UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

UC MASTER GARDENER PROGRAM OF SAN LUIS OBISPO COUNTY

The UC Master Gardener Program is a public service and outreach program under the University of California Division of Agriculture and Natural Resources (UC ANR), administered locally by participating UC Cooperative Extension offices (UCCE). Our mission is to extend research based knowledge and information on home horticulture, pest management, and sustainable landscape practices to the residents of California.

COMPOSTING: THE BASICS

RAY FESTA AND ANDY TUPPER, UC MASTER GARDENERS

Composting is a great way to recycle kitchen and yard waste and produce a beneficial soil amendment for your garden. With the proper tools, materials, and knowledge of basic rules, gardeners can produce quality compost.

Location of Compost Pile

1. Allow space for a three-sided structure that measures 3-5 feet on each side. The pile needs to be at least 3 feet to generate enough heat for decomposition.
2. Structure should be open along one side to allow space for digging and turning the pile.
3. Sun or shade does not matter as the temperature of the pile is dependent on composition, not exposure to the sun.
4. A water source should be nearby for ease of maintaining moisture in pile.

Structures

1. Structures can be prefabricated or build your own using concrete blocks, wood, wood pallets, straw bales, hardware cloth, wire fencing. Treated wood is not recommended.
2. Two bins side by side is optimal. Use one for assembling components and the second for the actively decomposing pile or use to turn and mix a single pile from one bin to the other.
3. Ensure sufficient air circulation.
4. Covering the pile helps maintain moisture and heat. Types of covers include tarps, cardboard or straw. Ensure that air can circulate under or through the cover.

Equipment

Recommended - compost fork
Optional - chipper/shredder, compost thermometer.

Basics of a compost pile

1. **Browns and greens** - The compost pile needs a ratio of carbon to nitrogen of 30:1. To achieve this, mix an equal volume of brown material and green material, a 1:1 ratio. **Brown material** includes dry leaves, dried grass, straw, woody prunings, coffee filters, eggshells, shredded paper bags, and cardboard boxes. **Green material** includes vegetable and fruit scraps, fresh grass clippings, wilted flowers, coffee grounds, young green weeds without seed heads.

2. **To chop or not to chop** - Chopping material ½ to 1½ inches will speed up the composting process. Chopping and chipping are most important for the brown material, less so for the succulent greens. Use a chipper, shredder, pruning shears, or sharp shovel.

3. **Turning the pile** - Turn the pile for air circulation, to maintain an optimal temperature, and to mix the materials. Mixing prevents dense clumping of materials, common when

using grass clippings. The longer between turnings, the longer until the finished compost. The basic rule is to turn the pile every few days to once per week.

4. **Water** - Keep pile as moist as a wrung-out sponge. Decomposition will slow in a dry pile.
5. **Temperature** - Bacteria feeding on nitrogen rich green material produces the heat. The bacteria thrive between 122°F and 131°F. Temperatures greater than 131°F kill many pathogens and weed seeds. Temperatures above 160°F kill bacteria and will halt the composting process. The ideal temperature range is between 100°F to 150°F.
6. **Adding food scraps -** Bury scraps 6-12 inches into the center of the pile. Do not leave food scraps exposed as this can attract flies and rodents.
7. **Do NOT add –** Do not add soil, wood ashes, manure, seed bearing weeds or invasive plants, diseased plants, animal products, dairy products, oil, grease or fat, glossy paper, or sawdust from treated lumber or plywood.
8. **Odor** – A foul odor means the pile is too wet or compacted or contains too much green material. The solution is to turn the pile and add brown material.
9. **Signs of a healthy compost pile -** earthy odor, heat, powdery white fungi on decomposing material, a reduction in the size of pile, and a dark brown color.
10. **When compost is finished** - Sift out large unfinished pieces through a ½ inch screen over a wheelbarrow. Return any large pieces to the next compost pile.

Compost Methods

Factors to consider when choosing a methods include the time and energy needed to maintain the pile, the amount of compost needed, and the time needed to achieve the finished product.

1. **Slow compost method -** Continuously add to pile, little or no chopping of materials, turn and water as desired, finished compost ready in 12 to 18 months.
2. **Intermediate compost method** - Build pile with no further additions, chop materials to 2 inch pieces, turn and water pile weekly, finished compost in 3 to 8 months.
3. **Fast compost method** - Build pile with no further additions, and chop materials to ½ - 1½ inch pieces. Closely monitor temperature of pile. Turn pile immediately if temperature is 150°F. Turn and water when pile 140-150°F. As the pile cools, start turning when it reaches 120°F. Once pile cools below 120°F turn and water every week. Compost will be ready in 6 to 8 weeks.

References

Composting is Good for Your Garden and the Environment. PDF. UC ANR. http://anrcatalog.ucanr.edu/pdf/8367.pdf

Giesel, Pamela, and Carolyn Unruh. 2007. *Compost in a Hurry.* PDF. UC ANR http://anrcatalog.ucanr.edu/pdf/8037.pdf

Hopkins, Roberta, and Louise Lelevich. 2015. Composting for the Home Gardener. PDF. UC ANR. http://sacmg.ucanr.edu/files/163139.pdf