County Conservation News

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Contact Us

GreenTeam@co.lewis-clark.mt.us

Composting 101

Compost is "a mixture that consists largely of decayed organic matter and is used for fertilizing and conditioning land."[1] Composting reduces household waste (and thus waste that would end up in a landfill), it saves money by negating the cost of traditional chemically induced fertilizer and decreasing the need for irrigation, and it is good for the environment (and your soil). It is also cheap and easy to do. Compost is comprised of the following (decomposed) materials[2]:

- Kitchen Waste
  - Fruit and Vegetable wastes
  - Egg Shells
  - Coffee grounds (including paper filters), tea bags, used paper napkins
  - Corncobs - should be shredded to make them break down quickly
- Yard Waste
  - Grass clippings - Some grass is okay, but too much will add excess nitrogen to the compost pile and make it smell bad. It may be best to use a mulching lawn mower for your grass
  - Leaves
  - Pine needles
  - Weeds
  - Woody materials (branches, twigs)
  - Straw or hay
- Newspaper
- Seaweed, kelp or marsh grass hay
- Sawdust (excellent source of carbon)

The following materials should **not** be composted:

- Human waste or pet litter **-** They carry diseases and parasites, as well as cause an unpleasant odor.
- Diseased garden plants **-** They can infect the compost pile and influence the finished product.
- Invasive weeds **-** Spores and seeds of invasive weeds (buttercups, morning glory, and quack grass) can survive the decomposition process

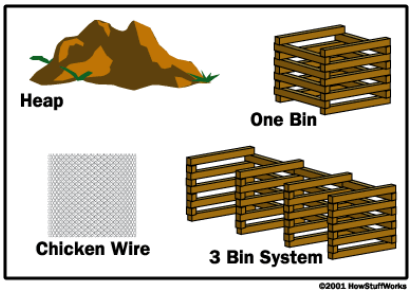
and spread to your desired plants when you use the finished compost.

- Charcoal ashes **-** They are toxic to the soil microorganisms.
- Pesticide-treated plant material **-** These are harmful to the compost foodweb organisms, and pesticides may survive into the finished compost.

How-to: Make Your Own Compost

Creating your own compost column is easy to do. It can be achieved by following these five steps[2].

1. Choose a site: choosing a site is an important consideration. You want the site to be downwind, because even well managed compost may occasionally emit foul odors. You want the pile to obtain sunlight during the winter to keep the pile warm, but too much sunlight during the warm summer months will dry out the pile. Therefore, choosing a spot near a deciduous tree will allow the pile to receive sunlight during the winter and shade during the summer. Also, you want to locate the pile on bare earth (as opposed to concrete) at an area that does not accumulate water.
2. Choose a structure: there are typically four different kinds of structures to create compost in. Your choice of structure depends largely on your desired effort and expense. The cheapest and easiest method is to simply pile all the ingredients into a heap and let nature do its job. This is referred to as passive composting, and is less effective than active composting (where you manage the compost pile). Active composting bins are often made out of chicken wire, wood, or concrete blocks. You can have a simple one compartment system, or multiple compartments. Using a one compartment system, you add new materials to the top, turn frequently, and collect finished compost from the bottom. Using a multiple compartment system, you would add new materials to one bin, transfer partially finished compost to another bin, and use the remaining bin for finished compost.



3. Add the ingredients: now that you have chosen a site and built your compost column, you will need to "feed" it. Add the ingredients listed in the previous section to start generating compost.
4. Care and feeding: add new waste to the top with fresh soil. Water the compost regularly to keep the compost moist. Turn the compost daily, or every other day to provide oxygen to the pile.
5. Collect the finished compost: there is no exact definition of time frame when compost is done. One should note the volume, size, and smell of the waste. Has the waste decomposed by at least 50%? Are the fragments of waste small? Does the waste smell like earthy soil?

These are simple steps to completing a basic composting column. There are many more possible considerations. For example, one can use worms to help decompose the waste faster. This can speed up composting times by 50%. There are also different kinds of compost. The following section will discuss some different options.

Composting Options

Aerobic Composting

- This is composting with air. Aerobic microbes are doing the work of decomposing your wastes and need air to survive. To introduce air to your compost pile you can use a fancy tumbler designed to turn like a bingo cage, or you can take a shovel or pitch fork (or any other long handled tool for that matter) and lift and turn over the materials loosening up the pile and adding air into the mix.

Anaerobic Composting

- This occurs when your pile is too wet. Air is not able to get into the pile between the matrix of materials, and anaerobic microbes take over. They still get the job done, but in a much longer time frame. To avoid this, make sure you don't over water your compost pile and turn it as necessary.

Hot Composting

- This occurs during aerobic composting; the microbes give off heat as they digest the materials. This is optimum, as your compost pile reaches temperatures between 110° and 150° the heat will destroy most pathogens, weed seeds, and fly larvae that may be in your pile. Test your pile with a thermometer if available, or push your hand into the pile about 8 inches, the compost should be warm enough that you can only have your hand there for a few seconds.

Cold Composting

- This is slow composting, but takes little work. You just pile your materials into a bin and leave them, adding to the top whenever you have the materials. It will take months to a year or more for the decomposition to finish, but if you're not in a hurry to use your compost and have little time, this may be for you.

Vermi-composting

- This is composting with worms. You have a dark colored bin with a tight fitting lid where you have punched air holes. It doesn't need to be deep, the worms will use only the top 12 inches of detritus. You put your starter materials in your bin, add your worms, cover them up, put on the lid and put the bin in a cool dry place. Your worms will eat your materials, digest them, and leave you worm castings which are high in nutrients that are beneficial to your plants.

[1] http://www.merriam-webster.com/dictionary/compost
[2] http://home.howstuffworks.com/composting.htm