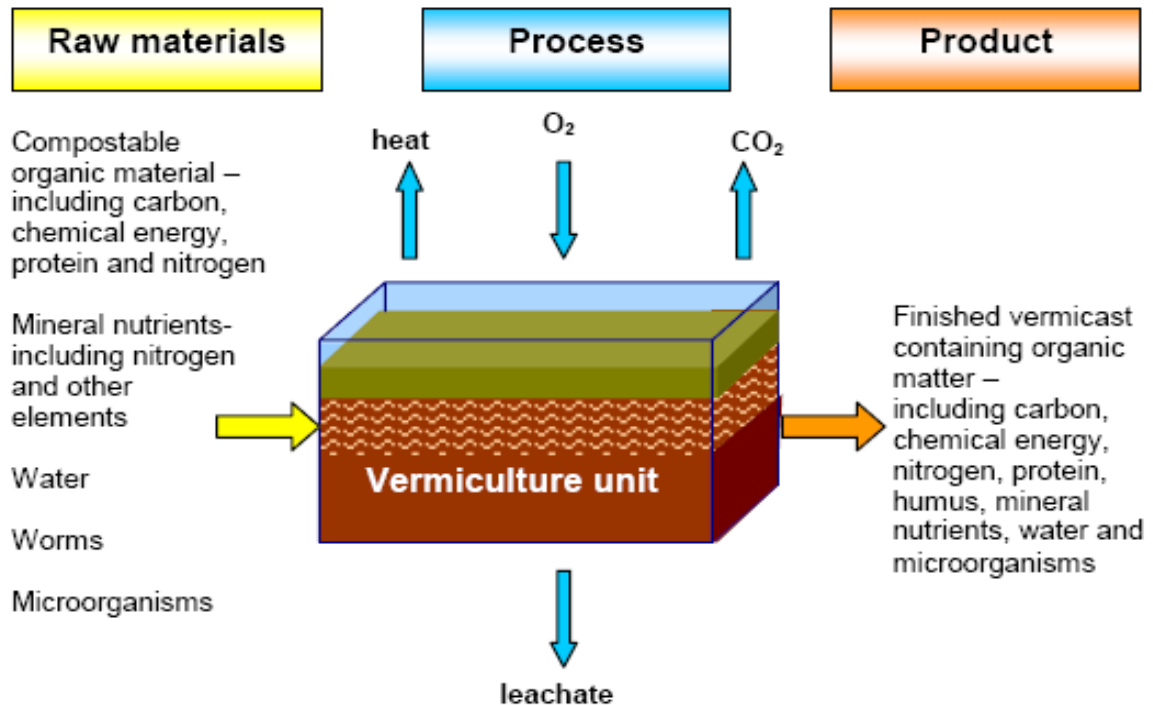


Basic Science of vermiculture

Processing of compostable organic materials via vermicomposting is an aerobic i.e. a high oxygen process performed by composting worms and micro-organisms. You can see in this diagram that in the vermicomposting process organic waste materials get converted into organic fertilizer by composting worms.

