



How to Compost



Julie Garden-Robinson, Ph.D., R.D., L.R.D., F.A.N.D.
Professor and Food and Nutrition Specialist

Brittany Twiss, R.D., L.R.D.
NDSU Extension, Program Assistant

Food waste occurs at home. In fact, wasted food in homes accounts for up to 40 percent of the total food waste, according to the Natural Resources Defense Council. We can't save all the food, but most of us can take steps to reduce food waste at home.

Here are some tips to trim food waste in your house:

- Buy what you need and use the ripest fruits first.
- Use your leftovers as lunches.
- Repurpose your leftovers in casseroles, soups, stir-fry, quesadillas or omelets.
- Freeze your leftover fruits, vegetables and other foods.
- Start composting at home.

Reduce, Reuse, Recycle: Learn To Compost

Composting is an extraordinary process. Given time, food scraps, grass clippings and leaves can yield "black gold" for your garden's soil.

Compost is organic material you can add to soil to help plants grow. According to the Environmental Protection Agency, food scraps and yard waste make up 20 to 30 percent of what we throw away; it should be composted instead. Making compost keeps these materials out of landfills, where they take up space and release methane, a greenhouse gas.

Benefits of Composting

- Enriches soil and helps retain moisture
- Reduces the need for chemical fertilizers
- Encourages the production of beneficial bacteria and fungi that break down organic matter to create humus, a rich, nutrient-filled material
- Reduces the amount of organic waste we send to the landfill
- Reduces methane emissions from landfills



What You Can Compost

Compostables are divided into three main categories: greens, browns and water.

Greens include food scraps such as apple cores, leafy greens, onion skins, corn cobs and husks, egg shells, banana peels, chopped potatoes, squash, pumpkins, coffee grounds and any other refuse from fruits and vegetables, including weeds (except perennial weeds) that are plucked from the garden.

Browns include trees, branchy plants, leaves, shredded paper, newspaper, sawdust, nut shells, coffee filters, straw, small sticks and twigs, wood chips and empty cardboard tubes. For faster composting, the smaller the pieces, the better.

A compost pile is a living ecosystem and needs the right balance of ingredients and adequate **water** to function. The goal is for the compost pile to be damp, like a wrung-out sponge. A compost pile should have good drainage.

Your compost pile should have an equal amount of browns and greens. The brown materials provide carbon for your compost, the green materials provide nitrogen, and the water provides moisture to help break down the organic matter.

What Not to Compost

- Meat or fish bones and scraps
- Fats, grease, lard or oils
- Dairy products (for example, butter, milk, sour cream, yogurt) and eggs
- Pet wastes (for example, dog or cat feces, soiled cat litter)
- Yard trimmings treated with chemical pesticides
- Diseased or insect-ridden plants
- Weeds with mature seed heads attached
- Charcoal briquettes

Check with your local composting or recycling coordinator to see if your community curbside or drop-off composting program accepts these organics.

NDSU

EXTENSION

How to Compost at Home

You have many ways to make a compost pile. We have provided the following for general reference.

Create a place for compost piles in the backyard using plastic totes or garbage pails. You can buy or make compost bins and tumblers easily and inexpensively. Keep in mind that compost must be decomposed fully before adding it to the garden.

Helpful tools include pitchforks, square-point shovels or machetes, and water hoses with a spray head. Regular turning of the compost and some water will help maintain the compost.

Backyard Composting



How to avoid attracting rodents and unwanted critters:

- Do not compost meats and fatty products.
- Use a rodent-resistant bin such as a secure barrel/tumbler.
- Bury kitchen waste at least 12 inches deep in the pile.

For more information on this and other topics, see www.ag.ndsu.edu

NDSU Extension does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names. NDSU encourages you to use and share this content, but please do so under the conditions of our Creative Commons license. You may copy, distribute, transmit and adapt this work as long as you give full attribution, don't use the work for commercial purposes and share your resulting work similarly. For more information, visit www.ag.ndsu.edu/agcomm/creative-commons.

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 201, NDSU Main Campus, 701-231-7708, ndsu.eoaa@ndsu.edu. This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881.

How Long Does Composting Take?

The amount of time needed to produce compost depends on several factors, including the size of the compost pile, types of materials, surface area of the materials and number of times the pile is turned.

- Breaking materials into smaller parts will increase the speed of composting.
- For most efficient composting, use a pile that is between 3 by 3 by 3 feet and 5 by 5 by 5 feet. This allows the center of the pile to heat up sufficiently to break down materials.
- You can make larger piles by increasing the length of the pile but limiting the height and depth.
- By turning more frequently (about every two to four weeks), you will produce compost more quickly. The average composter turns the pile every four to five weeks.
- If your pile is getting smelly, too heavy or too wet, stir the pile and add more browns, if available.
- You also may want to have two piles, one for finished compost ready to use in the garden and the other for unfinished compost.
- With frequent turning, compost can be ready in about three months, depending on the time of year. In the winter, you should stop turning the pile after November to keep heat from escaping from the pile's center. In the summer, warm temperatures encourage bacterial activity and the composting process is quicker.

How to Use Compost

Once the compost is ready, spread up to 3 inches on the top of soil and work it into the soil about 8 to 12 inches. For vegetable or flower gardens, apply a layer every year.

Compost also can be used as mulch over the soil surface and around tomato plants, trees and shrubs to maintain moisture and soil health, and help protect plants from extreme temperatures. In addition, you can add compost to potted plants. The University of California recommends a mix of one part compost to three parts potting soil.

References

- Environmental Protection Agency. (March 20, 2017). Composting At Home. U.S. EPA. Retrieved from <http://epa.gov/recycle/composting-home>
- Larson, H., M.S., R.D. (July 9, 2018). Home Composting Put Your Scraps to Use. Retrieved from www.eatright.org/food/planning-and-prep/eat-right-on-a-budget/home-composting-put-your-scraps-to-use
- Smith, R. (n.d.). Composting Practices. Retrieved from www.ag.ndsu.edu/pubs/plantsci/hortcrop/h885.pdf
- University of California Agriculture and Natural Resources. (n.d.). Composting Resources. Retrieved from http://ncmg.ucanr.org/Composting_Resources/

Reviewed by

Todd Weinmann, Extension Horticulture Agent—Cass County (former) North Dakota State University

Tom Kalb, Ph.D., Extension Horticulturist—Plant Sciences Department North Dakota State University

Randy Nelson, Extension Educator University of Minnesota Extension, Clay County