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Weekly Newsletter
from Agresource Inc.
for turning waste into
opportunity

Whole Cycle Tuesday

"The environment is where we all meet; where we all have a mutual interest; it is the one thing all of us share." — Lady Bird Johnson

Key Takeaway

Organic matter is the heart of compost, it is one of the materials that make it valuable as a soil amendment. The percentage of organic matter in finished compost can vary widely depending on two major factors: the type of feedstocks used and the age or maturity of the compost. Understanding how these influence the end product helps producers fine-tune their process and deliver consistent, high-quality compost.

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What Affects the Organic Matter Percentage in Finished Compost

Feedstocks: The Starting Point Matters

The composition of the raw materials sets the stage for the final organic matter content.

- **High-carbon materials** such as wood chips, sawdust, and leaves start with a large proportion of organic matter. However, much of that carbon is slowly degradable, meaning it persists longer through the composting process and can keep final organic matter percentages higher.
- **High-nitrogen materials** like food waste, grass clippings, or manure decompose more rapidly and result in lower residual organic matter once the process is complete. They fuel microbial activity early in the process but leave behind a more mineral-rich product.
- **Blended feedstocks**, such as mixing yard waste with biosolids or food scraps, can balance carbon and nitrogen, producing a stable, nutrient-rich compost with a moderate organic matter percentage, typically ranging between 35% and 55% on a dry-weight basis.

The key is achieving a balanced carbon-to-nitrogen (C:N) ratio in the starting mix. A C:N ratio around 25–30:1 promotes complete decomposition without excessive loss of organic material through respiration or overheating.

Age and Stability: Time Refines the Product

As compost matures, microbes continue to break down complex organic compounds into simpler, more stable forms of carbon. Over time, this reduces the overall organic matter percentage while improving the compost's stability and humus content.

- **Younger composts** (e.g., 30–60 days old) often have higher organic matter content but can still be biologically active and unstable.
- **Cured composts** (aged 6 months or more) show lower total organic matter but higher quality, with humic substances that enhance soil structure, moisture retention, and nutrient availability.

Essentially, organic matter decreases with age, but its quality increases — shifting from raw, decomposable carbon to stable, soil-building humus.