

3. Oilseeds----- 3-5 t/ha
4. Fruits----- 3-4 kg/plant
5. Flower----- 40-50g/plant
6. Spices crops----- 2-10 kg/plant
7. Plantation crops----- 5 kg/plant

Precaution :

1. After inoculation of worms in pit, regular watering should be done, to keep the feeding material moist (30-40%). Depending upon the weather condition 1 or 2 times watering is necessary.
2. During summer months covering of vermibeds with gunny bag is essential as it prevent moisture loss from beds and restrict upward movement of worms.
3. After harvesting of vermicompost, if the feeding material is compact, loosen it by using a bamboo stick for easy movement of worms.
4. Periodical removal of cast also increases efficiency of worms, as upward movement for casting is reduced.
5. Temperature should be maintained between 20-30°C by maintaining shade green house net cover and regular watering.
6. In the last layer of feeding material almost all worms will get accumulated. Introduce these worms in another pit which is ready to inoculate with worm. Two pits will to utilize worms more efficiently.

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VERMICOMPOSTING: A VIABLE TECHNOLOGY FOR ENTREPRENEURSHIP



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Vermicomposting is a process of converting organic waste into vermicompost through the activities of earthworm. It is a method of composting where earthworms eat the decomposed materials and excrete it out as casting which is known as vermicast or vermicompost.

Materials required :

1. Organic waste such as kitchen waste, fallen tree leaves, waste generated from agricultural activities such as harvesting, threshing, planting/transplanting, weed biomass etc.
2. Animal dung such as Cattle dung, goat dung, pig dung, poultry droppings.
3. Earthworm: Commonly used species are *Eisenia foetida*, *Eudrillus eugeniae*, *Perionyx excavatus* and *Perionyx sansbaricus*.
4. Sieve: 3-4 mm
5. Bucket and watering canes.

Methodology :

1. **Site selection and construction of pit:** The site should be cool, moist and shady and should be in upland and free from termite and red ant activity.
Pit size: Length as per convenient, Breadth---2.5-3.0 feet, Depth----2.5 feet
The floor must be plastered and a canal around the outside of the wall should be made to prevent ant.
2. **Predecomposting of organic waste:** Organic waste materials (Chopped into 5 cm pieces) have to be pre-decomposed in a pit size of length 2m, breadth 1m and depth 0.9-1m. Put organic waste (80%) and cowdung (20%) layer by layer. Repeat layer till the pit is fill and leave it for 20-30 days. During this period filled materials should be turned at 10 days intervals and moisture should also be maintained.
3. **Filling of Vermicompost pit :** A layer of 15-20 cm of chopped dried leaves/thatch/grass/straw is kept as bedding material. The processed wastes are then to be filled layer (10-15 cm) wise by cutting vertically and each layer should be made wet while filling. Keep about 10 cm from the top of the pit unfilled. Before first filling the pit should be plastered with cowdung for better result.
4. **Release of earthworm :** Optimum number of earthworms to be introduced is 2000-3000 nos/sqm.
5. Regular watering is must to keep the food materials moist (30-40%). Avoid excess watering.
6. Cover on food materials by using gunny bags or black plastics sheet which helps to reduce water lost and to maintain temperature.
7. **Harvesting and storage:** When the material becomes granular, blackish in colour just like used tea leaves, it is ready to harvest. At this time stop

watering 7 days prior to harvest. Scrape this materials upto the depth where there are no worms. Collect all scraped materials and make a heap and leave it for 2-3 days. Then it will be easier to separate worms manually for subsequent Vermicomposting.

8. **Drying and sieving:** Dry it in the shade for 12 hrs to the moisture level upto 20-25%. Then sieve it by using 3-4mm sieve and bag it for storage.

Nutrient content : Vermicompost contains 1.0,0.5 and 1.5% or more respectively of NPK nutrients and also contains certain hormones and enzymes . In addition to these a large number of beneficial microorganisms also are present in Vermicompost.

Characteristics of good worm :

1. Wide adaptability & higher growth rate.
3. Less preference to feeding material.
4. More cocoon production with less hatching period.
5. Active throughout the year.

Advantages of Vermicompost :

1. Vermicompost helps to boost productivity of crops by 40% even at 20-60% lower nutrient input.
2. Vermicompost containing large number of earthworm eggs, which hatches out within a month period is equivalent to a mini fertilizer factory
3. Vermicompost improves physical structure and water holding capacity of soils and reduces irrigation water requirement of crops.
4. The pest and diseases attack also gets reduce with Vermicompost addition to soil.
5. It contains almost all essential nutrients and hormones for plant growth.
6. Helps in multiplication of microbes and control soil acidity.
7. Low investment and no need of electricity or machinery.
8. It can be produced throughout the year.
9. It helps in recycling of huge quantities of domestic, agricultural and rural industrial organic wastes thus reduce pollution.

Mode of application :

- * For field crops and vegetables, vermicompost is incorporated into the soil at the time of final land preparation and before sowing/planting of the crops
- * For horticultural crops, base application is the best method. For flower tubs and flower beds mix vermicompost with soil before planting.

Rate of application :

1. Cereals----- 2-3 t/ha
2. Pulses----- 2 t/ha