Take Care of Texas
TakeCareOfTexas.org

Mulching and Composting

A "TAKE CARE OF TEXAS" GUIDE

Why Mulch and Compost?

To Save Money
- **Lower your water bill.**
- **Buy less fertilizer.**
- **Stop buying lawn and leaf bags.**

To Save Time and Effort
- **Stop bagging grass and leaves.**
- **Spend less time watering.**
- **Spend less time fertilizing.**

To Help Your Community
- **Save landfill space.**
- **Conserve water resources.**
- **Reduce water pollution.**

Mulch

What Is Mulch?

Mulch is a material that is used to protect the soil and to inhibit weed growth by covering the ground. Good mulches include wood chips, leaves, grass clippings, and compost. They can benefit your lawn and garden by preventing erosion, suppressing weeds, retaining soil moisture, moderating soil temperature, and adding nutrients as they break down slowly.

How to Use Mulch

- Put a 3- to 4-inch layer of mulch around your trees, shrubs, and garden plants. To prevent diseases and pest infestation, mulch should not be piled up against the stems or trunks of plants. For best results, use long-lasting mulches (wood chips, wood shavings, evergreen needles).
- Create a self-mulching lawn! Wait to mow until your grass is between 2 and 4 inches high. Then mow off only the top one-third of the grass, and don't bag the clippings. This way, the clippings will feed your soil and won't smother your grass.
- If you have too many clippings, rake them into mulch layers around trees and shrubbery.

Mulching Basics

- Mulch all areas that are not covered in grass or thick ground cover.
- Use a layer of coarse mulch 3 inches or more in depth for weed control.
- When converting grassy areas to mulch, smother the grass with a thick layer of cardboard or newspaper rather than killing it with chemicals. Some hardy grasses must be rooted out for successful removal.
- Blanket perennials with several inches of shredded leaves or whole pine needles to protect them from the winter cold.
- Spread mulches under annuals after they are well established.
- Water the ground thoroughly before and after applying a mulch cover.
- Never rely on a rainstorm to water your mulches. In many cases, the rain will fall too heavily and quickly, and a fair amount of your mulch may run off into the storm drain and local creeks.

Compost

What Is Compost?

Compost forms when you mix together things like leaves, grass clippings, vegetable and fruit scraps, coffee grounds and filters, and used tea bags. The mixture eventually breaks down and forms humus, which you can use to enrich your soil. Compost has many of the nutrients that plants need. You can use it as a mulch or topdressing or can mix it into the soil.

How to Use Compost

- To plant a lawn or garden, mix 1 to 2 inches of compost into the top 6 inches of soil.
- To maintain a lawn or garden, sprinkle it with a 1/4- to 1/2-inch layer of sifted compost once a year and water the compost.
- To control erosion in a lawn, cover bare areas with 2 to 4 inches of compost.
- To add nutrients and control fungus in gardens or planters, use compost as one-third of a potting soil mix (with equal parts topsoil and sand).

Composting Basics

- Composting works best when you combine equal amounts (by weight) of "green" and "brown" materials in the mixture.
- The compost pile should remain moist throughout, like a wrung-out sponge, but not soaked.
- Compost breaks down faster in a pile at least 3 feet high and 3 feet in diameter, with all the materials broken into small pieces and well mixed.
- You can tell a pile is quickly and actively composting when it gets at least as hot as the hot water in your house. Temperatures this high (140 degrees Fahrenheit or higher) can kill weed seeds and germs that cause disease. Help your pile stay hot by putting it in a bin or covering it with a tarp. You can use a special compost thermometer to monitor its temperature.

Avoid These Materials

- Meat, bones, fish, dairy products, grease, and oil—they cause odors and attract pets and pests.
- Pet droppings—they can harbor diseases.
- Weeds with seeds or runners—you could wind up spreading them with your compost.
- Diseased and insect-infected plants—the diseases and pests could survive in your compost and spread.
- Shavings and sawdust from treated wood, and other materials containing strong preservatives or other toxins.
- Ashes—they slow the composting process.

When Is Compost Ready?

Using compost before it is ready can damage plants. Undecayed "brown" materials in the soil can temporarily reduce plant-available nitrogen. Undecayed "green" materials can harbor pests and diseases. Immature compost can also introduce weed seeds and root-damaging organic acids. Compost is ready when:

- it smells earthy—not sour, putrid, or like ammonia;
- it no longer heats up after it is turned or dampened; and
- it has a crumbly texture and it looks like dark soil.

Harvesting Compost

Compost can be shoveled out of a pile or bin and used just as it is, especially for mulch. Remove undecayed objects by sifting them through a screen.

