



EARTHLY GOLD: A FARMER'S GUIDE TO VERMICOMPOST

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INTRODUCTION

Vermicompost, is the result of a decomposition process involving various worm species, including red wigglers, white worms, and earthworms. These worms work together to break down a mixture of vegetable or food waste, along with bedding materials, ultimately producing vermicast. This entire process is known as vermicomposting, and the cultivation of worms for this purpose is called vermiculture. Vermicompost is a valuable product rich in water-soluble nutrients, serving as an exceptional organic fertilizer and soil conditioner. It finds widespread use in farming, particularly in small-scale sustainable and organic agriculture practices.



PHASES OF VERMICOMPOSTING

Vermicomposting is a multiphase process:

Phase 1: This initial stage involves waste collection, shredding, mechanical separation of materials like metal, glass, and ceramics, and the storage of organic waste.

Phase 2: Organic waste is predigested for around twenty days by combining it with cattle dung slurry. This process partially breaks down the material, making it suitable for consumption by earthworms. It's important to use dried cattle dung and biogas slurry, as wet dung is unsuitable for vermicompost production.

Phase 3: Preparing the earthworm bed. A concrete base is essential for vermicompost preparation. Loose soil allows worms to burrow into the ground, and when watering, soluble nutrients are lost into the soil.

Phase 4: After vermicompost collection, earthworms are gathered, and the composted material is sieved to separate fully composted material. Partially composted material is returned to the vermicompost bed.

Phase 5: The final step involves storing the vermicompost in an appropriate location to maintain moisture levels and promote the growth of beneficial microorganisms.

THE FIVE ESSENTIAL COMPOST WORMS NEED:



1. An inviting habitat, often referred to as "bedding."
2. A source of nourishment for the worms.
3. Sufficient moisture, with a water content exceeding 50% by weight.
4. Proper aeration to ensure oxygen availability.
5. Protection from extreme temperature variations.

PROCEDURE

To create compost, you can use either a plastic or concrete container, with the size depending on the available raw materials.

1. Gather the biomass and expose it to the sun for 8-12 days.
2. Create a cow dung slurry and sprinkle it onto the biomass heap for accelerated decomposition.
3. Begin by adding a layer (23 inches) of soil or sand at the tank's base.
4. Prepare a fine bedding by mixing partially decomposed cow dung, dried leaves, and other biodegradable materials collected from fields and the kitchen. Spread this mixture evenly on top of the sand layer.
5. Continue layering the biomass and partially decomposed cow dung into the tank, building it up to a depth of 0.5-1.0 feet.
6. After adding all the biowastes, introduce earthworms into the mixture and cover it with dry straw or gunny bags.
7. Regularly sprinkle water to maintain proper moisture levels in the compost.
8. Shield the container with a thatch roof to prevent the entry of ants, lizards, mice, snakes, and to protect the compost from rain and direct sunlight.
9. Monitor the compost to prevent overheating and ensure the right moisture and temperature are maintained.

ADVANTAGES OF VERMICOMPOST:

1. Rich in essential plant nutrients.
2. Enhances overall plant growth, promoting new shoots and leaves, and improving produce quality and shelf life.
3. Easy to apply, handle, and store, without unpleasant odors.
4. Improves soil structure, aeration, water holding capacity, and prevents erosion.
5. Enriched with beneficial microorganisms and earthworm cocoons.
6. Neutralizes soil acidity.
7. Increases the efficiency of chemical fertilizers and prevents nutrient losses.
8. Free from pathogens, toxic elements, and weed seeds.
9. Minimizes pest and disease incidence.
10. Accelerates organic matter decomposition in the soil.
11. Contains valuable vitamins, enzymes, and hormones for plant growth.

