Quality Home Composting without Breaking Your Back!

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You might say, "I already am composting without breaking my back." Compost definitely happens when you throw your garden trimmings, kitchen waste, dog hair, fingernail clippings, and other suitable organic matter into a pile. It may take a year or two to break down—but at least you don't have a broken back.

The downside of lazy or cold composting

The downside is that your pile may attract and breed more flies, yellow jackets and rodents than you enjoy. Your chickens may get into it, eat something moldy and die *en masse*. Your finished compost may contain weed seeds and pathogens. Nutrients may be leached out by rain all winter long. And, if your pile is too wet it may go anaerobic and stink—this is the one that gives compost a bad name!

On the upside, if your cold pile is covered with at least six inches of browns (such as a mulch of pine needles or dead leaves) and you are burying kitchen waste two feet deep in the pile, it will probably be successful, unmolested and teeming with beneficial FBI (fungi, bacteria and insects/worms).

If your pile is full of enough worms, they will digest everything and create wonderful worm castings out of your waste. However, your worms will not be productive during the cold winter months because they operate best at 60–80F.

Why compost when Green Waste will pick it up?

Well, it's better than sending it to the landfill. But your valuable raw materials will travel a long distance in gas-guzzling trucks and be turned by monstrous tractors. It will reach temperatures higher than 160F, resulting material that will probably be sterile and have lost its disease-fighting properties—but it will be free of weed-seeds and pathogens.

What is responsible for compost quality?

With composting, diversity in your decomposer micro- and macro- organisms is everything. You want the broadest spectrum of decomposers to add value to your compost—and there are billions of them.

Each one is activated by different conditions and temperatures in a complicated dance, releasing nutrients into the compost and giving it superior attributes!

This universe of organisms is commonly referred to as FBI— Fungi, Bacteria and Insects/worms. Some of the most valuable ones operate at lower temperatures. The benefit of the high-heat phase of composting (135–155F) is that it is fast and kills most weed seeds and pathogens.

During the low-heat, early phase of composting, fungi and other organisms set the stage for a succession of decomposers and lay the foundation for becoming reactivated later in the curing phase of composting after the high- heat bacteria have finished their job.

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The invertebrates (including slugs, snails, spiders, beetles, mites, ants, springtail and sowbugs) also contribute great value during the cooling and curing phase of the compost.

When worms digest the compost, they wiggle their way through the pile and aerate it, keeping the "FBI" alive. They digest everything and excrete valuable worm castings. To my mind, there is no point in making just compost when you can take it one step further and let worms digest it.

What's involved in hot composting?
Hot or batch composting requires that you assemble a large volume of browns and greens at once, sprinkling in water as you go. The minimum size for this volume is 3' x 3' x 3', but larger is better because only the center portion will heat up unless you insulate the sides with straw bales or other material. More detailed instructions are available in the *Nevada County Gardening Guide* and many other sources.

The backbreaking part of hot composting
For 2–4 days the temperature of your pile will slowly rise, as the low-heat organisms go to work. After this, your pile will reach and sustain temperatures in the weed-seed and pathogen-killing zone of 135–155F for up to a week, then steadily decline.

If you turn/aerate the pile it will heat up again. Turning is repeated for 3 or 4 more cycles until the compost no longer heats up upon being turned. A minimum curing period of 6 weeks after cooldown is recommended.

Spare your back, save your time
After your pile has heated up once, you can JUST SAY NO to turning it and treat your pile as an honorable cold pile. Or you can give it a halfhearted turn by making a hole in the middle and chucking the material on the outside to the middle. Feel free to do this.

Unless you own a tractor, have numerous suitors willing to do anything for you or young unpaid interns, turning compost repeatedly may not be the most efficient use of your muscle power or time.
Next, for best results, seed your pile with red wigglers. They will gravitate to the parts of the pile that are optimal for them. The center may still be too hot for them, but in winter—especially if your pile is insulated—the lingering warmth will keep them productive. They will prosper and multiply!

Depending on how large your worm population is, you could have a bin of pure worm castings by the next spring. If you have started another hot pile by then, your worms will migrate to the edges of the new pile.

Tips for improving hot-to-cold composting
- Stockpile your browns so you are ready when you come across a large volume of greens to start a new batch. Good sources for greens: pond weed, used coffee grounds, weeds or your cover crop, chicken manure (offer to clean your neighbor's coop) and manure from herbivores (be sure to use only fresh, MOIST horse manure, as it is impossible to moisten once all dried out and will probably contain weed seeds).
- Insulate your compost with straw bales or spoiled hay to make that first round of heat as efficient as possible. You can also build your compost with one side up against a hill, boulder or previous pile of compost.
- Create a dedicated compost pile for weeds gone to seed—don't contaminate your good compost. Confine it to an area where you can hoe down the weeds as they germinate. Or you can use your weedy compost underneath overlapping sheets of cardboard in "sheet mulching." Use your good compost or mulch on top of the cardboard. The weed-contaminated compost underneath will never see the light of day. This is also an excellent way to kill existing weeds without using herbicides. For information on sheet mulching look at http:// graysharbor.wsu.edu/Weeds/ documents/ sheetcomposting.pdf
- Whether you have a cold pile, a hot pile or a hot-to-cold pile, get some worms and give
- them the time they need to digest your pile. You can use worm castings as a soil amendment or make biologically active compost tea out of it. For more information on compost tea, visit http:// extension.oregonstate.edu/ douglas/aerated-compost-tea
- Build each compost pile close to a water supply and where you plan to use finished compost.

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- Multi-task your compost pile in creative ways: use it as bottom heat to germinate seeds in spring...situate it next to your garden to moderate cold night temperatures or as a windbreak….build it on top of weeds to smother them. Your imagination is the limit!

Online resources

http://www.gardening.cornell.edu/
http://www.extsoilcrop.colostate.edu/ Soils/powerpoint/compost/ Composting_Horse_Manure.pdf
http://vric.ucdavis.edu/pdf/ compost_rapidcompost.pdf
http://compost.css.cornell.edu/ physics.html
http://web.extension.illinois.edu/ homecompost/science.html

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