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HOME COMPOSTING EDUCATION PROGRAM
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HINTS FOR COMPOSTING

HOW TO TURN GARDEN AND KITCHEN SCRAPS INTO COMPOST IN A HURRY

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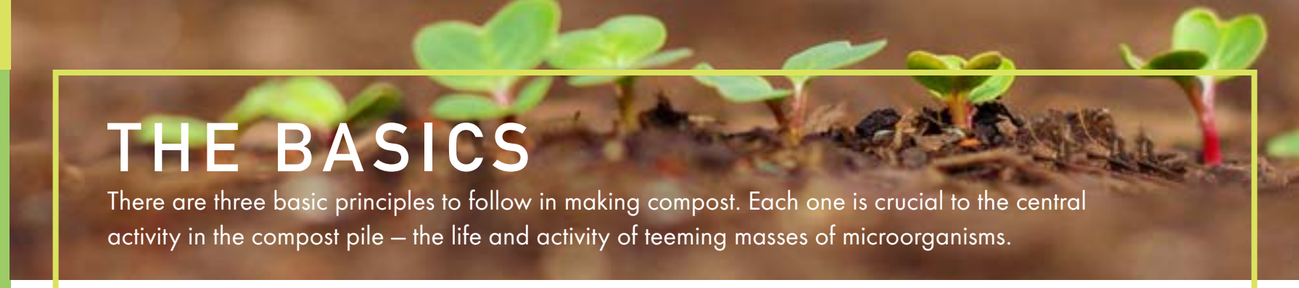

THE BASICS

There are three basic principles to follow in making compost. Each one is crucial to the central activity in the compost pile – the life and activity of teeming masses of microorganisms.

Different microorganisms, mostly beneficial bacteria and fungi, are active at different temperatures, but all require a balanced diet: carbohydrates for an energy source and nitrogen for body building. The more rapidly these microbes digest organic materials, the warmer the pile becomes. When temperatures reach 130°F for three or more days, most of the pathogens and weed seeds are killed. To reach high temperatures and make finished compost in three months or less, follow these basics.

1 BALANCE THE PILE WITH DRIED BROWN AND MOIST GREEN MATERIALS

Microbes multiply fastest in compost with 25 to 30 times as much carbon (dry browns) as nitrogen (moist greens), or when the carbon to nitrogen ratio (C:N) is 25-30:1. Without measuring or calculating, you can achieve this ratio by alternating equal amounts of green and brown materials in layers as you build the pile. When two layers are complete, mix them together. Use a variety of ingredients, striving for an ideal balance. If you use tough brown carbons such as newspaper, straw, or sawdust, balance them with food scraps, grass clippings, alfalfa, or other nitrogen-rich materials. To make compost in a hurry (in 2-12 weeks), you need to build a pile large enough at one time to be self-insulating so that temperatures reach 130° or higher. This means having enough green and brown materials on hand for a pile at least 1 cubic yard (3'x3'x3') in volume.

2 REDUCE PARTICLE SIZE TO INCREASE SURFACE AREA

Small particles expose maximum surface area to microbial activity. Chop garden wastes with a flat shovel or machete; chip or shred woody materials in a shredder; or stack garden debris in a low pile and run over it with a power mower. Woody materials break down slowly, even when they are finely shredded. Still, they make good additions to the compost pile by providing air space and preventing other materials from matting together.

3 PROVIDE ADEQUATE AMOUNTS OF AIR AND WATER

The beneficial microbes depend on constant supplies of air and water. When either is lacking, microbes die, and decomposition slows or stops completely. Keep the pile evenly moist, about as wet as a wrung-out sponge. You can test for the correct moisture level by squeezing a handful of compost. If the materials remain clumped together but no water drips out, the pile is adequately moist. Be careful to avoid over-watering. Too much water blocks out air, kills the microbes, and causes unpleasant odors. Gravity and the weight of materials in your compost pile cause it to settle, forcing out air vital to microbial life and activity. Keep the compost well-aerated by turning it frequently or loosening it with a fork or special aerating tool.

TIPS FOR FASTER COMPOSTING
HINTS FOR USING GREENS AND BROWNS

Compost as many organic materials as you can to return their nutrients back to the earth to complete their life cycle and benefit your soil.

- **Be creative.** An old straw hat, cotton fabric, paper towels and tissues, and bits of cardboard make wonderful compost. Crumple up junk mail (no glossy paper)—wads of paper help aerate the pile. Include coffee filters, tea bags, and crushed eggshells. However, do not add meat and dairy as backyard piles are not hot enough to kill pathogens.
- **In fall, stockpile dried leaves, a bale of straw, or some decomposing wood chips.** Use these to build a pile at one time when you have large quantities of moist greens anytime of year. Collect moist green ingredients when you are ready to build a 1-cubic yard hot pile. It is difficult to store them for more than 1 week.
- **Begin a second pile** rather than adding dried browns to an active pile, upsetting the balance, and slowing down the composting process.
- **Add additional food scraps** and moist, green materials to active compost. They will decompose quickly. Be sure to bury them well inside the pile.

