

# Easy Backyard Composting Fact Sheet

## Why compost?

In about as much time as it takes to burn or bag yard debris for disposal, you can prepare these same materials for composting. Leaves, grass clippings, pruned twigs, and kitchen wastes compose 25% of the waste stream. Composting eliminates noxious air pollution caused by burning and reduces the stress placed on our overburdened landfill system.

Home composters can use the resulting humus to lighten heavy, clay soils or to enrich sandy soils. The humus can be added to garden soil for vegetables and flowers. Humus can also be applied as a one-inch top dressing to lawns in the spring or fall instead of commercial fertilizer.

## Composting is as easy as 1-2-3-4

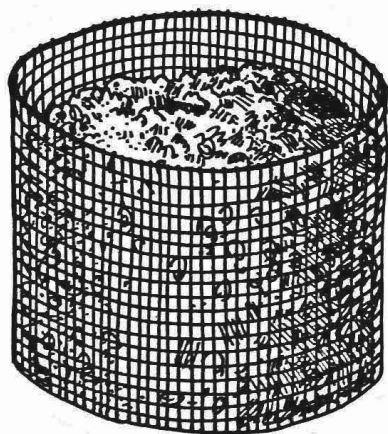
Almost any size and shape of a compost pile will work. Only a few things are needed:

1. Materials to Compost include yard debris such as leaves, grass clippings, pruned branches, weeds, and kitchen scraps--fruit and vegetable peels, egg shells, coffee grounds, tea bags, leftovers. Avoid adding meat scraps, bones, and oily salad dressings since these attract vermin.

2. Soil and Manure Layer 1-2 inches of soil mixed with a little manure on top of each six inches of plant material. The soil introduces microorganisms to break down the organic materials, and the manure contains nitrogen, which is necessary to create an optimum environment.

3. Water and Air. The compost pile should be kept as damp as a wrung-out sponge. Sprinkle water over each added layer and whenever the top seems dry. Air should be able to enter through several sides and around the bottom of the compost pile. Use loosely-packed twigs, straw, or even boards or bricks on the bottom of the pile to allow air to circulate and excess water to drain away. Grass clippings tend to pack tightly and hold water while preventing good air circulation and need to be mixed with leaves, twigs, hay, or kitchen scraps before the next layer is added.

4. Piles, Bins, or Boxes and Turning A compost area can be as simple as a three-foot square pile that is allowed to decompose on its own to provide humus in one-two years. Turning the compost will speed the decomposition and make the compost ready to use in about six months. Illustrations of various bins and boxes are depicted on this fact sheet.



*A simple wire bin can be built to contain leaves and other yard debris.*

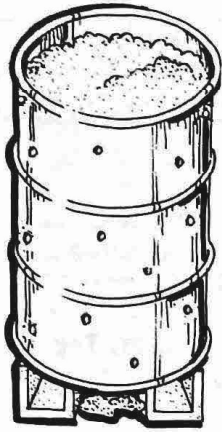
## A Biological Explanation of Composting

Bacteria are the primary microorganisms that break down plant tissues. Other tiny decomposers, such as fungi and protozoans, join in the meal and are later assisted by insects and worms. Carbon and nitrogen from the cells of dead plants and the soil provide energy to the decomposers.

Heaping organic materials into a pile gerates heat through the activity of the microorganisms. A compost pile passes through three distinct phases of decomposition characterized by three different types of microorganisms. The center of the pile gets successively hotter in each phase until the third, or thermophilic stage, when temperatures are in excess of 140 degrees F at the center of the pile. It is necessary for the pile to reach such high temperatures in order to kill weed seeds and disease organisms.



## A Biological Explanation of Composting *Continued*



Once the thermophilic stage passes, the pile begins to cool off and a visual inspection reveals that the middle of the pile has turned to a uniform dark crumbly substance. Then the pile can be turned "inside out" with a fork so that the outer layers wind up in the middle and the decomposing can continue and create a uniform humus. Then let the pile wait a month or two to "cure" before using.

Organisms involved in composting thrive in an environment between 30:1 to 50:1, carbon to nitrogen ratio. Dried plant materials are high in carbon, while freshly-cut green plants contain more nitrogen. For example, fallen leaves are in the range of 60:1, grass clippings are 20:1, and table scraps have a 15:1 carbon to nitrogen ratio. For this reason, we recommend adding a high nitrogen supplement such as manure, fish fertilizer, ammonium sulfate, urea, bone or blood meal from a garden store, or a high nitrogen-containing fertilizer to the compost pile occasionally.

### Composting Hints

- Compost bins can be constructed of chicken wire, snow fencing, cinder blocks, trash cans, steel drums, and wood.
- Covering the compost pile loosely with plastic can help retain moisture and heat during winter months. Using a stick in the middle of the pile to prop the plastic to create a "peaked" roof works best for water drainage and air circulation. The cover will also protect the pile from becoming too wet when it rains, which can leach nutrients.
- Many people use an annual cycle for their compost pile by starting it in the spring, adding layers throughout the growing season, turning occasionally in the fall, covering for winter, (adding kitchen scraps throughout the winter), turning again in the early spring, applying the humus to the garden and lawn, and starting over for the new growing season.
- Humus may be easier to use if it is screened through 1" wire mesh to remove lumps before spreading onto the garden or lawn.
- Shredding or chopping materials to be composted speeds up the decay process. Hand or motor-operated shredders can be rented or purchased.
- The compost pile does not need to be turned frequently in winter because the heat buildup is slow.
- Turn the pile immediately whenever strong ammonia odors are detected.
- Adding lime, small amounts of wood ashes, or crushed eggshells will neutralize acids and also help keep the compost pile sweet-smelling.
- Don't add diseased vegetable plants to the pile if compost will be used on a vegetable garden. The disease organisms may reappear the next year.
- Unfinished compost will pull its needed nitrogen from surrounding plants if applied too early. Wait until the humus is uniformly decomposed before using.
- Ready-made compost bins are available from many garden stores and catalogs. A collection of garden product catalogs are maintained in the reference area of the Ann Arbor Public Library, Main Branch.
- Composting can also occur in anaerobic (without oxygen) conditions. Special organisms must be mail-ordered to add to the compost materials and different bin styles are used.



*For the serious composteer, a series of turning bins will allow for turning on a schedule.*

*Information was compiled from: "Backyard Composting," Extension Bulletin WM 02, March 1987; "Composting at a Glance," Michigan Dept. of Natural Resources; "How to Make Compost," by Dale Miller, distributed by Project Grow. For more information on composting, consult: The Ecology Center's public library section on "Gardening;" Project Grow Community Gardens, 996-3169; Washtenaw County Composting Program Coordinator, 996-1361.*

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