

Mulches in the Garden

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A variety of additions to your soil

Mulches have been used for thousands of years to suppress weeds and minimize moisture loss in agricultural systems.

The main consideration is whether or not the mulch material will be worked into the soil at some point. For example, plastic sheeting is used extensively in agriculture, but the plastic is taken up every year. Progress is being made to develop a biodegradable sheeting composed of plant fibers that will break down in the soil.

The concept of "greens and browns" used in composting is very important in considering what kind of material to use as a mulch. "Greens" refer to a kind of material such as fresh green plants that break down quickly, because they are high in moisture and nitrogen content. "Browns" are material high in cellulose, low in nitrogen and provide the fuel for the composting process.

Bark is frequently used as a mulch, especially in landscaping and yards, but it should not be incorporated into the soil, because it is very hard to break down. Materials such as straw is much easier to break down, and the bacteria will love it. Their populations will explode, and they will make short work of straw and similar products. The problem is the bacteria population will use up all the available nitrogen, and the plants we are trying to grow will suffer from a nitrogen deficiency.

In landscaping, even materials such as gravel and volcanic cinders are used as decorative mulch, but they are usually underlain by some kind of landscaping cloth. Compost can be used as a mulch with the intention of working it into the soil at some point in the future.

When purchasing compost, one should be aware that not everything sold is as good as what is made by master gardeners in the Discovery Garden! Some compost on the market may contain large amounts of straw that can cause a nitrogen deficiency.

Purchased compost may contain roots of horse tail and other weeds. Sometimes horse manure compost may contain herbicides associated with the hay that the horses consumed. There have been cases of tree bark containing pathogens. There is also a possibility of compost made from recycled fruit and vegetables containing a large amount of sticky labels. All those little labels that are put on fruit will persist through the composting process.



Bark is frequently used as a mulch, especially in landscaping and yards, but it should not be incorporated into the soil because it is hard to break down. *Photo by Nancy Crowell/WSU Skagit County Extension Master Gardeners.*

In addition, there is the issue of compost made from sewage processing plants. In well managed systems, all of the fecal material has been consumed by bacteria which die when they use up all the food. The particulate matter that is recycled is the dead bacteria itself.

In the La Conner system, a great deal of compost is added to the sewage sludge and allowed to heat up to about 200 degrees, which is hot enough to kill any remaining pathogens. The big concern some people have is the chemical and heavy metal content that may be present. The good news is that the final product of the La Conner compost has been lab tested and is very low in chemicals and metals. The bad news is that the chemical and metals stay in solution and are removed with the liquid effluent and released into the wild. In some agricultural systems--not in the United States— raw human sewage is applied directly as a fertilizer.

Soil itself can be a mulch if it is broken up, thereby minimizing moisture loss through capillarity.

Technically speaking, plants themselves could be thought of as a mulch. Cover crops are plants grown to suppress weed by shading them out. Keep in mind that cover crops should never be allowed to go to seed. Plants used as a cover crop should be understood and well managed.

There are a wide variety of mulches. Be sure to consider the pros and cons of each type of mulch before you add it to your garden.

RESOURCES:

- Brady, Nyle C; *The Nature and Properties of Soils*; Macmillan Publishing Inc.; 1974
- Solomon, Steve; *Gardening West of the Cascades*.