- If you are using compost in preparing soil for planting or sodding, sift it through a 1-inch mesh screen. Compost used in potting mixes or as top-dressing on lawns is commonly sifted through a 3/8- or 1/2-inch mesh screen.
- Make a simple screen by mounting hardware cloth or other durable wire mesh in a sturdy wooden frame that will fit neatly onto the wheelbarrow or other container into which you will sift the compost.
- Spread compost onto the screen in a thin layer and shake it. You can work the material through the screen with a paddle if it is fine but clumpy.
- Add the "oversized" material that remains on top of the screen to a new pile to help the new pile start composting faster.

Troubleshooting

- A bad odor means your compost has too much "green" material, or it is too wet. Remedy this condition by turning the pile and adding dry leaves, sawdust, or other "brown" materials. If the odor persists for more than a day, cover the pile with a layer of mulch.
- If material is not breaking down and your pile is dry, turn it and add water until the whole pile is moist.
- If material is not breaking down and your pile is damp and sweet-smelling, add more "green" materials, such as grass clippings.
- If your pile is not warm enough, or if it is warm only deep in its center, add more materials to increase its volume. You can also move the pile into a container.
- If your pile has flies, roaches, ants, or maggots, bury food materials well under a layer of leaves, and make sure the pile is moist but not soaking wet. Any other insects in your pile are probably harmless to the compost.
- If your pile has fire ants and it is dry, turn it (carefully!) and add water. Another alternative is to use a low-toxicity bait formulation near, but not in, the pile.

COMPOST VARIATIONS

Compost Containers

You can store compost in a bin to help retain moisture and heat, keep out pests, and keep your yard tidy. You can make containers with lumber, pallets, concrete blocks, wire fencing, or other materials.

When selecting a compost container, keep the following tips in mind:

- **Capacity.** The best composting temperature is reached in a pile or bin of at least 1 cubic yard (3-foot length, width, and height).
- **Access.** Select a bin design that allows easy access for adding material, for watering, and for turning.
- **Ease of assembly and relocation.** These features allow you to easily move your bin for turning and refilling.
- **Security.** A well-managed compost pile should not attract harmful bugs, and pet and vermin access should be restricted.
- **Moisture and heat retention.** Enclosed bins work better for smaller amounts of material.
- **Flexible size and adjustable shape.** These features will accommodate changes in compost volume.
- **Aesthetics.** This is a personal consideration for both you and your neighbors.

Composting in the Ground

Burying Problem Materials

Mix smelly food scraps and insect-infested garden plants with soil and bury the mixture at least 8 inches deep in unused garden space. If the material stays moist, it will compost in a year without producing an odor or spreading diseases or pests.

Sheet Composting

When tilling in the fall, add a few inches of leaves in unplanted garden space to enrich the soil for spring planting. Avoid using this method, called sheet composting, just before planting. Much of the soil's plant-available nitrogen will become temporarily unavailable as composting microbes consume it along with the brown leaves. A few months after sheet composting, there will be more plant-available nitrogen in the soil than before.

Walkway Composting

Spread a thick layer of leaves, chipped branches, and grass clippings into shallow ditches or rows between garden beds to form walkways. Add more material later as it compacts. In a few months, most of this material will decompose enough to be incorporated into the garden soil when the soil is reworked for planting.

An Easy Compost Recipe

- Select an area that measures 4 by 8 feet, where water does not puddle when it rains.
- Place the bin or pile on half of this space, mixing brown and green materials in equal parts by weight, or about three-to-one (brown to green) by volume. Chop or shred woody materials for the pile. Water the pile as you build it to keep it thoroughly moist like a wrung-out sponge.
- Build the pile to a height of 3 feet to speed up the composting process.
- Mix greens and browns as you add to the pile. When adding kitchen scraps, bury them 10 inches or so into the pile to avoid attracting pests.
- Turn the pile over with a hay fork or shovel every two to three weeks; add water as needed.
- You can sift and use finished compost when the materials break down and it smells like rich soil.

Worm Composting

Worm composting uses worms to turn food scraps, newspapers, and cardboard into rich compost that you can add to potted plants, lawns, or gardens. It is convenient, and you can do it both indoors (even in an apartment) and outdoors. Worm composting is also the best way to compost paper.

The Worms

Brown-nose worms or red worms work best in containers; do not use night crawlers or other large, soil-burrowing worms. Composting worms are available from various stores and catalogs that sell garden soils and supplies.

The Material

- **Paper.** Paper serves as "bedding" for the worms to live in. The worms consume it along with the other materials. You can use any kind of paper, but worms will consume newspaper, cardboard, paper towels, and other coarse paper faster than fine printing and writing paper. Avoid coated or "slick" paper.
- **Food scraps.** Almost any fruit, grain, or vegetable material other than oil is good for worm composting. Egg shells, coffee grounds, and tea bags are also fine.
- **Other materials.** Add a little soil or fine sand to provide grit. Leaves and other yard trimmings can be used as part of the bedding. Livestock manure is excellent food for worms in outdoor containers.

