thesis for approval before the submission of synopsis of the thesis to the University and to give a certificate to this effect to be submitted along with the synopsis. The Research Advisory Committee will meet every semester. To scrutinize the research proposal / progress report submitted by the research scholar. To assess the conduct of experiments/field work, peruse laboratory notebooks, data recording, analysis, and publication. To review and endorse the annual progress report of the research scholar. To approve the synopsis of the thesis. The Chairperson will convene the Research Advisory Committee meetings with intimation to the Director, DARE through the Head of the Department.

#### Students Teacher Ratio

S.No	Number of recognized Teacher for Ph.D. guidance	Academic year	Intake of students	Students Teacher Ratio
1.	33	2017-18	0	1:0
2.	33	2018-19	0	1:0
3.	33	2019-20	0	1:0
4.	33	2020-21	0	1:0
5.	33	2021-22	1	1:33

#### 6.4.7. Feedback of stakeholders

Constant feedback is obtained from the stakeholders as given below.

**Students:** The feedback about the curriculum and teaching methodology are obtained from the students every semester after completing the course. These comments are reviewed and considered while revising the syllabus. Department uses the feedback for enhancing the audio-visual aids, advanced laboratory equipments, e- journals. Apart from this the mentor-mentee system enables the teachers to obtain constant feedback from students. In the year 2019-20 the students expressed there difficulty the clearing Swayam and NPTEL.

**Employers, those who come for campus placements:** Based on the feedback from employers, skill development and personality development programmes are conducted in addition to regular curriculum content.

**Farmers:** Feedback is regularly obtained from farmers during Farmers Day, field visits, and field trials.

**Industries:** Quality sustenance and quality enhancement measures in curriculum development process is done by restructuring the course contents based on requirement prescribed by the industry people during our industrial visits.

**Entrepreneurs:** Based on the feedback from entrepreneurs, the contents for skill development and personality development programmes and Experiential Learning Programmes are decided and implemented.

**Govt. officials:** Feedback obtained from Government officials are included during the revision of courses for PG research programmes.

**Action taken:**

- Soft skill development training is provided to students.
- Personality development courses and technical skill programmes are organised.
- Students are taught to prepare for competitive examinations like NET, ICAR-JRF and SRF.
- Number of field visits are increased learning production technologies.
- Value added courses are offered to students.
- Laboratory timing are extended even during holidays for the access of the students.

**6.4.8. Student intake and attrition in the programme for last five years Ph.D. (Hort.) Plantation Spices, Medicinal and Aromatic crops**

Actual student admitted in last five years					Attrition (%)				
2017-18	2018-19	2019-20	2020-21	2021-22	2017-18	2018-19	2019-20	2020-21	2021-22
-	-	-	-	1	-	-	-	-	-

**Salient research achievements**

- The Department of Horticulture has contributed to the Horticulture sector by researching upon the need based objectives in the coastal area.
- Plantation, Spices, Medicinal and Aromatic Crops are recently gaining more importance in the world market. Department of Horticulture, Faculty of Agriculture, Annamalai University. Conducting major research on crop improvement and crop management of Plantation, Spices, Medicinal and Aromatic Crops. The following salient research finding has been made during the period from 2017 to 2022.
- The propagation techniques like sett multiplication in turmeric, seed germination & seeding vigour in areca nut, rooting and semi hardwood cutting in betel vine, standardization of propagation techniques in long pepper, seed dormancy breaking techniques in turkey berry plant, rooting medium in Malabar nut and rooting and sprouting in black pepper has been carried out and identified the best techniques for mass multiplication of the crops.
- The use of organic nutrients like FYM, Vermicompost, neem cake and biofertilizers and INM were documented to improve the vegetative growth, yield and quality in Aloevera, Cashew, Gymnema, Kalmegh, Red ginger, Medicinal coleus, Sacred basil, Senna, Vettiver, Turmeric, Coriander, Centella and Ambrette.
- The crop improvement work on genetic variability of turkey berry, Kalmegh and near by state tamarind were undertaken. The genotypes were collected from different zones of Tamilnadu and in and around Tamilnadu. Totally 20 genotypes were collected and the major variability were identified on morphological, physiological, yield and quality parameters.

