COMPOSTING SERIES

How to Reduce Odor in Compost Systems

Managing odor is a crucial part of an enjoyable composting experience. Stinky compost piles can cause complaints from neighbors and family members, and in large-scale facilities, odors can lead to citations and fines. Odor can be controlled with some basic diagnostics and control measures.

Identify the Type of Odor and Cause

1. Materials added to the pile have an odor. Materials such as manure and fish frames can inherently cause odor problems and must be properly incorporated with more carbon-based feedstocks immediately. Coarse, dry, bulky materials, such as arborist waste, can help to absorb odors and create an aerobic state, effectively eliminating odors quickly. Turning the pile more frequently to incorporate oxygen will also help to reduce or eliminate odors from stinky feedstocks.
2. Lumping or clumped up feedstocks, such as food waste and grass clippings. Failure to adequately mix or incorporate nitrogen sources of feedstock such as kitchen or cafeteria waste, grass clippings or other green waste can create a rotten or sulfurous odor. In addition, if carbon sources within the pile are too fine or small in particle size, they may not adequately provide space for oxygen to infiltrate the pile, creating anerobic conditions and odor. Mix these materials with the proper ratio of coarse, dry, carbon-rich feedstock materials to reduce or eliminate this odor.

3. Ammonia smell when turning the pile. Excess nitrogen within the pile can cause an ammonia smell and anerobic conditions that are apparent when disturbing the pile by flipping the materials. If layers of nitrogen-rich materials, such as manure, grass clippings and kitchen scraps, are layered too thickly, they can create pockets of odorous material within the larger pile. Break up these mats and clumps within the pile and add more carbon to it. Additionally, these ammonia-producing conditions can persist if the pile is too wet, and a cover may be needed to correct the problem. When carbon-rich materials become saturated in wet weather, they can become compacted and fester within the pile, further adding to the ammonia odor. A tarp or covering can be used to give the pile a chance to drain, and additional dry, carbon-rich feedstock can be added to correct the issue.
4. Unsuitable materials were added. Materials such as oil, meat or bones, eggs, or dairy products can cause a rotten odor. Mix these items into piles in small quantities or not at all in a home composting system. In addition to a rotting odor, these materials attract vermin to the pile. Commercial compost systems should be able to properly balance these items with plenty of carbon to encourage a rapid aerobic breakdown of these materials so odor is eliminated quickly.

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