



BMPs

Best Management Practices for N.H. Solid Waste Facilities

Leaf & Yard Waste Composting

Composted leaf and yard waste is a valuable soil amendment. When added to gardens or lawns, finished compost will increase soil moisture retention, provide additional nutrients and reduce the need for chemical fertilizers. State law prohibits leaf and yard waste from being disposed of in N.H. landfills and incinerators. Therefore, composting these materials is an excellent option. Successful composting requires a basic understanding of the science.

Composting Terms & Definitions

- Feedstock – the mixture of organic wastes brought to your facility for composting.
- Greens – organic wastes high in nitrogen such as green grass, green leaves and garden cuttings.
- Browns – organic wastes high in carbon, such as autumn leaves, wood chips or sawdust.
- Carbon-to-Nitrogen Ratio (C:N ratio) – the balance of energy and nutrients needed by microorganisms.
- Windrow – a pile that is longer than it is high or wide.
- Plant Pathogens – microscopic organisms such as bacteria and viruses that are harmful to other plants.

A compost pile is a mixture of different organic material such as leaves, wood chips, animal manures and grass. Each of these materials have different C:N ratios that when mixed will create the pile's average C:N ratio. Getting the mixture right is important because the best C:N ratio for a compost pile is 30:1.

Composting Processes

- "Hot" or Aerobic Composting – requires routine turning of the pile to allow oxygen into the composting process and optimum temperatures above 140°F. The entire process takes as little as two to three months. A few hours at temperatures above 155°F is needed to kill weed seeds and plant pathogens.
- "Cold" or Anaerobic Composting – requires minimal turning of the pile, temperatures should reach 55°F, and can take up to one to two years to complete. Consider cold composting if your facility receives more browns than greens. Start with a bottom layer of wood chips to increase the flow of oxygen into the pile, layering the browns and greens, and if the pile produces odors, consider adding more browns.

Remember...

- Bacteria are the most important ingredient in the composting process.
- Shredding your feedstock helps reduce composting time, and provides better temperature distribution and heat retention.
- Temperatures can increase to more than 150°F in about three days.
- Leaf and yard waste composting does not require a permit.

The compost process is complete when the pile doesn't reheat after turning and adding water. Finished compost will have significantly reduced in volume, appears dark brown to black in color, has a crumbly texture and an earthy odor.

Best Management Practices for Leaf and Yard Waste Composting

- Mix roughly equal amounts by weight of browns and greens to provide the proper 30:1 C:N ratio.

- Pile heights should not be above 10 feet.
- To create compost quickly, turn the pile at least every two weeks or more often as needed, depending on moisture and temperature.
- Periodically check moisture levels. Grab a handful of compost from inside the pile and squeeze it. If it drips, it's too wet (see table below). If it's damp but doesn't drip, it's about right.
- Don't turn your windrows during cold winter days or during rain storms; consider watering after windy days as your windrows may dry out.

Composting: Potential Problems and Solutions

Problems	Solutions
Not heating up*	ADD water, grass or garden clippings, or manures, and TURN pile.
Too wet	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay, and TURN the pile.
Foul odor	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay, and TURN the pile.
Freezing	ADD sawdust and cardboard, paper, oak leaves and corn stalks, OR hay. Do NOT turn pile; wait for a warm day to turn.
Too dry	ADD water, grass or garden clippings, or manures, and TURN pile.

*For a compost pile that is not heating up, it may mean it's either too dry, you have too much carbon (leaves), or not enough nitrogen (green grass). Run a squeeze test; if the pile isn't too dry then try adding a feedstock, such as grass or manure, which has less carbon and more nitrogen to the pile.



Do not mix domestic waste with the leaf and yard waste compost pile.



Windrows have plenty of spacing between them and are not too tall. The piles are actively managed and clean of debris.

For additional information, contact:
 Solid Waste Management Bureau
 N.H. Department of Environmental Services
 29 Hazen Drive, PO Box 95 Concord, NH 03302-0095
 (603) 271-2925 fax: (603) 271-2456
solidwasteinfo@des.nh.gov