- In turkey berry plant, the prickle less genotype and in kalmegh, brown coloured stem genotype and in tamarind, best genotypes were identified for sodic soils.

#### 6.4.9. ICT Application in Curricula Delivery

A smart class room facility, six computers with internet facility and two LCD projectors and smart TV help in making the teaching enabled with ICT in the Department. Video facilities available in Department help us to cast videos on precision farming practices pertaining to crop production and value addition, of Plantation, Species, Medicinal and Aromatic crops. PPTs are designed and updated regularly to teach the syllabus content in a way to make the students understand better. Mobile Apps and Google class room are used and students are exposed to these Apps to keep them aware of the current trends.



TURKEY BERRY PLANT



BLACK TURMERIC FEILD



POST HARVEST LAB

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of PG and Ph.D Degree Programmes, separately, and to be presented college-Wise.

6.4.11 Since the accreditation of Programmes is related to the all India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12 Certificate (Applicable when SSR is submitted for Programme)

I, the Dean, Faculty of Agriculture, Annamalai University hereby certify that the information contained in the section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



**DEAN  
FACULTY OF AGRICULTURE  
ANNAMALAI UNIVERSITY**

Signature of Dean of the College with Date & seal

**ANNAMALAI**  **UNIVERSITY**

(NAAC accredited with 'A+' Grade)

The following recommendations were made by the various **Board of Studies comprised in the Faculty of Agriculture** and duly approved by the Faculty in its meeting held on 30.05.2022.

1. Revision of curriculum as per the ICAR Fifth Dean's Committee recommendations - On the recommendations of the NCG, 19 Broad Subject Matter Area (BSMA) - along with regulation, reference books and scheme of examination for the B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture with effect from academic year 2021-22.
2. Adoption of the following recommendations were made by the UG Board of Studies that from the existing academic year 2022-2023:
  - i. The B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture 50 per cent of students will undergo VII Semester and remaining 50 per cent of students will undergo VIII semester courses in the VII Semester and Vice-versa in the VIII semester.

<b>Weeks</b>	<b>Nature of work</b>
First	Project planning and writing
Second	Presentation before committee constituted by HOD
Third – Seven	Project Implementation
Eight	Mid Term Review- Presentation and group discussion
Nine – Ten	Project Implementation
Eleven and twelve	Seminars
Thirteen and fourteen	Exhibition
Fifteen	Project report submission and final evaluation

- ii. In the B.Sc. (Hons.) Agriculture and B.Sc. (Hons.) Horticulture programmes, the Department of Agricultural Economics and Department of Agricultural Extension are excluded from conducting the course EXP. Experiential learning as per the ICAR Fifth Dean's Committee recommendations based on the recommendations of the National Core Group (NCG), 19 Broad Subject Matter Area (BSMA).
- iii. In the B.Sc. (Hons.) Agriculture and B.Sc. (Hons.) Horticulture programmes, condonation of attendance deficiency may be considered by the Vice-Chancellor, only in case the student secures minimum 50 per cent of attendance in practical and theory classes separately and that too for genuine medical reasons.
- iv. In the existing academic year 2022-2023 for B.Sc. (Hons.) Agriculture and B.Sc. (Hons.) Horticulture programmes, students should possess hall ticket before writing practical and final theory examinations.
- v. In the B.Sc. (Hons.) Horticulture programme, the course on Horticultural Industrial Training handled till now by the Department of Horticulture will henceforth be handled by the Department of Agricultural Economics.
- vi. Adoption of the recommendations, were made by the nine PG Board of Studies in the Faculty of Agriculture for revision of curriculum as per the recommendations of the National Core Group (NCG), 19 Broad Subject Matter Area (BSMA) - along with regulation, curriculum and syllabi for the 15 programmes

of M.Sc., (Ag.) / (Horti.) / MBA (Agri. Business) with effect from academic year 2022-23.

