

Organic Manures

Plant residues and animal and human wastes, when naturally broken down, become a nourishing nutrient source that plants can easily absorb. These are broadly known as organic manures. The preparation and use of organic manures are rooted in indigenous knowledge systems and traditional farming practices. While synthetic fertilisers provide high levels of essential nutrients such as nitrogen, phosphorus, and potash to crops, organic manures provide a more balanced nutrient profile, though in smaller quantities, enhancing soil fertility and health with regular application.

Overview of the practice

Most organic materials can be composted to prepare manure, and the sources include:

- Crop residue – stubble (sugarcane), leaves, twigs, husks, stalks, straw (paddy and wheat), and other waste materials from crops.
- Cattle shed waste – dung, urine, and biogas plant slurry.
- Green leaf manure and green manure crops (they can also be directly incorporated without composting).
- Agroindustry by-products – bagasse and press mud, oil cakes, and fruit and vegetable waste from processing.

Poultry waste – litter and excreta.

Slaughterhouse waste – meat meal, bone meal, horn and hoof meal, blood meal, and fish waste.

Human waste – night soil, urine, sewage, sludge, and sullage.

Water hyacinth and other weeds.

Step-by-step guide



Choose a proper composting site

Organic manure is prepared in a pit, heap, or bin. Select a spot with adequate shade and proper drainage for effective decomposition.



Layer materials

Start by adding coarse materials, such as sticks, to help maintain proper airflow. Add alternating layers of green or wet materials (green leaves, fruit, and vegetable waste) and brown or dry materials (dry leaves, twigs, and crop residue). Add some soil and old compost to introduce microbes, or add an inoculum, such as fresh cattle dung or slurry, cow urine, or sour buttermilk, for faster decomposition. If the material is rich in woody substances, adding a microbial decomposer culture will speed up composting. These cultures can be obtained from nearby krishi vigyan kendras (KVKs) or agriculture universities.



Maintain moisture

Keep the pit, pile, or bin moist, as microbes thrive in damp conditions. If the pile starts to look dry, lightly wet it to revive microbial activity.



Mix the material

After 1 to 2 weeks, mix or turn the pile to promote aeration, which accelerates decomposition and prevents bad odours.



Decomposition

Normally, decomposition takes 2–3 months to form manure, depending on the temperature and the layering materials used. If an inoculum or decomposer culture is used, decomposition can be accelerated, and the manure will be ready for use in about 30 days.

Green manure crops such as Sunn hemp *(Crotalaria juncea)*, Dhaincha *(Sesbania bispinosa)*, Cluster beans *(Cyamopsis tetragonoloba)*, Jungli moth or Jangli muga *(Vigna trilobata)*, and Manila agathi *(Sesbania rostrata)* may be grown in fields and incorporated into the soil, where they decompose. Similarly, green leaf manure, such as twigs, herbs, and shrubs, may also be incorporated into the soil during land preparation (tillage).

Benefits of organic manure

- Improves soil structure and enhances long-term soil health.
- Improves soil water-retention capacity.
- Accelerates soil microbial activity.
- Aids the slow release of nutrients, resulting in reduced nutrient losses and better absorption by plants.
- Enhances crop quality and the nutrient content of food.
- Provides a cost-effective and environmentally friendly alternative.



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