

# How to Compost - A Home Composting Guide

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One of the loveliest aspects of nature is that everything in it has a use -- the nasty, rotting zucchini as well as the lavender sprouting scented blossoms in the backyard. Composting can take some of our leftovers, waste and unwanted extras and turn them into fertile soil to boost the productivity of gardens and landscapes.

## What is compost?

Compost is decomposed organic material that is produced when bacteria in soil break down garbage and biodegradable trash, resulting in a product rich in minerals that is an ideal garden or landscaping amendment.

## Why compost?

- For one, it's free. You get to use kitchen waste, lawn clippings, leaves and other vegetation that would otherwise get thrown away. In fact, you might even save money on landfill fees.
- Potting mixes and soils that are rich in compost produce vigorous plants regardless of whether you're growing vegetables, growing herbs or organic rose gardening.
- Compost improves garden soil structure, texture and aeration.
- Adding compost improves soil fertility and stimulates healthy root development in plants. The organic matter provided in compost provides food for microorganisms, which keeps the soil in a healthy, balanced condition.
- Compost loosens clay soils and helps sandy soils retain water (see Improving Soils for Vegetable Gardening).
- No need to add fertilizer -- just mix compost into the soil. Compost contains nutrients that plants need for optimum growth, such as nitrogen, phosphorus, and potassium. And it's an especially good supplier of micronutrients that are needed in small quantities such as boron, cobalt, copper, iodine, iron, manganese, molybdenum, and zinc.
- It feels good. When else can you turn trash into treasure? Plus, scraps stay out of the landfill, reducing your footprint.

## How does composting work?

You mix yard and kitchen waste in a pile or bin and provide the right conditions to encourage decomposition.

Let bacteria and fungi go to work recycling waste material into fertilizer.

Mix compost into garden soil or use it on the surface as mulch.

Sounds simple, right? Well it is. Microbes are hard at work chomping down your throwaways. You supply the organic materials, water, and oxygen. The bacteria that are already there decompose the plant material into compost. As the bacteria break down the materials they release heat, which is concentrated in the center of the pile.

### So, how do I get started?

Everyone has a different level of commitment when it comes to composting. For some a rot pile in the backyard is good enough. Others want to apply the rigors of science and constant vigilance to ensure the best (and quickest) compost around. Most of us are somewhere in between.

Use the steps below as a guideline for how to compost. The more you follow them, the better your finished product will be.

1.) **Select a site** for your pile or bin. To keep your neighbors happy, consider a discreet location. You'll also want to locate a spot with good airflow, access to water and partial shade in the summer (to keep the pile from getting too hot), but good sun in the winter (to keep the pile warm).

2.) **Choose a bin.** You can purchase a compost bin, or make your own. Rotating bins make turning your treasure easy and keeps animals out, but it is easy to make a workable bin on your own (see [How to Build a Compost Bin](#)). One simple method is to track down shipping pallets. Use one for the bottom. Pound in metal support poles and add pallets by slipping them over the support poles to make your bin's walls.

Make your pile about 3X3X3 feet. This size is big enough to create its own heat, but small enough to turn. If you are using a commercial composter you won't need to worry about the size.

3.) **Add materials.** Not everything can go into the compost bin; read on to find out what can and cannot be composted.

Yes!	No!
Vegetable scraps	Meat or animal products (bones, fish, eggs, butter, yogurt etc.)
Egg shells	Coal ash
Yard waste (lawn clippings, leaves)	Weeds or weed seeds
Newspaper	Colored paper
Manure (from vegetarian animals)	Pet droppings
Coffee grounds and filters	Synthetic chemicals

Check out [Compost This](#) to find out more about what can and cannot be composted.

4.) **Monitor** temperature, aeration, moisture and the carbon to nitrogen ratio for optimum levels.

### **i. Temperature**

The easiest way to test your compost's temperature is to stick your hand in the center of the pile. If it is hot or warm -- good job. If it is the same temperature as the ambient air, the microbes have slowed down -- and so has the composting process.

You can also use a compost thermometer to take your pile's temperature. A properly working compost pile will heat up to temperatures of 140-160°F. At these temperatures most pathogens and weed seeds are destroyed. When your pile is really "cooking," it can reach temperatures of up to 170°F.

### **ii. Aeration**

Everyone needs to breathe, even tiny microorganisms, so make sure enough oxygen is getting into your pile by turning your compost often.

Use a compost aerator or pitchfork to mix your pile. If you are using a compost tumbler, you've got it easy. Just crank that lever.

If you are using easily compacted materials (such as ashes or sawdust) mix in coarser materials first. People who build large piles often add tree branches or even ventilation tubes vertically into different parts of the pile to be shaken occasionally, to maximize air circulation.

### **iii. Moisture**

The microbes hard at work in your compost pile require just the right amount of water. Too much means organic waste won't decompose, too little and you'll kill the bacteria. Compost should feel moist, but not soaking wet -- like a wrung out sponge.

Composting works best with 40-60% moisture content. More on monitoring compost moisture here.

### **iv. Carbon to Nitrogen Ratio (C:N ratio)**

For perfect compost, maintain a C:N ratio of 25 to 30 parts carbon to 1 part nitrogen, or 25-30:1. If the C:N ratio is too high (not enough nitrogen) decomposition will slow down. If the C:N ratio is too low (not enough carbon) you'll end up with a smelly pile.

In general things that are brown (dried leaves, newspaper, straw) are higher in carbon than things that are green (vegetable scraps, garden waste, grass clippings).

5.) **Mix** rich, earthy compost into garden soil, **or pile** on top of the soil as mulch.

## **Composting Tips**

Here are a few more tips to turn carrot tops (and anything else) into compost more quickly:

- Help start a new compost pile with blood meal, cottonseed meal, well-aged manure or compost starter. They are rich in nitrogen and help "fire-up" the microbes responsible for breaking down organic matter into compost.
- Chop or shred materials before putting them in the compost pile or bin. The smaller it is, the faster it will break down.
- Plants that have been treated with pesticides and/or herbicides (weeds and lawn clippings) should be avoided.
- Add a lot to your pile at once, rather than in small doses to encourage the pile to heat up.
- Turn, turn, turn. Turning compost will introduce oxygen and speed up the composting process.
- Keep you pile or bin in the sun. Microbes are more active when warm.
- Activators can get a slow compost heap sped up.
- Got compost? When finished it should look, feel and smell like rich, dark soil. You should not be able to recognize any of the items you put in there.
- Finished compost is usually less than half the volume of the materials you started with, but it's much denser.
- Apply finished compost to your garden about 2-4 weeks before you plant, giving the compost time to integrate and stabilize within the soil.

## **Troubleshooting**

Does your compost stink? Is it dry and brittle? Is nothing happening? Are maggots freaking you out? Check out these troubleshooting guides to find out what's wrong.

<http://www.cityfarmer.org/hotline73.html>

<http://www.city.davis.ca.us/pw/compost/troubleshooting.cfm>