Care

Turning aerates the pile and mixes it so all materials reach the center, where decomposition is most rapid. Let the pile sit for a couple of weeks to allow the center to heat up; then turn once every week or two. The more often the pile is turned, the faster it will decompose. If monitoring the temperature with a compost thermometer, turn when the temperature drops below 110 degrees. Stop turning in the winter to allow the pile to retain heat as long as possible—it will heat up and become active again when warm weather returns.

Add water if necessary when adding new materials, when turning the pile, or anytime the pile appears dry. The material should be moist but not dripping, feeling like a wrung out sponge. Cover the pile during excessively wet weather. If it becomes too wet, add dry brown material and turn.

Using Compost

Compost will take anywhere from 6 weeks to several years to be ready, depending on materials used and how much attention is given to it. Compost is ready when it is dark and crumbly, has an earthy smell, and the original materials are not recognizable. If any large pieces remain, either use the compost as is or add the pieces to a new pile. Let finished compost sit 2-3 weeks to stabilize before using. Use for:

- Mulch - use 2-3”
- Soil amendment—spread 3-4” layer over soil and till in, or add 25% compost when filling planting hole
- Add to potting mixes - no more than 50% compost
- Seed starting (screen first) - may help suppress damping off and other diseases
- Compost tea - good for new transplants and seedlings; put compost in a pillowcase or burlap sack and steep in a bucket of water for a few days
- Top dressing for lawn - no more than 1/4”, screen to eliminate clumps

Problems

- Odor
  - Too little oxygen (wet or compacted) or too much nitrogen—add dry brown material and turn
  - Meat or fat in pile - remove
- Pile not heating up (no decomposition)
  - Too dry - add water
  - Too small - add material
  - Not enough nitrogen - add fertilizer, manure, or grass clippings
- Pile too hot
  - Too much nitrogen or not enough oxygen - add dry brown material and turn

Decomposition is a natural process - everything breaks down eventually. It will happen no matter what you do or don’t do. These are just guidelines for providing the best possible conditions to speed the process along. The result will depend on the time, space, and materials you have available. Even if you can’t do it perfectly, you can still reap the benefits of composting.

For more information on gardening please visit:
http://web.extension.illinois.edu/state/horticulture/index.php
or
call University of Illinois Extension
Knox County Office
309-342-5108

Other information brochures can be found online at http://web.extension.illinois.edu/hkmw/hort.html

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Home Composting

UNIVERSITY OF ILLINOIS EXTENSION MASTER GARDENER

Garden Tips

from
Knox County
Master Gardeners

UNIVERSITY OF ILLINOIS EXTENSION

All organic material will eventually decompose, but left to its own the process might take years. Larger organisms such as worms and insects physically break the material down into smaller pieces, while microorganisms such as bacteria and fungi break it down chemically. Composting is simply helping to speed up this process by providing these organisms with optimal working conditions.

Composting provides benefits to both the environment and the gardener. It reduces pressure on rapidly growing landfills and municipal composting facilities, and also produces a valuable resource to use in the garden. Compost improves the structure and texture of soil, improving water retention and root penetration, and also reduces the need for fertilizer.

Factors That Affect Decomposition

Food - Both carbon and nitrogen sources are needed for microbes to break down organic material.

Air (oxygen) - Desirable bacteria require oxygen to function.

Moisture - Compost should be moist but not soggy.

Temperature - Compost will break down faster at higher temperatures up to a point. Different organisms are active at different temperatures, but all desirable organisms will be killed at temperatures above 160-170 degrees.

Particle Size - Smaller particles provide more surface area for microbial activity and speed decomposition.

Volume - The compost pile needs to be large enough to produce and retain heat.

Composting Methods

The method chosen will depend on how much time, space, and organic material you have available, as well as how much you want to spend on equipment.

Batch - If enough material is available, you can fill the entire bin at one time. Adding new material will slow the decomposition process.

Continuous - If you have a steady stream of material, add new material until the pile or bin is full.

Active - Turning regularly and maintaining adequate moisture will speed up decomposition.

Passive - Without active maintenance, a compost pile will eventually break down, but may take a year or more.

Materials

High carbon, or "brown", material:

- dry leaves (not walnut)
- straw or hay
- paper
- twigs or wood chips
- dry garden debris

High nitrogen, or "green", material:

- grass clippings
- vegetable and fruit scraps
- fresh garden debris
- coffee and tea grounds,
- manure from herbivores

Larger pieces should be chopped or shredded before adding.

Do not add these to your compost pile:

- meat scraps or bones
- pet waste
- dairy, oils, or fats
- diseased plants
- weeds with seed heads
- plants that have been treated with herbicides or pesticides
- glossy or colored paper
- sludge
- charcoal or ashes

Some of these materials contain pathogens that can be harmful to humans or to plants, while others can be difficult to break down or require special handling.

Location

Check local ordinances before locating your compost pile. The ideal area should be:

- flat
- well-drained
- away from large trees (to prevent tree roots from growing into compost)
- in partial sun
- near a water source
- convenient but inconspicuous

If you can't avoid full sun or a windy area, additional moisture may be required. Do not locate directly against a building or fence to avoid rotting of the structure.

Equipment

You will need a garden fork to turn the pile, a hose or watering can to add moisture, and pruners or clippers to cut large material into smaller pieces. Special compost thermometers and turning tools are available in larger garden centers or by mail order. These may make the job easier but are not necessary.

There are many commercially available compost bins, or you can make your own using wire, scrap wood, palettes, concrete blocks, or garbage cans. Using multiple bins makes turning easier and allows for a continuous supply of compost. You can also just build a pile or heap on the ground without enclosing it.

Building a Compost Pile

An enclosed pile should be at least 3'x3'x3' to build and maintain proper temperature. A heap should be at least 5' wide x 3' high. Piles larger than 5'x5'x5' are harder to turn and don't allow oxygen to reach the center.

When starting a new compost pile, place several inches of larger brown material on the ground to improve drainage and air flow. Then add:

- 6-8" mixed green (1part) and brown (1-2 parts) material and water lightly
- fertilizer (use about 1/3 cup for a 3'x3'x3' bin) or 1-2" manure to provide nitrogen—may not be necessary if you have lots of green material
- 1" garden soil or finished compost to provide necessary microbes—special starters or activators are usually not necessary

Repeat layers until full or you run out of materials.