

Hot Composting!

Why should you compost? It helps feed you by feeding the soil. Composting takes organic materials and turns it back into soil by encouraging microorganisms to do the work. Compost improves the water and nutrient holding capacity of the soil. And you keep valuable materials out of the landfill!

- Where:** Indoors-worm bin is best.
Outside: pile vs bin vs containers.
Neighborhood sites are the ideal way to work with neighbors and the local community.
- How:** Hot composting-fast, but it's more work. In theory, hot composting can be completed in 18 days. In practice, this is dependent of ambient temperatures, the materials used and can take longer.
Static composting-slow, but easy. May not kill weed seeds or pathogens and can take a year or more.
- Tools:** Compost thermometer (Reotemp 20in is my favorite). Compost or manure fork.

Resources: Feedstock and Nutrient Balance: Composting (controlled decomposition) requires a balance of "green" organic materials (nitrogen-rich) and "brown" organic materials (carbon-rich). Obtaining the right nutrient mix requires experimentation and patience. It is part of the art and science of composting.

"Green" organic material includes coffee grounds, spent grain from breweries, hay, grass clippings, food scraps, and manure; these contain large amounts of nitrogen.

"Brown" organic materials include dry leaves, wood chips, straw and shredded paper; these contain large amounts of carbon but little nitrogen.

Particle Size and Microbes: Grinding, chipping, and shredding materials increases the surface area on which microorganisms can feed. Adding a handful of compost provides the organisms that do the composting. However, it isn't necessary to add microorganisms as the organisms are ubiquitous.

Moisture Content: Microorganisms living in a compost pile need enough moisture to survive. Water is the key element that makes the nutrients in organic material accessible to the microbes. Too much water can make things go anaerobic; composting slows or stops and it stinks. If the pile dries out, water it or expose it to rain. I cover my piles with a tarp to control moisture.

Oxygen: Turning the pile aerates the it. Aerating the pile allows decomposition to occur at a much faster rate than anaerobic conditions. After it gets hot, I turn it every day or every other, if I have time.

Temperature (hot composting): Microorganisms require a certain temperature range for optimal activity. Certain temperatures promote rapid composting and destroy pathogens and weed seeds. Microbial activity should raise the temperature of the pile's core to at least 140° F for several days to a week. If the temperature does not increase, usually adjusting one or more of the previous four factors can bring about the proper temperature. I usually add spent brewery grain when it's not getting hot after 3 days.

Phases of composting:

1. Mesophilic Phase- heats up to 110 F
2. Thermophilic Phase- heats up to 130-160 F
3. Cooling Phase-cools to ambient

How do you know when it's done?

Temperature is ambient and doesn't increase the day after turning it. It smells good, like compost, not sour. You can also test it by germinating radish seed in the fresh compost; they are very sensitive and grow poorly if at all in unfinished compost. Check the pH; finished compost should be close to neutral.

Berkeley Method (aka Hot composting):<https://deepgreenpermaculture.com/diy-instructions/hot-composting-in-18-days/>

Community Composting

(Muni):<https://www.muni.org/Departments/SWS/Recycling/Pages/CommunityCompost.aspx>

UAF Publications:<http://cespubs.uaf.edu/publications/?cat=&s=composting>

Questions? Contact me (Christine) through **Spruce Tip Farm and Nursery** on FB, or email: clwilcox@acsalaska.net