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## Patent Search

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### Abstract:

The Integral Larval Grub Composting Reactor (ILGCR) is undoubtedly one of the best bioreactor systems which have been fabricated with an intention of wholesome waste treatment under a single platform. Unlike the existing reactors, the above-mentioned novel reactor is capable of addressing a wide variety of solid and liquid waste via the decomposition activity. The reactor is capable of auto pupal segregation. It has been designed such a way that it strengthens the zero discharge concept. In the case of maximum attention use to be paid towards the 1st inster stage namely, larva and the innovative technique prolongs the larval period and hence the treatment efficiencies get increased in attributed to the minimization of the treatment period (i.e. 2 weeks). Additionally, it accelerates the body growth factor of the larvae and it has found that the larvae introduced to this reactor grow approximately double to the larvae introduced to the existing bioreactors which are readily available in the market. This is due to the multiple beneficial and novelty components, the above technology clearly gains superiority over the conventional bioreactor system.

### Complete Specification

**Claims:**The Integral Larval Grub Composting Reactor (ILGCR) is the only reactor designed ever to degrade and stabilize solid and liquid waste under a single platform through larval feeding activity. The conversion rates are significantly higher and the maintenance of elevated moisture level prolonged the larval inster stage, which is the prime period from the waste degradation aspect. It also enhances the body mass index of the larvae up to twice than the normal and enhances the feasibility of the larvae even further in bio-diesel production and nutri-culture. , **Description:**1. Reactor Details

The reactor consists of two major working elements namely, waste conversion/maturation element and liquid circulation and recirculation unit. Rest of the subordinate units are there to support the fundamental working procedure. Fig.1 shows the overview of the bioreactor. It comprises two upper-head tanks with the flow regulators, a sprayer, a grub composting area, pupal segregation and removal bucket, leachate drain with stopper, and a leachate collection tank with a recirculation system. Two peristaltic pumps are required in order to run the operation in continuous mode.

The different working elements of the entire bioreactor system have been explicitly indicated in Fig.2.

In order to provide a clear idea about the fabricated pilot production system, an overview of the plan has been enclosed below in Fig. 3.

#### 2. Description and Function of Each Component

- Initially the waste gets introduced into the active composting zone, where larvae use to work upon it and decompose the waste

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