



Cornell Waste Management Institute

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COMPOST FACT SHEET #5: Compost Bulking Materials

COMPOST FACT SHEET SERIES 2004/2005

For these fact sheets and other
compost information:
<http://cwmi.css.cornell.edu/Composting.html>

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Wood chips such as those pictured here are ideal for use as a bulking agent in compost piles.

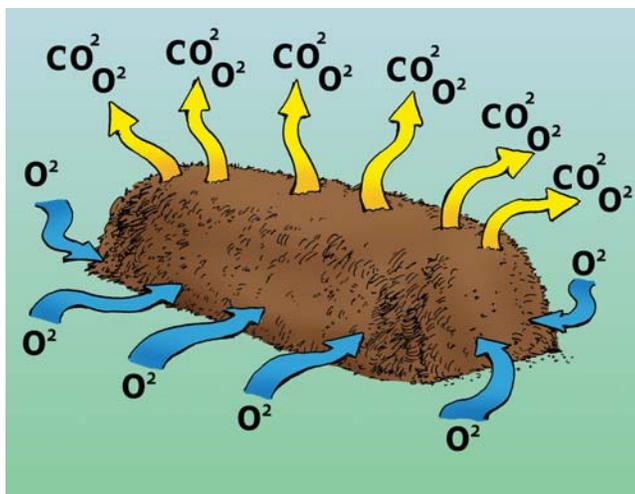
Bulking Materials and Carbon Sources

The ratio of carbon to nitrogen in feedstocks is an important consideration in optimizing the composting process. Composting high nitrogen materials like manure and food scraps, requires the addition of a carbon source in order to provide the microbes with an energy source. Carbon sources can also serve as a bulking material, allowing air movement through the pile.

When securing bulking materials, remember that, "All carbon is not created equal." Wood chips are not the same as shavings, shavings are not saw dust. All carbon sources can be used, but which to use depends on the situation and goals of the producer.

Wood chips

These can be in the form of chips from a chipper (2" fairly consistent) or tub grindings (variety of sizes, some long pieces). Their purpose is to promote natural air flow in the pile. When using bulky material, less



Bulkier feedstock materials promote better airflow through a compost pile, which in turn will speed the natural degradation process.

turning is required, saving time and money. Depending on the end use of the product, the chips may need to be screened out. (They can be reused in the next pile.)

NOTE!

When using a static pile composting method, it is important to use bulkier material to keep the pile aerated.

Shavings

Shavings have more surface area than saw dust, but because of their structure they tend to clump when wet, providing a carbon source but not promoting good airflow.

Saw Dust

This carbon source has a very fine particle size, providing a good carbon source. However, it is very poor in providing air circulation. It is also quite absorbent, and when moisture fills the spaces, air has a hard time circulating. If using fine materials like saw dust, it will need to be turned frequently or air will need to be forced through the pile which is hard with dense material.

Hay/Straw

These dried grasses are a good carbon source. They tend to mat if not well broken up and mixed in.

CAUTION!

Be sure carbon sources do not come from pressure-treated or painted wood products!

They require more turning, but if mixed in proper ratios can work well.

Paper Products

Cardboard and newspaper are occasionally used as bedding on dairy farms and thus become part of the compost pile. They provide carbon, good absorption, but not much airspace. Some farms using corrugated cardboard that has gone through a bedding chopper have been successful composting it with the manure without other bulking materials.

Corn Cob/Stalk

These materials can be used to provide a carbon source and provide for more air flow. Stalks can be size reduced in a bedding chopper. Spoiled feed tends to add both carbon and nitrogen as well as converting the spoilage into a usable product.

Leaves and Yard Trimmings

Leaves and yard wastes (small sticks, waste produce and garden residuals) can be used as a bulking material and carbon source. They can add structure to the pile and are readily available from municipalities. Farmers have directly incorporated leaves into fields to increase organic material, composting will make the nutrients and organic matter more available to crops.