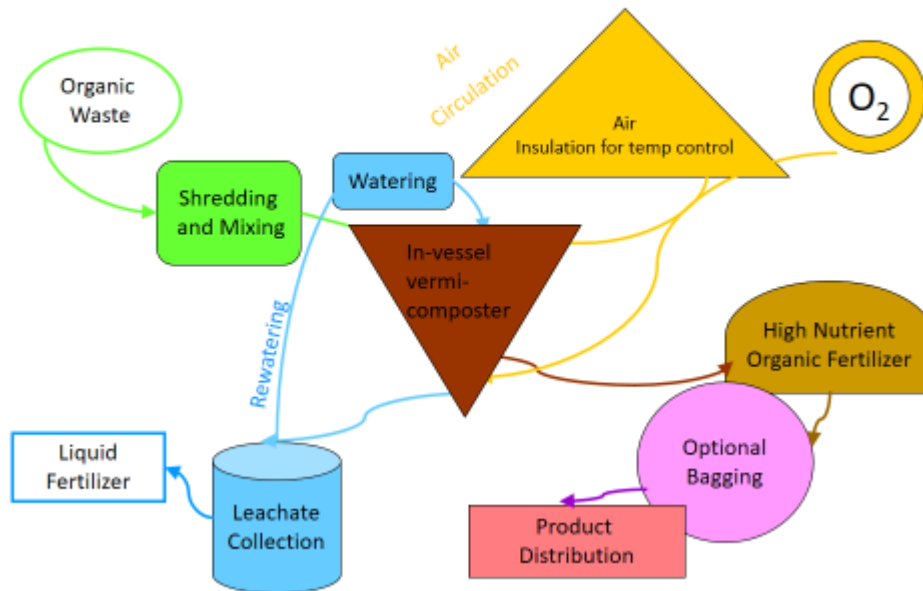


Ideal conditions include:

- ✓ Air - at least 10% oxygen (O₂) present in the bedding where the worms are actively feeding (there is 21% O₂ in normal air);
- ✓ Moisture - moisture content of the bedding material should be between 60 and 80%;
- ✓ Warmth - ideal bedding temperatures are between 20 and 30⁰c but worms will survive between 5 and 40⁰c;
- ✓ Food - such as fruit, vegetables, mixed food organics, paper, cardboard etc.;
- ✓ Absence of pests - insect larvae compete with the worm population and pose a public health hazard; and
- ✓ Protection from predators and environmental extremes.

In-vessel vermiculture systems overcome the drawbacks of traditional vermiculture systems providing a hassle free method for waste management. Our systems provide an ideal environment for the worms to decompose wastes in the most efficient manner.

Vermigold Organic Waste Digester System Flow Chart



Vermigold Organic Waste Digester



Organic Waste Shredder



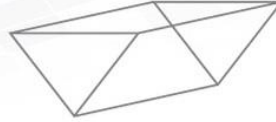
The term in-vessel signifies a containerised unit in which vermicomposting, composting or anaerobic digestion-based processes are performed. In-vessel systems are often used for treatment of putrescible organics in populated areas as they have minimal or no significant impact on the environment (eg. through the generation of odour, leachate or attraction of pests or vermin).

The term continuous flow signifies that the process of waste loading can be performed continuously without any time restriction as experienced in batch systems. Also the release of vermicompost is on a continuous basis due to gravity. The fertilizer is collected at the bottom in easily handled plastic trays. Loading of waste is from the top. Continuous flow technology is the most efficient type of on-site, vermiculture system and the least labour intensive. In-vessel systems have a very fast processing period for conversion of waste material into vermicompost in 7 days. In-vessel systems can store organic waste material for upto 30 days without causing any foul odours.

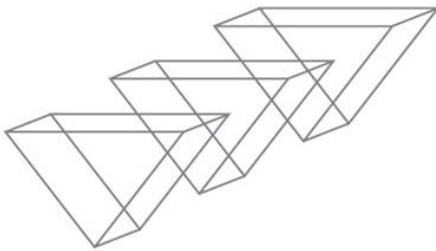
DESIGN CONCEPT



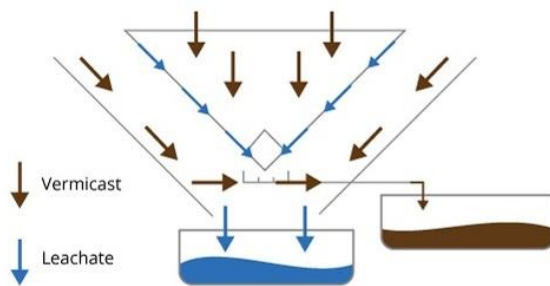
2 dimensional traditional Compost/Vermiculture pit
Single plane surface working area



3 dimensional concept of Digester
3x surface working area



- ✓ Optimized further by designing in multiple cells, increases SWA (Surface Working Area) further and enhances oxygenation of mass.
- ✓ Cell width and spacing optimized.
- ✓ Liquid collected from base and returned to a tank.



System Operations

- 🌱 Collection of segregated organic waste at selected site.
- 🌱 Load the waste into the shredder.
- 🌱 Load the waste pulp into the organic digester.
- 🌱 Daily automatic collection of high nutrient solid & liquid fertilizer.



ORGANIC WASTE



SHREDDER



ORGANIC DIGESTER



VERMICOMPOST - VERMIWASH