The Container

You can use wooden boxes, plastic bins, or holes in the ground. A 1-by-2-by-3-foot box or four 10-gallon containers are big enough to compost the food scraps from a medium-sized family. Punch a few 1/8-inch holes in the upper sides for ventilation. Tight-fitting lids help keep pests out of outdoor wooden boxes, but don't use a lid with a plastic container unless the container is well ventilated. A poorly ventilated plastic container will not let enough air in and will not let excess moisture escape.

How to Compost with Worms

- Tear newspaper or cardboard into strips. Dip the strips into water, and let them drain.
- Add this paper bedding to a bin until it is one-third full. Mix in a little soil or fine sand. Start with a pound of worms for each pound of food scraps that you plan to compost each week. Unless you start composting more food scraps, you should never need to add any more worms.
- Add a 1/2-inch or thinner layer of food scraps on top, mix it lightly into the top 2 inches of bedding, and cover everything with at least 1 inch of shredded paper. Don't leave any food scraps at the surface. Wait two days or longer, and then repeat these steps as materials are available.
- When a worm bin is full, scoop out any undigested food scraps and the material that contains the most worms—usually the top 3 to 4 inches of the material. Use the rest as compost. Put the worm-rich material back in the bin, mix it with an equal amount of fresh bedding, and cover it with 1 inch of shredded paper.

FREQUENTLY ASKED QUESTIONS

What are "brown" composting materials?

Dead leaves, dry hay, wood shavings, and shredded paper are examples of "brown" materials.

What are "green" composting materials?

Vegetable and fruit scraps, green grass clippings, leaves, twigs, and flowers are examples of "green" materials.

What size is best for composting materials?

Composting occurs most rapidly when green and brown materials are reduced to small pieces and thoroughly mixed together. That way, every part of the pile gives decomposing organisms access to needed carbon, nitrogen, oxygen, and water. A pile of large chunks of material will have too much air space, and the surfaces will dry out rapidly. On the other hand, a pile of very fine materials may have too little oxygen and require frequent turning.

For best results, break down large objects before adding them to a compost pile.

- Twigs and leaves can be run over with a lawn mower or run through a leaf shredder.
- Garden plants or fleshy prunings can be chopped with a machete or pruning shears.
- Food scraps can be cut up in the kitchen or chopped up in a bucket with a square-point shovel.

Do compost piles have offensive odors?

Not if composting is done properly. A bad odor can mean that your compost pile has too many "green" materials, or is too wet. Also avoid the use of animal manures; not only are they smelly, they can harbor diseases.

Why is it important to turn a compost pile?

Turning a compost pile allows materials to move from the outside of the pile to the inside, and keeps the pile from compacting. Turning helps maintain proper airflow in your pile and assists in the decomposition process. Turn your compost pile every two or three weeks to keep the moisture level constant.

Why is compost considered good mulch?

Compost makes good mulch because it is generally free of weeds, and is inexpensive. Compost helps the soil absorb and retain nutrients and moisture, and protects plants from diseases and pests.

When should I mulch my yard?

Mulch as you mow with a mulching mower or a mulching blade on a regular mower. Returning mulched clippings to your lawn rather than bagging and disposing of them can reduce the need for lawn fertilizer by about 30 percent. Mulching your lawn in the spring (and fall, if needed) with 1/8 to 1/2 inch of compost is also a great soil-building strategy.

Should I bag my leaves in the fall?

Don't let leaves pile up. A thick ground cover of leaves blocks sunlight, which is good for suppressing weed growth in planting beds; but on the lawn, it can also suppress the growth of grass. Mow fallen leaves to create good winter mulch for your lawn, or add the leaves to your backyard compost pile.

Mulching and Composting complements the "*Take Care of Texas" Guide to Yard Care*, which is meant to be a general overview of environmentally friendly practices for your yard. For more detailed information, see the following other TCEQ "Take Care of Texas" guides:

- *The "Take Care of Texas" Guide to Yard Care* (GI-28), www.tceq.texas.gov/publications/gi/gi-028.html
- *Rainwater Harvesting with Rain Barrels* (GI-383), www.tceq.texas.gov/publications/gi/gi-383.html
- *Managing 10 Common Texas Yard Pests* (GI-405), www.tceq.texas.gov/publications/gi/gi-405.html
- *Managing Lawn Problems in Texas* (GI-407), www.tceq.texas.gov/publications/gi/gi-407.html
- *Landscape Irrigation* (GI-409), www.tceq.texas.gov/publications/gi/gi-409.html

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