

BACKYARD COMPOSTING

Winthrop Merriam
Extension Specialist
4-H Programs

TIPS ON COMPOSTING

The rapidity of the composting process depends on several things:

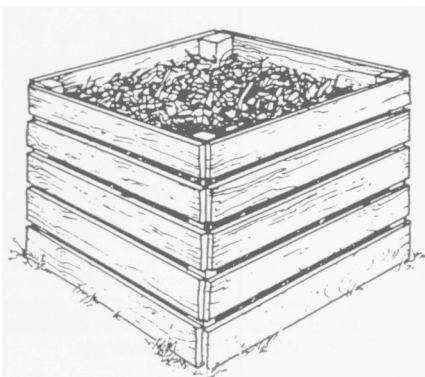
1. Whether the material is shredded and how finely.
2. The humidity of the pile. Material should be about as damp as a squeezed out sponge.
3. Size of the pile. Should be about 3 feet by 3 feet.
4. Presence of microorganisms. A good way to insure this is to add good garden soil, rotted manure or old compost.
5. Frequency of turning. Usually the more often a pile is turned the faster the composting process. Frequent turning may result in more rapid loss of nitrogen which needs to be compensated for.

SOURCES OF NITROGEN, PHOSPHORUS, AND POTASSIUM

Nitrogen: feathers, hair, blood meal, tea leaves, wool, manure, urine and green plants.

Potassium: wood ash (add when compost is being turned), urine, banana peels, oak and fruit tree leaves.

Phosphorus: rock phosphate and bone meal.



WHEN IT'S READY, WHAT DO I DO WITH IT?

Compost is ready when the original raw materials are not identifiable. It is then called humus, has a dark color, a good "earthy" smell and crumbles when handled.

-Screening the compost through 1/2 inch mesh wire will remove any large pieces. Save these to use as compost starter for the next pile.

-Homemade compost replaces many expensive products we purchase to improve growing conditions for our plants.

-Used as a soil conditioner, compost reduces compaction in clay soil. It improves drainage and air circulation.

-Earthworms and other desirable soil organisms use compost as a food source.

-Compost replaces soil nutrients (mainly micro-nutrients) which usually are not supplied in a complete commercial fertilizer.

-Compost is a very desirable mulch for trees, shrubs, flowers and vegetable gardens. If partially decomposed compost is used as a mulch, nitrogen from the soil will be used as the decay process is completed. Compensate by adding a small amount of nitrogen to the compost.

KEEPING YOUR COMPOST PILE GOING

For your compost pile to function properly, it must have a buildup of heat.

-To maintain heat and promote reaction, cover with a sheet of black plastic, lots of finished compost, dry soil or leaves.

-Maintaining an adequate heat level of 90 to 140° F in the center of the pile will kill germs, fly larva and weed seeds. It also increases the speed of decomposition.

-The organisms that do the work need air, so be sure that the compost pile is only

moist and not really soggy. One should protect against compaction of the pile, which may be a problem if only wet kitchen garbage is used. Adding a few pieces of brush at the bottom of the pile will help improve aeration.

HOW LONG WILL IT TAKE FOR COMPOST TO FORM?

This will vary depending on a number of conditions.

-Small piles decompose faster than large ones.

-Shredded materials break down faster than whole materials.

-Piles too small to hold heat or too large for good air circulation breakdown slowly.

-Cool, dry weather slows down the process.

-Warm, moist weather speeds it up.

-The perfect compost pile is made of shredded materials containing the correct carbon/nitrogen ratio and having sufficient moisture and good air circulation. This will breakdown in one or two months during warm weather.

-The finished product will have a pH of near neutral. The range will be from 5.8 to 7.2.

SIX ELEMENTS ARE ESSENTIAL FOR GOOD COMPOSTING.

1. **Biology** - Bacteria start the process of decaying organic matter. They are the first to breakdown plant tissue and are also the most numerous and effective composers. These are little microorganisms.
2. **Materials** - Most anything growing in your yard can be composted and is potential food for the little bacteria which break the plant down. Carbon and nitrogen from the cells of dead plants fuel their activity.

3. **Surface Area** - The more surface the better and faster the breakdown process. Chop up any plant waste as fine as possible before placing in the compost pile.
4. **Volume** - A certain mass is needed in order to hold in the heat of microbial action. Piles smaller than three cubic feet will have trouble holding the heat in while piles larger than five cubic feet may not allow sufficient air in to the center of the pile to allow for fast breakdown of the material.
5. **Moisture and Aeration** - The microbes in the pile that cause things to breakdown must have both air and water to live. They function best when the compost materials are about as moist as a wrung out sponge.
6. **Time and Temperature** - The hotter the pile is the faster composting will occur. This assumes you provide an adequate volume and use materials with the proper carbon-nitrogen ratio, thirty parts carbon to one part nitrogen. Turning the product periodically will shorten the time needed for compost to form.

RESOURCES AVAILABLE FOR USE

"Home Composting" slide set consists of 45 slides and printed script, prepared by Cornell University and are available from the Dorsey Resource Center.

"Composting to Reduce the Waste Stream," Northeast Regional Agricultural Engineering Service, publication #43, 45 pages a cost item available through WVU Agricultural Engineering, Agricultural Science Building, West Virginia University.