

GAGRVAC01 - ORGANIC RESOURCES FOR SUSTAINABLE AGRICULTURE (1+1)

OBJECTIVES:

- Students will gain knowledge about organic inputs for sustainable Agriculture.
- Students will be practiced to prepare liquid formulation like Panchakavya, Dasakavya and Amirthakaraisal etc., and get exposure on innovative organic farm products and certification.

COURSE OUTCOMES

- To understand information pertaining to organic inputs
- To develop sustainable indigenous farming practices
- Student will gain basic and practical knowledge on preparation of organic liquid formulations.
- Will become capable of doing marketing of products

THEORY

Unit I: Organic farming

Organic farming – introduction – concepts – status of organic farming in World and India – principles and practices for progressive organic cultivation – good health – zero hunger – Indigenous Technical Knowledge (ITK).

Unit II: Organic inputs

Organic inputs for higher yield in sustainable agriculture - bulky organic manures. life on land – types of compost – aerobic method – anaerobic, concentrated organic manures – green manuring – insitu – green leaf manure. climate action – biodiversity – crop rotation – crop residues – mulching – life below water – diatoms – spirulina – sea weeds

Unit III: Liquid organic inputs

Quality inputs responsible for soil health - organic liquid formulation – importance – innovation of on farm products - Panchagavya – Vermiwash – Amirthakaraisal – Fish amino acid – Beejamrit – Jeevamrit – Dasagavya – Amritpani – Sanjivak – Agniashtra – Neemashta – Brahmashta – Kunjapala.

Unit IV: Biological source of nutrients

Bio intensive nutrient management – uses – nitrogen fixing microbes – Azospirillum – Rhizobium – Azotobacter – Blue green algae – Beijerinckia – Frankia.

Unit V: Organic certification

Organic certification – quality education in organic farming – purpose and process – systems in India – national programme – scope – operational structure – NSOP – responsible consumption and production. Current stream of thoughts.

PRACTICAL

Resource inventory of organic farm – soil sampling and analysis for organic carbon and pesticide residues/contaminants – raising of green manures crops and incorporation techniques – recycling of wastes – quantification of nutrients from organic sources and application of manures and bio-fertilizers – ITK's preparation and application – organic crop

production – visit to bio pesticide units, bio control agent units – production techniques – visit to organic farms and organic outlets – economics of organic crop cultivation.

REFERENCE:

1. Balasubramanian.R, K. Balakrishnan and K. Sivasubramanian, 2013. Principles and Practices of Organic Farming, Satish Serial Publishing House.
2. Dahama, A.K. 2009. Organic Farming for Sustainable Agriculture, Agrobios publishers.
3. Palaniappan S.P. and K. Annadurai, 2018. Organic Farming-Theory and Practice, Scientific Publishers.
4. Reddy S. R., 2017. Principles of Organic Farming. Kalyani Publishers, Ludhiana.
5. Somasundaram.E, D. Udaya Nandhini and M. Meyyappan.2019. Principles of Organic Farming with Theory and Practice. New India Publishing Agency, New Delhi.

E-RESOURCES.

1. www.organicaginfo.org.
2. <http://www.navdanya.org/attachments/Organic-Farming3.pdf>
3. <http://casfs.ucsc.edu/about/publications/Teaching-Organic-Farming/PDF-downloads/TOFG-all.pdf>
4. [http://nsdl.niscair.res.in/123456789/670Revised Organic farming.pdf](http://nsdl.niscair.res.in/123456789/670Revised%20Organic%20farming.pdf)
https://www.coabnau.in/uploads/1609844393_Agron.5.6.pdf