



Indian Farmer
Volume 9, Issue 10, 2022, Pp. 417-421.
Available online at: www.indianfarmer.net
ISSN: 2394-1227 (Online)

ORIGINAL PAPER



Preparation of Compost

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Article Received: 03 October 2022

Published Date: 07 October 2022

INTRODUCTION

Compost is a mass of rotted organic matter made from waste. Farm compost is compost made from farm waste such as sugarcane trash, paddy straw, weeds and other plants, and other waste. Farm compost has an average nutrient content of 0.5 percent N, 0.15 percent P₂O₅, and 0.5 percent K₂O. The nutrient value of farm compost can be increased by applying superphosphate or rock phosphate at a rate of 10 to 15 kg/t of raw material at the beginning of the composting process. Town compost is compost made from municipal waste such as night soil, street sweepings, and garbage cans. It contains 1.4 percent nitrogen, 1.0 percent P₂O₅, and 1.4 percent potassium chloride.

Farm compost is made by placing farm waste in trenches that are 4.5 m to 5.0 m long, 1.5 m to 2.0 m wide, and 1.0 m to 2.0 m deep. Farm waste is deposited in the trenches in layers. Each layer is thoroughly moistened with cow dung slurry or water. Trenches are filled up to 0.5 m above ground level. Within five to six months, the compost is ready for use.

Composting is essentially the microbiological decomposition of organic residues collected from rural or urban areas (rural compost) (urban compost).

METHODS OF COMPOSTING

Composting is done in pits of varying sizes depending on the waste material available in the Coimbatore method. The pit is first covered with a layer of waste materials. It is moistened with a 5-10 kg cow dung suspension in 2.5 to 5.0 l of water and 0.5 to 1.0 kg fine bone meal sprinkled evenly over it. Similar layers are laid one on top of the other until the material

reaches 0.75 m above ground. Finally, it is plastered with wet mud and left alone for 8 to 10 weeks. Plaster is then removed, the material is moistened with water, turned, and formed into a rectangular heap in the shade. It is left alone until it is used.

Organic waste is spread in the cattle shed as bedding in the Indore method of composting. Every day, urine-soaked material and dung are removed and formed into a 15-cm-thick layer at appropriate sites. Urine-soaked earth scraped from cattle sheds is mixed with water and sprinkled twice or three times a day over the layer of wastes. The layering process lasted about a fortnight. A thin layer of well-decomposed compost is sprinkled on top, after which the heap is turned and reformed. Old compost serves as an inoculum for the decomposition of the material. The heap is left alone for about a month. Then it is thoroughly moistened and turned. In another month, the compost will be ready for use.

The Bangalore method of composting involves spreading dry waste material 25 cm thick in a pit and moistening it with a thick suspension of cow dung in water. The moistened layer is covered with a thin layer of dry waste. The pit is filled with dry layers of material and cow dung suspension alternately until it reaches 0.5 m above ground level. It is left exposed for 15 days without being covered. It is turned, plastered with wet mud, and left undisturbed for about 5 months, or until needed.

The Coimbatore method begins with anaerobic decomposition and is followed by aerobic fermentation. The Bangalore method is the inverse. The Bangalore compost is not as thoroughly decomposed as the Indore compost, nor is it as thoroughly decomposed as the Coimbatore compost, but it is the bulkiest.



(Plate 1 : Bed prepration)



(Plate 2 : cover with sheet)



(Plate 3: Dry leaves)



(Plate 4: layer of Dry layers)



(Plate 5 : Mixing of cow dung and water)



(Plate 6: Spray the cow dung water mixture)



(Plate 7: Mixing of curd and water)



(Plate 8: Spray the curd water mixture)



(Plate 9: drygrass layer)



(Plate 10: covering of unit by polythene)



(Plate 11: Prepared compost pit)



(Plate 12: compost in Tub)

PROCEDURE

- First of all, I have putted the 8 bricks on the ground.
- I have taken different sticks and putted them on bricks so that they will work as basement for composting.
- I put some gap between earth and the pile so that there will be good aeration from below the pile.
- Take a large sheet of paper and cover the sticks properly so that no material will go down the pile.

- Take the dry leaves and spread them on the paper properly.
- The height of the dry leaves layer up to 9 inch.
- Mixed the water, cow dung and compost properly so that it is properly diluted and will be effective in whole pit.
- Sprayed the diluted mixture of cow dung and compost to the unit thoroughly so that the unit will be moistened.
- Added the nitrogen rich materials like green grasses, vegetable residues and fruit wastes to the pile.
- Mix the curd in water properly.
- Sprayed the diluted curd to the unit.
- Added carbon rich material like dry grass/litter and dry leaves.
- Sprayed the water to the unit properly so that there will be proper moisture in the unit which will increase the process.
- Covered the unit properly with the polythene.
- Sprinkle water and conversion was done time to time.
- After a gap of 45 days the pit was ready to harvest.

SUMMARY AND CONCLUSION

Composting is an option of waste management system operation that is very cheap, wealth creating, eco-friendly and sustainable. Composting of organic wastes should be encouraged by the appropriate waste management authorities. The composting reduces landfill wastes and produces organically food crops.

India produces high amount of solid wastes every day. It is very essential to recycle the solid wastes into a valuable product. We can recycle the wastes that will be benefit to our environment. India as an agriculture-based country produces more amount of agriculture waste can be recycled by agriculture waste management into better yield.