3. Adoption of recommendations, were made by the nine PG Board of Studies in the Faculty of Agriculture for Revision of curriculum as per the recommendations of the NCG, 19 Broad Subject Matter Area (BSMA) - along with regulation, reference books and scheme of examination for the 15 Ph.D. programmes offered by various departments in the Faculty of Agriculture with effect from academic year 2022-23.
4. Adoption of recommendations, were made by the nine PG Board of Studies in the Faculty of Agriculture for Introduction of Ph.D. Programmes as part time (Inservice candidates) and Ph.D. Programme (external) as per the existing common rules and regulations framed as per UGC guidelines and approved by the University for Ph.D. programmes with effect from academic year 2022-23.
5. Change of nomenclature were made for the following M.Sc. and Ph.D. Programmes offered by the department of Horticulture as per the recommendations of the 19 BSMA committee of ICAR with the existing regulation and syllabi with effect from the academic year 2022-2023.

<b>S.No.</b>	<b>Existing Nomenclature</b>	<b>Revised Nomenclature</b>
1.	M.Sc. (Hort.) in Fruit Science	M.Sc (Hort.) Fruit Science
2.	M.Sc (Hort.) in Vegetable Science	M.Sc (Hort.) Vegetable Science,
3.	M.Sc.(Hort.) in Floriculture and Landscape Architecture	M.Sc (Hort.) Floriculture and Landscaping

4.	M.Sc.(Hort.) in Plantation, Spices, Medicinal and Aromatic crops	M.Sc.(Hort.) Plantation, Spices, Medicinal and Aromatic crops
5	Ph.D., (Hort.) in Fruit Science	Ph.D. Fruit Science
6.	Ph.D., (Hort.) in Vegetable Science	Ph.D. Vegetable Science
7.	Ph.D., Hort.) in Floriculture and Landscape Architecture	Ph.D. Floriculture and Landscaping
8.	Ph.D., Hort.) in Plantation, Spices, Medicinal and Aromatic crops	Ph.D. Plantation, Spices, Medicinal and Aromatic crops

6. Change of nomenclature for the Programme M.Sc.(Ag.) Agricultural Entomology as M.Sc.(Ag.) Entomology offered by the department of Entomology as per the recommendations of the 19 BSMA committee of ICAR with the existing regulation and syllabi with effect from the academic year 2022-2023.

7. Change of nomenclature for the following M.Sc. and Ph.D. Programmes offered by the department of Genetics and Plant Breeding as per the recommendations of the 19 BSMA committee of ICAR with the existing regulation and syllabi with effect from the academic year 2022-2023.

<b>S.No.</b>	<b>Existing Nomenclature</b>	<b>Revised Nomenclature</b>
1.	M.Sc.(Ag.) Plant Molecular Biology and Bio- Technology	M.Sc.(Ag.) Molecular Biology
2.	Ph.D. Plant Molecular Biology and Bio- Technology	Ph.D. Molecular Biology and Bio- Technology

8. Change of nomenclature for the following M.Sc. and Ph.D. Programmes offered by the department of Soil Science and Agricultural Chemistry as per the recommendations of 19 the BSMA

committee of ICAR with the existing regulation and syllabi with effect from the academic year 2022-2023.

<b>S.No.</b>	<b>Existing Nomenclature</b>	<b>Revised Nomenclature</b>
1.	M.Sc.(Ag.) Soil Science and Agricultural Chemistry	M.Sc.(Ag.) Soil Science
2.	Ph.D. Soil Science and Agrl. Chemistry	Ph.D. Soil Science

9. Change of nomenclature for the Programme MBA (Agri-Business) as MBA (Agri-Business Management) offered by the department of Agricultural Economics as per the recommendations of the 19 BSMA committee of ICAR with the existing regulation and syllabi with effect from the academic year 2022-2023.

10. Change of nomenclature for the following M.Sc. and Ph.D. Programmes offered by the department of Agricultural Extension as per the recommendations of the 19 BSMA committee of ICAR with the existing regulation and syllabi with effect from the academic year 2022-2023.

<b>S.No.</b>	<b>Existing Nomenclature</b>	<b>Revised Nomenclature</b>
1.	M.Sc.(Ag.) Agricultural Extension	M.Sc.(Ag.) Agricultural Extension Education
2.	Ph.D. Agricultural Extension	Ph.D. Agricultural Extension Education

**Sd.**

**Chairman / Dean, Faculty of Agriculture**