

Government Degree college, Tandur, vikarabad (Dist



Department of Zoology

students study project

2021-2022

Title..... vermicopost

Vermicomposting

"Vermicomposting is a process in which the earthworms convert the organic waste into manure rich in high nutritional content."

Vermicomposting is the scientific method of making compost, by using earthworms. They are commonly found living in soil, feeding on biomass and excreting it in a digested form.

Vermiculture means "worm-farming". Earthworms feed on the organic waste materials and give out excreta in the form of "vermicasts" that are rich in nitrates and minerals such as phosphorus, magnesium, calcium and potassium. These are used as **fertilizers** and enhance soil quality.

Vermicomposting is comprises two methods:

- **Bed Method:** This is an easy method in which beds of organic matter are prepared.
- **Pit Method:** In this method, the organic matter is collected in cemented pits. However, this method is not prominent as it involves problems of poor aeration and waterlogging.

Also, refer to **Morphology and Anatomy of Earthworm**

Process of Vermicomposting

The entire process of vermicomposting is mentioned below:

Aim

To prepare vermicompost using earthworms and other biodegradable wastes.

Principle

This process is mainly required to add **nutrients** to the soil. Compost is a natural fertilizer that allows an easy flow of water to the growing plants. The earthworms are mainly used in this process as they eat the organic matter and produce castings through their digestive systems.

The nutrients profile of vermicomposts are |

- 1.6 per cent of Nitrogen.
- 0.7 per cent of Phosphorus.
- 0.8 per cent of Potassium.
- 0.5 per cent of Calcium.
- 0.2 per cent of Magnesium.
- 175 ppm of Iron.

- 6.5 ppm of Manganese.
- 24.5 ppm of Zinc.

Garbage:

The trash, waste materials and all the unwanted and used products are collectively called as Garbage. This mainly includes wastes from the kitchen, wastes from vegetables and fruits, spoiled food products, animal wastes, waste papers, dried leaves, and plastic materials, husk, weed, cattle wastes, and other waste products that are produced on a daily basis. These wastes are collected in bins.

There is some part of the waste that can be recycled and reused. Therefore, it is important to segregate waste. Let us have a detailed look at the management of garbage such that it does not harm the **environment**.

Sources of Garbage

Domestic waste such as sewage and kitchen waste.

Classification of Garbage

The garbage is classified into two types –

- Biodegradable wastes
- Non-biodegradable wastes

Biodegradable wastes

Any organic matter, which can be decomposed into a simpler substance with the help of microbes is called as the biodegradable wastes. They are eco-friendly and includes all the organic wastes from plants sources, agricultural wastes, etc.

Non-biodegradable wastes

The wastes that cannot be decomposed and create pollution in our environment are termed as the non-biodegradable wastes. These wastes can be recycled and include plastics, paints, metals, glasses, etc.

How is Garbage recycled?

These Garbage bins are carried to the different recycling plants, where the wastes are segregated into two different groups. All dry wastes, including the newspapers, plastic products, glass items, and other waste are separated into different containers where it can be recycled and reused to produce new useable products.

The biodegradable wastes are collected in separate containers and are used for producing manure through the process of Composting. Few of these materials are also used for producing **biogas** and biofuel.

Along with dumping and segregating the wastes, we have to move a step ahead in reducing the amount of garbage we produce by following the principle of 3R's –

Reduce, Reuse and Recycle

By following the 3 R's we can save energy, trees, and other natural resources and protect the environment.

Reduce: Consumption should be reduced. A product should be used only when it is extremely important.

Reuse: Items such as old newspapers, envelopes can be used for different purposes instead of throwing them away.

Recycle: Items such as glass, paper, aluminium, plastic can be recycled and used again.

Garbage Disposal

Garbage is usually dumped in the bins kept on the roadsides or given to the garbage collectors. The garbage is collected by the municipality workers from the dumping sites and is taken to landfill sites away from the residential areas.

The garbage is segregated and the items that can be recycled are sent for recycling. The rest of the items are left on the landfill site and the site is covered with soil.

The agricultural waste such as leaves, animal excreta and stalks are used by the farmers to prepare compost. For this, the agricultural waste is collected in a compost pit and is covered with soil. It is left for about two months until all the waste decomposes. This is known as compost and is an excellent form of manure.

This was a brief introduction on Garbage in, garbage out, its importance and garbage disposal.

Materials Required

- Water.
- Cow dung.
- Thatch Roof.
- Soil or Sand.
- Gunny bags.

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