Composting 101

By Nate O'Meara



Photo **"**Compost pile**"**
Maintaining a compost pile is the foundation of organic gardening. With abundant materials, the fall is the best time to start a compost pile. (photo credit: Nate O'Meara)

As an organic gardener, I love this time of year, as everywhere I look I see the makings of compost! The vegetable garden is finishing, the leaves are falling, the final lawn mowing is occurring, perennials and shrubs need a little trimming, and the waste from holiday meals needs saving. These events provide the perfect ingredients and enough volume of materials to construct a compost pile. If you are new to composting, here are the basics to help get you started this November!

What is compost?
Compost is the "black gold" of organic gardening created by the natural process of decomposition. Decomposition is a series of chemical reactions carried out by soil microbes that create heat converting organic matter into compost. Finished compost is a dark, crumbly organic matter that has a fresh, earthy smell. Compost improves soil fertility, moisture retention, workability, drainage, aeration and feeds earthworms and microorganisms. Composting saves time, money and resources by keeping refuse out of landfills.

What do I need to construct a compost pile?
There are five basic ingredients required: carbon, nitrogen, water, oxygen, and soil microbes. The ideal compost pile contains a carbon to nitrogen ratio of 30:1 or about 50% "green" ingredients and 50% "brown" ingredients. Most microbes prefer more carbon (used for energy) than nitrogen (used to build their bodies and reproduce). Water and oxygen are used by microbes to carry out decomposition. "Green" or nitrogen ingredients have lower carbon to nitrogen ratios. Examples

include barnyard manures, seedless grass clippings, plant derived kitchen scraps, and landscape trimmings. “Brown” or carbon ingredients have higher carbon to nitrogen ratios and include sawdust, twigs, dry leaves and pine needles, straw and shredded newspaper.

What should I avoid in my compost pile?
The following is a general list of materials best kept out of your compost pile:
-Egg shells, meats, bones, dairy products, oils, and greases
-Pet manure (except from bunnies or tortoises)
-Weed seeds, weed runners, or diseased plants
-Glossy magazine paper and newspaper inserts
-Fireplace ash (adds alkalinity)
-Poisonous leaves and thorny plants (i.e. roses and cactus)
-Slowly decomposing leaves or woody branches

How do I create a compost pile?
Piles can be free standing, contained in three-sided stalls, or enclosed in a bin. First, assemble enough “green” and “brown” materials for a pile a least 3ft x 3ft x 3ft but no more than 5ft x 5ft x 5ft. Chop or shred large pieces to help aid the decomposition process. Now, mix or layer the materials alternating “green” with “brown.” Moisten the layers as you go with a hose. Finally, add a few shovelfuls of native soil or finished compost to introduce millions of microbes and cover the pile with straw or pine needles to conserve moisture.

How do I care for a compost pile?
Using a compost thermometer or stick to monitor the temperature, you ideally want to maintain the pile between 140-160°F. This range kills weed seeds and sustains decomposition. Heat is achieved by turning the pile weekly with a pitchfork as temperatures begin to drop, maintaining appropriate carbon to nitrogen ratios and keeping the pile moist like a wrung-out sponge. The rate compost is created will be determined on how often you do the above tasks.

How do I use my compost?
Once you have finished compost, you can amend flower, vegetable and herb beds at planting time. You can top dress soil as a mulch to retain moisture, cool the soil, and suppress weeds. You can also apply to lawns, fruit trees and non-native shrubs for added nutrients. Learning to brew compost tea and use it as a liquid fertilizer is also a great use of compost. Or you can make your own potting soil with the simple recipe of 1/3 vermiculite, 1/3 perlite and 1/3 compost.

What’s wrong with my compost pile?
Here are some guidelines for troubleshooting your pile. Slow decomposition can be caused by lack of nitrogen, poor aeration, dryness, and/or too small of a pile. The solution is to add more “green” materials, turn and water the pile. An ammonia or rotten smell can be caused by too much nitrogen or too much water. Adding more “brown” materials will help alleviate this issue. If the pile attracts flies and pests, bury food scraps deeper in the center of the pile. In your pile contains grubs, worms, and other large insects, do nothing as this is a sign that composting is happening!

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