

Standard Operating Procedure (SOP) for Organic Waste Composter

1. Introduction:

This document outlines the Standard Operating Procedure (SOP) for operating the organic waste composter under the Horticulture Department. The composter will be used to convert food waste (mess and food court), garden waste, and animal waste into nutrient-rich compost for the department's landscaping needs.

2. Personnel and Responsibilities:

- **Composting Supervisor:** Responsible for overall operation, including training, monitoring, and maintaining records.
- **Composter Operators:** Trained personnel who conduct daily operations, including feeding, turning, moisture control and managing the stored waste.
- **Horticulture Staff:** Responsible for collecting and delivering garden waste and saw dust to the composter, receiving finished compost, and maintaining landscaped areas.
- **Food and beverages staff:** Responsible for collecting and delivering the food waste from mess to the composter daily.
- **Administration staff:** Responsible for collecting and delivering the animal waste from animal house/lab, food waste from all food outlets except hostels, to the composter daily.

Note: The overall responsibility of the operations and maintenance of the composter shall be under horticulture department.

3. Waste Acceptance:

- Accepted Materials:
 - Food waste from mess and food court: Fruit and vegetable scraps, coffee grounds, tea bags, bread crusts, pasta, rice.
 - Garden waste: Leaves, branches, pruning's, grass clippings, small sticks.
- Rejected Materials:
 - Meat, bones, dairy products, fats and oils (attracts pests and slows decomposition).
 - Plastic, metal, glass, ceramic (contaminates compost and harms plants).



- Diseased plants, weeds with seeds (spread diseases and weeds).
- Pesticides, herbicides, treated wood (toxic to microorganisms and plants).

4. Waste Preparation:

- Food waste should be chopped or shredded to improve surface area and decomposition rate.
- Garden waste should be shredded if large branches or woody materials are present.

5. Composting Process:

5.1. System Setup:

- The composter should be located on a level, well-drained area with access to water and electricity.
- Follow manufacturer's instructions for assembly and operation of the specific composter model.

5.2. Feeding and Turning:

- Add a mix of food waste and garden waste daily in layers, maintaining a balanced carbon-nitrogen ratio (30:1) depending upon the moisture in the food waste.
- Turn the garden pile thoroughly every 3-5 days to dry it and make sure dried and brown leaves are used with addition to food waste.
- When garden waste is not available in required quantity, saw dust can be used in addition to the food waste.

5.3. Moisture Control:

- Maintain moisture content between 40-60% (damp sponge-like consistency).
- Add or remove water as per the condition of the waste mix.

5.4. Monitoring:

- Observe the pile for signs of anaerobic conditions (foul odor, slimy texture). If present, increase aeration and consider adding dry materials.

6. Product Utilization:

- Mature compost can be used directly in landscaping beds, mixed with potting soil, or stored for future use.
- Do not use immature compost, as it can harm plants.
- Keep the compost for 4-7 days in the storage racks to attain ambient temperatures.

7. Maintenance and Safety:

- Wear gloves and appropriate footwear while handling waste and compost.
- Wash hands thoroughly after handling waste and compost.
- Regularly clean and maintain the composter as per manufacturer's instructions.
- Report any safety concerns or equipment malfunctions immediately to the Composting Supervisor.

8. Recordkeeping:

- Maintain a logbook to record daily operations, including:
 - Date
 - Type and amount of waste added
 - Observations (including any issues or adjustments made)
- Keep records of compost maturity and utilization.

9. Training and Communication:

- Provide regular training to all personnel involved in the composting operation.
- Communicate effectively about the importance of proper waste segregation and composting practices.

10. Review and Revision:

- Regularly review and update this SOP as needed to reflect changes in equipment, processes, or best practices.

By following this SOP, the Horticulture Department can ensure efficient operation of the organic waste composter and production of high-quality compost for sustainable landscaping practices.

Additional Considerations:

- **Pest control:** If pests become an issue, consider using natural pest control methods like diatomaceous earth or predatory insects.
- **Odor control:** Proper aeration and moisture control are key to preventing odors. Consider covering the composter with a breathable material if needed.
- **Regulatory compliance:** Ensure the composting operation complies with any local regulations regarding waste management and compost quality.



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