

# Fact Sheet: Composting Food Waste and Other Source-Separated Compostable Materials at Yard Residuals Facilities

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This document provides an explanation of requirements in ch. NR 502, Wis. Adm. Code, for operators of a licensed yard residuals composting facility that would like to add a separate small-scale food waste or other source-separated compostable material (SSCM) compost facility on the same property.

If your plan is to mix all the yard residuals with the food waste or other SSCM, you will need to convert your licensed yard residuals compost facility to a licensed SSCM compost facility and follow applicable requirements.

If you have questions about which requirements apply to a specific situation or activity, contact the Department of Natural Resources waste management specialist for the county your facility is located in by searching “compost” as the subject area in the [DNR’s staff directory](#).

## Terms and Background

**Food waste:** In this document, food waste means compostable food that is not being eaten, such as fruit, vegetable and bread scraps; coffee grounds and tea leaves; eggshells; and food-soiled paper. This can also include meat scraps and certified compostable bags, plates and utensils, but these items may take more time and management to effectively compost.

**Source-separated compostable material:** SSCM is a regulatory term used in solid waste code regulations that refers to all the wastes that can be composted under a solid waste compost facility license. It includes food waste, plant waste (including crops and aquatic plants), fruit and vegetable food processing waste, fish processing waste, yard waste, manure and animal bedding from herbivorous (non-meat-eating) animals that are not deer or elk, clean chipped wood and sawdust, non-recyclable compostable paper and certified compostable plastics. For the definition, see [s. NR 500.03\(219m\), Wis. Adm. Code](#).

## Adding less than 50 cubic yards of food waste or other SSCM

A compost facility with the capacity of 50 cubic yards or less and that contains only food waste or other SSCM does not need a state solid waste approval or a compost facility license. Any local regulations still apply. The facility’s capacity includes the volume of raw food waste or other SSCM (feedstock) plus the volume of compost being processed but does not include the volume of finished compost.

**To operate a less than 50 cubic yard compost facility that only contains food waste or other SSCM:**

- Keep the food waste or SSCM pile separate and distinct from yard-residuals-only compost piles on the property to maintain their reduced regulatory requirements.

- De-bag or break open raw materials in non-compostable bags, other than leaves and brush, within 24 hours of receipt at the facility. [s. NR 502.12(10)(b)]
- Incorporate food residuals from canned, frozen or preserved fruit or vegetable processing operations into the composting process within 72 hours of receipt. [NR 502.12(10)(b)1.]
- Incorporate all other food waste into the composting process on the same day it is accepted. Cover pile with a minimum of 6 inches of compost, high-carbon material such as wood chips or other suitable cover to control odor and vectors. [s. NR 502.12(10)(b)2.]
- Prevent access to the pile by dogs and wild animals. [s. NR 502.12(10)(b)3.]
- Follow the remaining operational requirements that apply for yard-residuals-only compost piles. [s. NR 502.12(7)]

## **Adding between 50 and 5,000 cubic yards of food waste or other SSCM**

A food waste compost operation that is between 50 and 5,000 cubic yards and only contains food waste and other SSCM can operate with reduced requirements but must obtain a plan of operation approval and a compost facility license from the DNR in addition to any local regulations. The facility's capacity includes the volume of raw food waste or other SSCM (feedstock) plus the volume of compost being processed but does not include the volume of finished compost.

### **Required paperwork and fee to add a 50 to 5,000 cubic yard compost facility that only contains food waste or other SSCM:**

1. If you are expanding your approved operational area **or** your yard-residuals-only compost site is less than 1,000 cubic yards and was previously exempt from meeting initial site inspection requirements under s. NR 502.12(6)(b), Wis. Adm. Code:
  - Complete the ISI application (Form 4400-209) and submit to the DNR with the \$550 fee.
  - Schedule an inspection with the DNR and get a feasibility response recommending the location for composting.
2. Complete a new compost facility application (Form 4400-282) for a 50 – 5,000 cubic yard SSCM compost site, including Sections 1 – 9 and Section 11. Compared to a yard-residuals-only compost facility application, you will now need to also include:
  - **Section 7:** a written plan for operating the facility including: information on methods and equipment; facility layout; the proposed feedstock mix and carbon-to-nitrogen ratio; compost monitoring methods; compost markets; and compost pad design.
  - **Section 8:** drawings of the site and the Storm Water Pollution Prevention Plan (SWPPP) worksheet.

Closure cost estimates are not required for this facility type.

3. Obtain a written plan of operation approval and license from the DNR. Plan review and license fees are waived for composting operations.

### **Facility operational requirements for a less than 5,000 cubic yard compost facility that accepts food waste:**

- Keep the food waste or SSCM compost facility separate and distinct from the yard-residuals-only compost piles or other compost facilities on the property to maintain their reduced regulatory requirements.
- De-bag or break open raw materials in non-compostable bags, other than leaves and brush, within 24 hours of receipt at the facility. [s. NR 502.12(10)(b)]

- Incorporate food residuals from canned, frozen or preserved fruit or vegetable processing operations into the composting process within 72 hours of receipt. [s. NR 502.12(10)(b)1.]
- Incorporate all other food waste into the composting process on the same day it is accepted. Cover pile with a minimum of 6 inches of compost, high carbon material such as wood chips or other suitable cover to control odor and vectors. [s. NR 502.12(10)(b)2.]
- Prevent access to the pile by dogs and wild animals. [s. NR 502.12(10)(b)3.]
- Follow the remaining operational requirements that apply for yard-residuals-only compost facilities.

## Carbon to Nitrogen Ratios and Food Waste

A mix of “browns” (material high in carbon) and “greens” (material high in nitrogen) is important for effective composting. The most effective mix for composting is 20-40 pounds of available carbon to every 1 pound of nitrogen. This is called a carbon to nitrogen ratio or “C:N”. Every feedstock will contain both carbon and nitrogen, but each has its own internal ratio of carbon to nitrogen. “Browns” are feedstocks with a C:N that is above 30:1 while “greens” have a C:N below 30:1.

Food waste is a green that has a C:N ratio of around 15:1 and wood chips are a brown that have an available C:N ratio of around 250:1. Because the C:N for food waste is much closer to ideal composting conditions than the C:N for wood chips, by weight you would only need to mix a small amount of wood waste with food waste to obtain the proper C:N ratio. Mixing 1 pound of wood chips for every 15 pounds of food waste would give you a C:N ratio right around 30:1. Because food waste is denser than wood chips, the amount of each added by volume would be about 2 cubic yards of food waste to 1 cubic yard of woodchips.

### Carbon to Nitrogen Ratio Take Aways

- Food waste on its own is higher in nitrogen than what is ideal for composting. It needs to be mixed with high carbon materials such as wood to properly compost.
- By volume, you can estimate 2 cubic yards of mixed food waste for every 1 cubic yard of wood chips.
- There are links to tools to help determine the right mix of feedstocks on the DNR’s compost webpage.
- When composting, an ammonia smell likely means more carbon is needed.
- When composting, struggling to reach 131 degrees Fahrenheit likely means more nitrogen is needed.

## DNR Contact information

For more information on this subject, including publications, staff contacts, and administrative codes and statutes, go to [dnr.wi.gov](http://dnr.wi.gov) and search “compost.” Staff contact information can also be found by searching “compost” in the [staff directory](#).

**Mailing address:** DNR Waste & Materials Management Program, PO Box 7921 Madison, WI 53707

**Email:** [DNRWasteMaterials@Wisconsin.gov](mailto:DNRWasteMaterials@Wisconsin.gov)

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