

Building a Healthy and Active Backyard Compost Heap

Have ingredients on hand

Always keep a supply of dry carbon materials nearby to the compost in a separate bin or a trash barrel. Carbon materials are generally dead plant matter: leaves, straw hay, stalks, sawdust, bean pods...

Shape the pile

If your compost pile is not covered, shaping the pile can help to manage the moisture content. *During dry times try for a flat or slightly concave shaped pile.* This will collect the water needed to aid in decomposition. *During wet times go for a hilled shape* to allow excess water to run off.

Timeline

If you are composting primarily kitchen scraps (and you eat veggies regularly) it should take about a year to fill a 4'x4'x4' bin. I use one bin per year. Its okay to add to a bin for many years but if you'd like to harvest from your compost you should plan to cap it at some point and start a new one. By cap, I mean call it done and leave it be to cure.

Develop your recipe

A compost recipe made with the right ingredients is an open invitation to all of the microbes to join your compost party. If your recipe is right, the full range of bacteria, fungi, nematodes, protozoa, and microarthropds will come and do the work for you, and rather quickly at that! A pile built with the wrong ingredients will result in no one coming to your compost party, or worse, will result in only stinky anaerobes, or large mammals following the smell!

There are two categories of materials that make up the ingredient list: Carbon-rich materials and nitrogen-rich materials. All matter contains carbon and nitrogen but for simplicity think of it this way: green materials are mostly nitrogen and brown materials are mostly carbon.

A 3:1 ratio of carbon to nitrogen, or browns to greens, is ideal.

Green materials are those that are still living or wet. These are your nitrogen-rich (N) materials, providing protein for our microbes. 'Greens' include all kitchen scraps, vegetative garden debris, grey water, apples from the field, anything rotting (anything at all), raw manure, weeds, and more. (I prefer to only add young weeds, or those that have not gone to seed. I never add any invasive or aggressive weeds to the compost, especially not those which spread by root. I also avoid diseased plant matter.)

Brown materials are those that are dead or quite dry. These are your carbon-rich (C) materials, providing carbohydrates for our microbes. 'Browns' include, dried and crushed leaves, sawdust, wood chips, hay, straw, cardboard, paper, stalks or thick stems (broccoli, corn, flower stalks that have dried...), and more.

Making a Deposit

Before I make a new deposit into the compost pile I am careful to add air by fluffing or gently stirring the center of the pile with a spade fork. To do this, I first pull the top layer of browns off to the side and dig a bit of a hole in the center of the pile, fluffing and mixing the center in to the side walls, leaving a depression in the center of the pile large enough to contain the incoming deposit. I add the new food scraps into the depression, mixing in some dry brown materials from the sides as I go. I finish by adding enough browns to the top to completely cover any food scraps and to preserve the pile shape. Making a deposit takes just a few minutes. Easy Peasy.

Turning

I do not turn my compost until I turn it out of the bin to use in the garden. With the right recipe, the microbes, bugs, and worms will do it for you. One exception is when the pile becomes too wet, stinky, or anaerobic. Then, I will turn the whole pile and maybe even re-stack it with extra browns to give it proper air throughout. When you turn, fluff it up to add more air. This will help to revive the aerobic microbes. Think fluff, not flop!

How do I know when my compost is ready?

You will see the contents shrink to 1/3 to 1/2 it's size as the microorganisms do their work decomposing. When the pile is finished it will stop shrinking. At that point you can turn the pile out of the bin and find finished compost therein. Any remaining brown matter that has not decomposed can be added in to the new pile as brown matter, or use it as mulch on your garden.



The right compost recipe will attract billions of microbes. As they eat your pile heats up!

Sifting compost

I sift out the brown matter that has not yet decomposed. I use it again in the next pile, or I use it as a mulch in my garden.

Trouble shooting

- If your pile is **too wet** it will stink, add brown material (carbon-rich) to fix it. Aerobic microbes consume air as they work. If the structure loses air the aerobic microbes will go dormant or die and the anaerobic dudes will move in. You may need to turn, fluff, and rebuild the pile from scratch to give it proper air circulation.
- If your pile is **too dry** it will not be active, add green materials (nitrogen-rich) to fix it. Aerobic organisms need water to survive. A pile that is too dry is not hospitable to microbes. You may need to water the pile if it has been a very dry period. If the pile is also compacted, you may need to turn, fluff, or rebuild the pile.
- If the pile is neither too wet nor too dry but activity in your pile still seems **too slow**, sprinkle a very thin layer of good soil or finished compost, edge to edge, before you make a deposit. This is compost activator. To jumpstart activity in a pile, dig in and add raw manure and green matter to the center of the pile.

Composting Steps for Bin Composting (for larger bins)

1) **Starting up.** I always start my piles by layering about 12 inches of brown, dry, carbon material spread evenly across the bottom of the pile, edge to edge in a criss-crossed pattern. Cornstalks, garlic stalks, or stems from perennials such as phlox, sylphium, or jerusalem artichoke work very well. This bottom layer is providing an well-aerated structure for a year's worth of compost to sit on top of.

2) **Create bio-filter to keep down smells.** In the shape of a doughnut, layer several inches of carbon-rich, brown materials around the perimeter of the pile leaving the center bare for your nitrogen-rich compost deposit. This perimeter hay will act as an insulator and a bio-filter around the edges of the pile, neutralizing the smell and making it less attractive to rodents and other mammals.

3) **Make a deposit.** Add your mixed food scraps or nitrogen-rich materials inside the 'doughnut hole' to be level with the perimeter of carbon materials. For large deposits, layer ingredients like you would lasagna. Keep the layers close to the 3:1 C/N ratio, so for every 3-4 inch layer of greens, add a 6-9 inch layer of browns. The side-wall biofilter and the thick bottom layer are part of that 3:1 equation too.

4) **Cover the pile.** Layer 4-6 inches of loose, brown, carbon-rich materials on top,, and edge to edge in the bin to cover the pile. Food scraps should not be visible when you are finished depositing.

5) **Repeat** steps 3-5 until the bin is full.

5a) *Pay as you go composting: Dig into the pile to create a new center hole with each deposit. Using a spade fork, pull the top layer of carbon materials to the sides of the bin revealing a partially decomposed center. Mix those contents in with the carbon matter around the perimeter, keeping the bio-filter intact and building it higher as needed. Repeat steps 3-5 in this fashion.*

5b) *Batch composting: Same system as above but create a larger center hole for your larger deposits, be prepared to layer, and have extra brown materials ready to keep to the C/N ratio.*

6) **Capping the pile.** When the bin is full, cap it with a final 4-6" layer of brown materials. Leave this finished pile to cure for about 3 months or until it has stopped shrinking. Then, dig in and harvest! The best compost will be at the bottom. Add any recognizable food scraps into your new active pile.

7) **Start a new pile in another bin.** This will be your active pile while the capped pile cures.