THE UNIVERSITY OF RHODE ISLAND OUTREACH CENTER

Small-Scale Composting

What is compost?

Composting is the managed practice of the biological breakdown of organic matter, such as leaves and coffee grinds, into a rich soil amendment called humus. Using humus creates healthy landscapes and conserves precious landfill space.

Blend: 3 parts carbon
1 part nitrogen

At this 3:1 ratio, along with a steady diet, microorganisms can decompose organic material quickly. Materials should be mixed thoroughly and shredded or chopped if possible.

Browns: Carbon Sources

Newspaper Shreds

Straw

Wood Chips

Woody Prunings

Lack of carbon and too much nitrogen will lead to odor problems

Shredded Leaves

Greens: Nitrogen Sources

Coffee Grounds

Fruit or Vegetable Scraps

Seaweed

Grass Clippings

Lack of nitrogen is one reason a pile fails to heat up properly

Manure (see food safety)

Result: Healthier soil and less waste

The science of composting

Microorganisms, fungi, insects, worms, mites, and other creatures convert the carbon for dead plants into energy for their own growth, releasing carbon dioxide into the air. Similarily, they recycle the nutrients from the decaying plants into their own bodies and eventually back into the soil. One byproduct of this microbial activity is heat.

Hot (fast) composting

By balancing food, water and air in the compost pile to favor the growth of themophillic (high-temperature) microorganisms, compost piles heat rapidly to 120-150° F. This temperature range kills most weed seeds and pathogens, but not beneficial fungi that help plant roots absorb nutrients.

Cold (slow) composting

If ideal conditions for hot composting are not maintained, microorganisms will still break down wastes. Decay will be slower, cooler, and less effective at killing seeds and pathogens. Decomposition can take from 6 months to 2 years.

Adding compost to garden or landscape

- Reduces need for fertilizers and soil conditioners
- Improves moisture retention and soil structure
- Adds beneficial microbes
- Helps reduce plant diseases and pests
- Increases organic matter
- Lightens clay soils and helps sandy soil hold water

Compost and Food Safety

Pathogens can be found in decaying organic matter, especially manure. A well managed compost pile (of at least 27 cubic feet) can generate enough heat to destroy pathogens. To be effective, your compost must reach a temperature of at least 131° F for 15 days- turn at least 5 times. If your compost pile is smaller than this, or, if you do not manage it properly, pathogens and weed seeds can survive. Turn the pile regularly to properly aerate making sure all contents of the pile reach the middle, where heat is generated. The addition of manure is only recommended for experienced composters and should only come from animals with a plant-based diet such as chickens or rabbits.

When in doubt apply finished compost in late fall after harvesting.

Do not compost

- Diseased and invasive plant species
- Chemically treated plants or grass
- Poisonous plants
- Meat, bones, fat, grease or dairy products
- Cooked foods in sauces, butter or oil
- Dog or cat feces
- Treated or painted wood
- Wood ash

Interested in upcoming URI Master Composter Trainings or Compost Workshops? Scan our QR code

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