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A Guide To Creating a No-Till Garden

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Sheet mulching, also called composting in place, sheet composting, and lasagna gardening, has many names and just as many variations. But here's the basic idea: instead of pulling out sod, tilling or digging the soil, and incorporating compost or manure to create a garden bed, sheet mulching builds the soil on top of what's already there. The process, then, is one of *construction* rather than *disruption*. And you need a little mental tweak to think like a sheet mulcher: instead of picturing what you need to remove from a certain spot of field or lawn to build a garden bed, you think about what you can pile on top of it that will smother the weeds and break down, over the course of some months, to build a rich, loose soil. The process more closely mimics nature's soil-building process – imagine a forest floor covered with leaves, rotting logs, decomposing plants, seeds, and animal scat. Sheet mulching works *with* instead of *against* natural processes, and therefore might save effort, especially in the long-run. While sheet mulching does not bring instant gratification, given that a bed requires months of waiting until it is ready for planting, it certainly can satisfy a desire to treat the soil well. Mulching builds soil over time, in contrast with the quick but short-term flood of nutrients brought to the surface through tilling.

Benefits and Challenges of Sheet Mulching

Mulching, popularized by Ruth Stout's classic *No-Work Garden Book*, though easier than hand-tilling soil, is still quite a bit of work. The materials required are also significant: to mulch 50 square feet with about a foot of material, you would need two cubic yards, or a pickup truck-full of mulch. The good news is, to do the easiest kind of sheet composting, you need only the simplest of materials, and they are things that you probably already have, like newspaper and yard waste. And there's more good news: if you use a final two inch-thick mulch layer of weed and seed-free organic matter such as straw, fine bark, or wood shavings, your garden should have few weed problems. Mulching also keeps the soil moist and shaded – it's good protection from the harsh summer sun for beneficial soil organisms like earthworms. A sheet-mulched bed achieves a spongy consistency which is ideal for young roots seeking early passage through the soil toward nutrients and moisture. To maintain the benefits of

sheetmulching, gardeners should avoid stepping into the bed, which compacts the soil. Permanent steps (made of pieces of wood or stone) can be placed throughout a garden bed in order to provide access for planting, weeding, watering, and harvest.

Preparing a No-Till Bed

To prepare a bed for spring planting next year, it's best to begin in late summer. To begin the sheet mulching process, first cut down the grass or weeds in the area you'd like to transform into a bed. Lay the clippings down, then add a layer of newspaper at least ten pages thick and overlapped by at least six inches to smother the grass and weeds. Weeds will come up wherever the newspaper does not adequately overlap. If the day is windy, wet the newspaper as it is laid to prevent it from blowing away. The next step is where you might get a little creative. Because there is no one way to sheet mulch; you should use whatever organic materials are available to you. Thinking that the mulch has to be done in a very specific way might be a barrier to your trying it out, so use what you have or what you can easily get. Grass clippings, non-animal food scraps, unfinished compost, leaves, and yard waste are all great mulching materials.

You should keep a few simple rules in mind. First, the combination of mulch layers should be a foot or two deep. (This layer will settle with the weight of winter snow) Shallower mulching won't effectively smother sod or contribute to soil fertility. Next, think about ways to keep the mulch from blowing away. You could top the bed with thickly matted straw or leaves. Also, you should avoid using woody material that won't break down by springtime. A thin layer of wood shavings, for example, works fine, while wood chips take too long to decompose. Finally, your carbon to nitrogen ratio should be about 30:1, the same as in any typical compost pile. A 30:1 carbon to nitrogen ratio for compost is ideal for both the rate of decomposition that it generates and the quality, texture, and nutrient content of the finished compost. Carbon sources are those organic materials that are dry or woody and tend to be brown or dead. Great carbon sources for sheet mulching include dry leaves, straw, and newspaper. Nitrogen sources are any "green" or wet, fresh material, including non-animal food scraps, animal manure, and green grass clippings. To give you an idea of what a 30:1 carbon to nitrogen ratio looks like, it's roughly the C:N ratio found in animal bedding, which typically incorporates both hay and manure. A three-inch layer of dry leaves topped by an inch of food scraps also provides a 30:1 ratio.

A Recipe for Sheet Mulch

Here are more specific recommendations of layers you might add after the newspaper. First, lay down four to six inches of grass clippings and leaves. If possible, shred the material to help prevent matting. Next, broadcast or dust the leaves and clippings with a light layer of soil amendments such as lime, greensand, and rock dust. You might also layer comfrey and dandelion leaves here, as they are both bioaccumulators that concentrate nutrients from the soil in their leaves, and will release these nutrients back into the soil as they decompose. Because both dandelion and comfrey sprout easily from small sections of root, however, be sure to use only their leaves. Finally, add a layer of animal bedding and top it with straw. Enjoy the winter as your new garden bed fertilizes and builds itself. In the spring, you should be able to plant starts directly into the mulch after brushing aside the straw. To sow seeds, you may have to add a thin layer of compost in order to achieve the best consistency for germination.

Creating a Path System

If you are considering adding paths around and within your garden they can be created at the same time as your new bed. Paths not only provide access to your garden, but they also serve as a buffer zone that keeps the lawn from taking over the edge of the garden. Paths need not be very wide. Two to three feet is generally enough for access with a wheelbarrow or garden cart. Paths will naturally widen with use, so err on the narrow side to start. The same mulching techniques described above also work for paths, although path mulching only requires two layers. Rather than using newspaper to suppress weeds, try cardboard. Overlapped sheets of brown cardboard, with the staples and tape removed, will take longer

than newspaper to decompose, keeping your paths weed-free for a longer period of time. Remember to overlap the newspaper in the bed with the cardboard on the path or you will find the space between the two colonized by unwanted weeds. Lay a thick layer of bark mulch or wood chips on top of the cardboard to create a tidy, useful path.

Start Now

Instead of harboring regrets about what you might have done this summer, plan ahead for next year's garden by sheet mulching now. Planting your garden in the busy spring season will be less of a struggle, as your bed will have fewer weeds. Spring planting will be also be less weather dependent – you'll be able to utilize the soil earlier during the wet spring than you would if you were using a rototiller. If nature takes its course, you'll be enjoying the fruits of your labor at this time next year, and thinking about your next sheet-mulched garden expansion project.

Michelle Nowak served as the Garden Manager at D Acres of New Hampshire during the 2005 growing season. D Acres of NH is an Organic Farm & Educational Homestead committed to promoting a more sustainable future through farm-based workshops, internships, and public access. Learn more at www.dacres.org ^[2].

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[1] Michelle Nowak: <http://www.dacres.org/No-Till%20Garden.htm>

[2] www.dacres.org: <http://www.dacres.org/>

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