Backyard Composting &   
Vermicomposting (Indoor Composting)

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Backyard Composting

What is compost?

Decayed organic nitrogen and carbon material used as a growing medium or plant fertilizer. Carbon materials are also referred to as “browns” include items such as: leaves, twigs, wood chips, cardboard, and paper. Nitrogen materials, also known as “greens”, are mostly your food scraps such as fruits and vegetables. This process happens naturally and takes time; however, certain techniques will accelerate the process. Your finished product will be a nice rich brown color with a crumbly and loose soil-like structure.

Why is composting important?

Composting is important because not only will it reduce the need for chemical fertilizers**,** butproperly managed compost will retain moisture and thus minimize run-off and leeching of excess nutrients into the surrounding environment. Composting helps reduce your carbon footprint and is very beneficial for your local microclimate and soil structure. **“Carbon farming”** is a new buzzword in the ecofriendly community. Essentially, it involves a number of different farming methods used in reducing greenhouse gas emissions and/or capturing and holding carbon in the vegetation and soil. Yard and food waste account for approximately 30% of garbage in landfills. By redirecting your food waste into well-maintained compost, you can reduce the amount of methane and carbon emissions from landfills through storagein your garden soil and plants.

How to start composting?

First, you will need to decide on a location for your compost. Some people prefer to keep their compost away from their house in case any unpleasant smells or animals may find refuge in your bin. However, it is best to keep your compost as close to your garden as possible to reduce the amount of labor involved. Some people plant bushes, trees, and/or flowers around their compost in order to create a barrier from smells and and/or eye sores that may displease their neighbors or themselves. More importantly, you will need a place that has good drainage so that your compost does not become oversaturated and stagnant. Next, you will need to choose what type of compost best suites your needs and budget. You may make your own compost for relatively cheap or even free (Recycled wooden pallets make great compost bins and are free) or you may buy your own. Find out approximately how much food waste and yard scraps you will have on a weekly basis and choose your bins accordingly. An ideal size for a modern day family is a bin anywhere from 3x3x3 and no bigger than 5x5x5. Smaller or larger then these recommendations may make it a little more labor intensive when maintaining your perfect temperature, moisture content, oxygen, and browns vs greens ratio. If turning your compost is difficult for you, try using rolled up hardware cloth or perforated PVC pipes in the center to let oxygen move throughout the compost more freely.

What goes in my Compost and what are the proper ratios?

Compost has four main ingredients: Carbon, Nitrogen, Oxygen & Water. The best carbon to nitrogen mix for people starting out is roughly 3 parts carbon to 1 part nitrogen. As mentioned before carbon, also referred to as “browns”, are items such as: dried leaves, pulp, straw, wood chips, twigs, cardboard & paper (Warning: Avoid paper and cardboard with lots of color print and always avoid glossy type paper and cardboard. These take long periods of time to break down and they have chemicals and ink that may stick around in your soil.) When to add water? Your compost should have the consistency of a wet sponge once it is wrung out a little. The mixture should be wet to the touch but should not be dripping once picked up. When to turn/ add oxygen? Weekly works best for most compost, but in some instances, you may need to turn your heap(s) every couple of days or so. Remember, your end goal is to have a light and fluffy soil structure that almost crumbles in your hands. If your compost isn’t easy to grab and pull apart or turn easily with a pitch fork, it is most likely oxygen-starved and has become anaerobic. Use a PH/Moisture meter and a temperature probe such as the following to help you gauge what’s best for your compost. You can get both these items together on amazon for less than $30. Ideally your moisture meter should read moist and your PH should be around 7. If your PH is becoming to acidic, add crushed up egg shells to bring it closer to 7. If your PH meter is too basic, add some pine needles to bring it closer in line to 7. Optimal temperatures for composts is anywhere from 90-170 degrees F. Decomposition is best when between 90-140 degrees F. Anything above 140 begins to harm microorganisms; however, this temperature will also sterilize your compost, killing off any weed seedlings or harmful microorganisms. Warning: Extremely high temperatures that goes above 160 F can also start the chemical process of spontaneous combustion. Turning the compost when the temperature exceeds 140 can prevent these problems.  
*Items to AVOID*: Meat, bones, dairy products, fats, oils, grease, salted items, spiced items, and manure.

* Shopping List:
  + Mosthink Soil pH Meter, 3-in-1 PH Soil Tester Soil Moisture Meter Water Meter for Indoor Plants Garden Lawn Upgraded Large Sensor, No Battery Needed = $8.95
  + Compost Soil Thermometer by Greenco, Stainless Steel, Celsius and Fahrenheit Temperature Dial, 20 inch Stem = $20.99

**Active vs. Passive Composting:**

**Hot Composting:** Creates ideal environment for microbial processes; requires more attention; compost finishes quicker; Optimal range temperature is 90-140 degrees (140 degrees is ideal). Try and stay around a constant 140 degrees. After an initial high temperature period (of a few days to several weeks), compost pile temperatures will gradually drop. Turning the compost rejuvenates the oxygen supply and exposes new surfaces to decomposition, causing temperatures to rise again.

**Cool Composting:** Continuous pile; easier to maintain; add material as available. Trench food scraps 12” deep and covers with layer of carbon; can take half a year or more to finish.

**How to use your Compost?**

Compost can be used as top dressing and/or medium in garden beds or container gardens. It is best suited for flowering plants or vegetables. You can use it as mulch for the garden and or fruit trees; Improves soil structure by enhancing nutrient content & moisture retention; attracts other worms and other beneficial microorganisms, fungi, & bacteria.

**Troubleshooting:**

Check to make sure your ratio is still in a good order. Add greens and/or water if the pile is too dry or contains too much carbon. Add carbon if the compost is over saturated, cold, and/or has any unpleasant smells. If there is an abundance of fruit flies in your compost, make sure you turn your pile and bury your food scraps so that they are not easily seen or reachable by these surfacing-dwelling insects. Compost should have a nice-smelling, earthy smell when pulled apart, and water vapor should be seen or felt coming from the middle of the pile. It should be warm/ hot to the touch. Properly maintained compost can put off heat and steam even during winter. Lastly, if you feel your carbon is not sufficiently masking any odor problems, feel free to add a layer of top soil to your compost and mix thoroughly. This will reintroduce beneficial microorganisms, fungi, & bacteria and can help kick start your compost. Mostly likely your carbon is not fine enough to properly cover your nitrogen surface area.