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Weekly Newsletter
from Agresource Inc.
for turning waste into
opportunity

Whole Cycle Tuesday

Takeaway

For organic waste generators, mass reduction starts with a practical question: How much of what we are moving can be removed or recovered before it leaves the facility?

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"Nature does not hurry, yet everything is accomplished."

– Lao Tzu

Mass Reduction in Organic Waste Management

Every ton of organic waste carries a cost to handle, store, transport, and process. For wastewater treatment plants, food processors, and municipalities, reducing the weight of material requiring further management can improve efficiency and lower costs. This approach, known as mass reduction, helps make organic waste management more sustainable while preserving opportunities to recover useful resources.

How mass reduction works

Organic waste contains both water and solids. Mass reduction occurs when water is removed or when microorganisms break down organic matter, converting part of it into gases and water.

Dewatering and drying reduces moisture. Presses and centrifuges separate water from solids, while drying removes water through evaporation. Because water can account for much of a waste stream's weight, improving solids content can significantly reduce the tonnage that needs to be hauled. The separated water still requires appropriate management or treatment. Composting and digestion reduce the amount of biodegradable organic matter remaining in the material.

Composting uses oxygen to support decomposition, releasing carbon dioxide, moisture, and heat while producing a more stable soil amendment. Anaerobic digestion operates without oxygen and produces biogas that can be captured for energy, along with residual material requiring further management.

Mass and volume are different measurements. Grinding or compacting material may make it occupy less space without substantially changing its weight.

A small improvement can make a big difference

Consider 100 tons of material at 20% solids. That material contains 20 tons of dry solids and 80 tons of water. If dewatering increases the solids content to 25%, while retaining the same dry solids, the resulting material weighs 80 tons.

That five-percentage-point improvement removes 20 tons of water from the outgoing material, a 20% reduction in wet weight. For an operation producing material throughout the year, the hauling savings can add up.

Removing excess water can reduce truckloads and charges based on incoming wet weight. EPA identifies reduced storage and transportation costs as key benefits of dewatering.