- **Keep wood ashes and soil out of the compost pile.** Ash is not organic and will not decompose. Both cool down the pile, add weight, and force out air.
- **Know that commercial activators are unnecessary.** Microbes abound naturally on all organic materials. Commercial products work because they contain nitrogen.

HINTS FOR REDUCING PARTICLE SIZE

- **A power lawn mower** is the easiest, fastest way to reduce particle size and increase surface area. Organics of any size will eventually decompose, but small particles make the fastest compost.
- **Sharpen your mower blade** after shredding rough, fibrous compost materials to prevent frayed cuts on your lawn grass.
- **Consider its value before investing in a chipper shredder.** Heavy-duty, expensive machines perform efficiently but are most appropriate for large-scale gardening that generates volumes of woody branches.
- **Mix grass clippings and shredded paper with leaves or straw** as you add them to the pile. Very small particles tend to mat together which slows decomposition.
- **Consider renting** equipment.

HINTS FOR WATERING AND AERATING

- **Locate your compost pile or bin within easy reach of a garden hose.** Keep a thin-tined compost fork or aerator tool handy for frequent turning.
- **Add water** when you mix together alternate layers of browns and greens. Use a hose spray nozzle so that all particles are lightly moistened.
- **Spray the pile** several times as you turn and rebuild it.

- **Be careful not to over water.** Green materials are 60-80% water. It is more difficult to dry out a pile than to moisten it. If the pile becomes too wet, spread it out and mix in dry materials.
- **Cover an open bin** if the compost develops a concave top that collects rain water. A freestanding pile usually sheds water like a thatched roof.
- **Turn your compost** at least three times weekly for fastest decomposition. Turning will not cool down a hot pile; instead, it adds oxygen, and heats the pile up.
- **Conserve nitrogen** by aerating the compost frequently. Anaerobic piles (lacking air) cause nitrogen to evaporate as ammonia.

MORE HINTS

Invest in an 18-inch composting thermometer to know instantly when the hot pile cools and is ready for turning. After several turnings, the temperature and the compost stabilize.

Expect a host of beneficial organisms to live in your compost pile. Most are unfamiliar and microscopic, but others such as centipedes and sow bugs are easily recognized. Keep out unwanted vertebrate pests by enclosing sides, top, and bottom of the bin with ¼-inch galvanized hardware cloth. Bury food scraps at least 12-inches in the pile to discourage flies and pests. Discourage ants by keeping the pile moist and food scraps buried. Use compost as a soil amendment rather than as a fertilizer since its nutrient content is low. The organic content, or humus, enables plants to readily take up minerals from the soil. Compost continues to decompose, so it must be renewed frequently. Observe the composting process closely and make adjustments as needed. Creating compost is an art as well as a science.

A FINAL NOTE

The rapid method developed by the University of California is only one way to make compost. Organic materials simply stacked in a pile will eventually decompose. Whatever method you use, remember that compost can be made from more than garden debris. By recycling a variety of materials, you can keep organics out of the landfill and in the soil.

C:N RATIOS OF COMMON MATERIALS FOR COMPOST PILES

FIGURES ARE AVERAGES AS MATERIALS VARY

WOOD CHIPS	600:1
NEWSPRINT	550:1
RAW SAWDUST	500:1
CARDBOARD	400:1
AGED SAWDUST	200:1
PAPER SCRAPS	150:1
RICE HULLS	125:1
WHEAT STRAW	125:1
CORN COBS	98:1
PINE NEEDLES	98:1
STRAW	80:1
POMACE	62:1
CORN STALKS	60:1
LEAVES	60:1
ORANGE PEELS	58:1
APPLE POMACE	48:1
DRY WEEDS*	40:1
FRUIT SCRAPS	35:1
OTHER HAY	32:1
HORSE MANURE	30:1
COFFEE GROUNDS	25:1
OTHER MANURE (HERBIVORES ONLY)	20:1
GREEN GARDEN PRUNINGS	20:1
GREEN WEEDS*	20:1
SEA WEED	20:1
ALFALFA	18:1
GRASS CLIPPINGS	18:1
KITCHEN SCRAPS	15:1
VEGETABLE TRIMMINGS	12:1
POULTRY LITTER	10:1
BLOOD/BONE MEAL	4:1

* Pile must reach 131 degrees F to kill weed seeds. Otherwise, do not put weed seeds or seed heads in the pile.