One caution with leaves: When they are collected, they are vacuumed or picked up with a loader. With these collection methods you can get more than leaves; watch for rocks, garbage, glass and other contaminants that may be hidden in the leaves. Avoid grass clippings unless you are in need of more nitrogen. Unless well managed, they can cause the pile to become anaerobic and odiferous.

HELPFUL HINT!

Ask road/tree crews working in your area if chipped brush and branches are available.

Have a convenient place for workers to drop material off.

Table 1

Contact List for Sources of Bulking Materials for Composting
(Fill in the blanks, and post in an easily accessible location as a reference.)

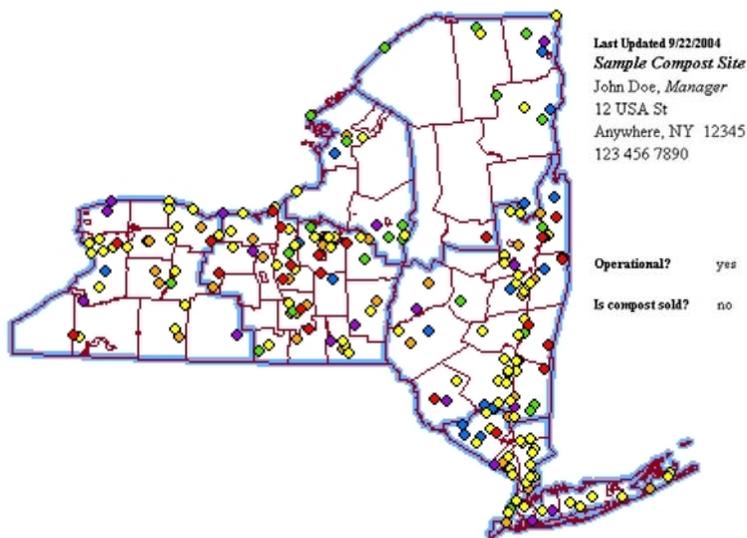
<i>Local Highway Department</i>	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
<i>State Highway Department</i>	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
<i>Utility Company</i>	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
<i>Landscapers</i>	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
<i>Logging Companies</i>	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
<i>Arborists (Tree Care Specialists)</i>	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
	Contact: _____ Phone: _____ Fax: _____ E-mail: _____
<i>Local Parks Department</i>	Contact: _____ Phone: _____ Fax: _____ E-mail: _____

Acknowledgement

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Maps of a database of NYS Compost Facilities can be accessed at: <http://compost.css.cornell.edu/maps/simple-search.asp> (see example below).

New York State Compost Facilities Search



Last Updated 9/22/2004
Sample Compost Site
 John Doe, *Manager*
 12 USA St
 Anywhere, NY 12345
 123 456 7890

Operational? yes
 Is compost sold? no

Compost Facility Search Results

Feedstocks	
Leaves	yes
Grass	yes
Brush and Branches	yes
Logs, Stumps other Wood	
Pre-consumer Food Waste	yes
Post-consumer Food Waste	yes

Composting Method? windrow piles
 Is compost free? yes
 If yes, to whom? residents

Option #2

Select a map to view facilities

- [All Compost Facilities](#)
- [Yardwaste Composts](#)
- [Manure Compost Facilities](#)
- [Foodscrap Compost Facilities](#)
- [Biosolids Compost Facilities](#)
- [Compost Research Farms](#)
- [Small Scale Compost Demonstration Sites](#)

Select a county from the list below

None Selected ▾

*Click "Submit" to send request

Submit

Composting Resources:

- Farm-Based Composting: Manure & More - <http://www.nraes.org/publications/nraes150.html>
- Natural Rendering: Composting Livestock Mortality & Butcher Waste:
 Fact Sheet - <http://compost.css.cornell.edu/naturalrenderingFS.pdf>
 Video - <http://www.nraes.org/publications/nraes163.html>
- Co-Composter: <http://compost.css.cornell.edu/CoCompost.html>
- Compost...because a rind is a terrible thing to waste - <http://compost.css.cornell.edu/FoodCompostpr.html>

For other composting resources see the CWMI web site at: <http://cwmi.css.cornell.edu/Composting.html>