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In proportion

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By Alex Féthière



Two separate compost batches show very different fungal contents. The one at right is darker with humic and fulvic acids, showing higher fungal biomass. (*Alex Féthière*)

If you'd told me years ago that homemade compost can be ready to use in 21-24 days no matter the weather, I might have gone the extra mile to formulate it properly. Had I known it continues to be optimally bioactive for another six months, I would have distributed it as quickly as I made it, rather than letting it sit until it becomes glorified topsoil.

I tend to save things that are difficult or time-consuming to make or obtain. Hitherto, my compost took so long to mature that it was too special to use.

Now that I know everything in it is dead, I can casually spread my New York-made compost I've hung onto for six years. Even were the biology in it alive, it would not be compatible with these environs.

In my thinking prior to this soil science course, feeding everything with compost made logistical sense only if compost were produced in broad volumes. So much would be necessary that I would need a tractor, front-end loader or turner to generate adequate quantities.

I might still need to scale up my output, but first I will have to see whether a large pile finished every 21-24 days is enough for my plantings. The key ingredient I had been missing is high-nitrogen

kickstarter: e.g., chicken manure, nitrogen-rich alfalfa or fish guts.

The Klickitat County Compost Mix Calculator offers some thumbnail values for compost materials, expressed in C:N ratios of how many carbon molecules present for each nitrogen molecule. Chicken manure is 6-10:1. Other values are quoted online by various extension offices.

Such material, mixed into the pile at 10% of the total volume, raises the temperature by fueling a boom in microorganism populations. Compost-pile bacteria reproduce every 20 minutes if they have enough food. Complementary fungi take three hours to propagate, and both will bring the whole mound to a temperature inhospitable to pathogens and weed seeds.

Under ideal conditions, they'll do it fast: 30 degrees an hour! No wonder some people use composting to produce hot water for washing.

In winter, we need more high-nitrogen material, up to 20% of the pile's volume, to compensate for lower ambient temperatures. Sheltering it from rain and the worst winds, we could yet make compost all winter that's ready for spring.

You only have one chance to get a compost pile right - when you're building it. My composting had always been cold and slow because I added materials gradually, and sometimes allowed them to reach advanced stages of decay before composting them. They had already off-gassed much of their nitrogen through anaerobic decomposition.

If a pile is to be built slowly from kitchen waste and high-carbon materials only, it makes better sense to use a static composting design or use worms to make vermicompost of it. For building a hot composting pile all at once, it's best to store materials dried or frozen until the time comes to wet or thaw them before adding.

I'm keeping my kitchen scraps in 5-gallon buckets in a chest freezer until I have enough of them to compost. These make up the "green" component at 30% of the pile, which sustains bacterial populations after the high-nitrogen component has ramped them up.

There's never any shortage of woodchips, cardboard and leaves around here. That makes up the 50-60% of woody material constituting the "brown" component of the pile.

Mixing these together with high-nitrogen kickstarter on a tarp and ensuring each ingredient contains 50% moisture (by squeezing 1-2 drops of water from handfuls randomly sampled) before adding to the composting enclosure should be all the moisture you need, especially in our damp winter.

Compensating for sodden ingredients with drier ingredients is OK, because the entirety is well-mixed.

Stick a 4-foot stainless-steel composting thermometer into the center, tent some tarp over that to keep rain off, and check it daily until you record temps of 131 degrees Fahrenheit for three days, 150 for 48 hours, or 165-170 for 24 hours. Then shuffle twice as described last week to repeat heating evenly.

When it's cooled, it's ready for use.

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