



Mulching

"The plants we've chosen will collect and cycle Earth's minerals, water, and air; shade the soil and renew it with leafy mulch; and yield fruit and greens for people and wildlife." Toby Hemenway, author



CONSERVATION
in your
BACKYARD
WE CAN ALL HAVE A HAND IN IT

The quality of items we need to survive and enjoy life, such as food, water and air – as well as the health of plants and animals – is determined by soil health, especially the topsoil. Mulches help protect valuable topsoil and can improve soil health and much more.

Conservation practices used in agricultural fields can be used in your backyard, such as straw used in orchards to crop residue left on fields, to protect the soil. These same concepts used in gardens protect and reduce the weather's impact on the plants as they grow, improving growth and production.



What is mulch?

Mulches can either be organic, such as leaves, grass clippings, straw, bark chips, and evergreen boughs, or inorganic, such as stones, brick chips, and plastic. Mulch is an organic topdressing that mimics natural growing conditions, where organic matter falls to the ground, decomposes, and recycles into new growth.

Difference between compost and mulch

Both are typically comprised of organic materials and both are beneficial for gardens. They can even accomplish the same purpose.

Compost is organic ingredients mixed together, turned and "cooked" to decompose over a length of time. The process creates a natural amendment that is rich in minerals and when added to the soil, provides valuable microorganisms. Compost improves the quality of the soil and can also improve the texture making it a more hospitable environment.

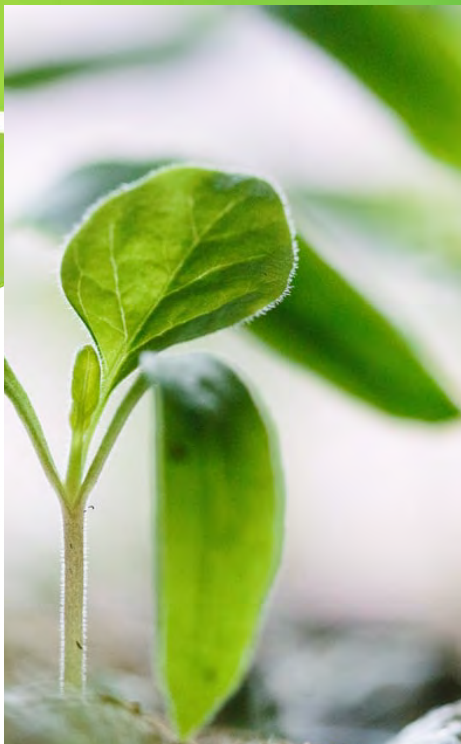
Mulch is a product which is added to the top of the soil around the base of the plant to hold in moisture, discourage weeds and help regulate the temperature of the soil.



Mulching Benefits

Mulch is a good gardening and landscaping decision that offers many benefits that make it worth the time and effort.

- Retain Moisture
- Improve Soil
- Reduce Weeding
- Protect Soil
- Protect Plants
- Pest Control
- Protect Fruits and Vegetables
- Improve landscape aesthetics



Above: Before and after photo of mulch improving the landscaping and providing plant benefits. Photo Credit: Precision Photography and Videography

Mulch helps plant health and growth by capturing moisture, improving soil health and regulating soil temperature.





Calculating Mulch Needs



Rule of thumb: A 2-inch depth of organic mulch is ideal to retain moisture and keep down weeds. The maximum depth you use depends on the mulch type: Finely textured, like shredded hardwood, should be no more than 3 inches deep. Coarse textures, such as pine bark nuggets, allow more air movement so you can go up to 4 inches deep.



This is one time when more is not necessarily better. Plant roots need air to survive, and too deep of a mulch layer can suffocate roots and cause water to run off the top of the mulch instead of filtering through and soaking into the soil below.



Mulch Coverage Chart

| Depth | 1 Cubic Yard Covers |
|-------|---------------------|
| 1/2" | 648 Sq. Feet |
| 1" | 324 Sq. Feet |
| 2" | 162 Sq. Feet |
| 3" | 108 Sq. Feet |
| 4" | 81 Sq. Feet |
| 5" | 65 Sq. Feet |
| 6" | 54 Sq. Feet |

- Mulch is sold bagged or bulk by the cubic feet or yard. Bagged mulch is often easier to handle, especially for smaller projects. Most bagged mulch comes in 2- or 3-cubic feet bags.
- Estimate the square footage of your bed. Multiply width by length for square or rectangular beds—or for round beds, multiply the radius (distance from the middle to the edge of the bed) by itself, and then multiple that total by 3.14.
- One cubic yard of the material covers a 324-square-foot area an inch deep, so to determine your total, multiply your square footage by the depth in inches desired, then divide by 324.
- Formula: Square footage x desired depth/324 = cubic yards needed.





Types of Mulch



Sawdust/Shavings - Use 2 to 3 inches of sawdust in vegetable and small fruit beds, flowerbeds and in paths. Use well-rotted sawdust but be prepared to add a high nitrogen fertilizer if plants become pale or yellow in color. Shavings last longer than sawdust and will not mat as badly, decompose rapidly but can blow away easily during strong winds.



Leaves/Leaf Mold - If you have trees on your property, shredding the fallen leaves creates a nutrient-rich mulch at no added cost. A lawn mower with a bagger will collect leaves and cut them into the perfect size for mulching. Leaf mold is a form of compost made of leaves alone. As opposed to regular compost, the breakdown process is done by fungus instead of bacteria. This is because leaves are basically all carbon and contain almost no nitrogen. Leaf mold is a soil conditioner. It does not supply the plants with nutrients like compost does, rather, it improves soil structure. There is one main disadvantage to using leaves as mulch and that is that some leaves are acidic. It's a good idea to test your garden soil in the spring and add lime if soil acidity is too high for the plants you are growing.



Pine Needles - Needles are green when fresh then turn reddish brown to gray upon drying, and supply phosphorus, nitrogen, and calcium as they decompose. Pine needles make attractive mulch which is good for acid-loving plants such as rhododendrons, marigold, azaleas, gardenia, and hydrangeas. Pine needles are less expensive and go further. However, they do biodegrade more quickly and need to be replenished more frequently, which offsets original savings. Tip: Berries are ideal for pine needles like strawberries, blueberries, raspberry as well as most herbs and vegetables. Vegetables do quite well in soil that has a 6.5 to 7 PH level, which pine needles create.



Grass clippings - These should be used only before grass seed has ripened, must be spread thin (two inches or less) and allowed to dry. If applied too thick they will build up heat and foul odors and become slimy during decomposition. Tip: Do not use if sprayed recently.



Straw - Straw is coarser, more durable than most kinds of hay, and in most instances, is not attractive in ornamental plantings unless chopped. Straw requires applications of nitrogen because of its non-decomposed nature. Straw needs to be weed free and can be used on a vegetable garden. This product is also a great way to keep perennial plants protected over the cold winter months. Make sure straw has not been sprayed or is organic. Tip: Keep the straw away from the leaves and stems of the plants, as it may spread fungus to your garden crops.





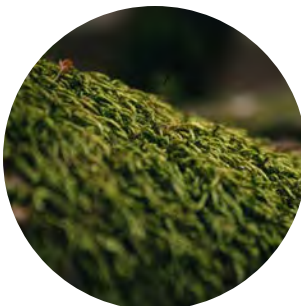
Wood Chips - Wood chips are long-lasting, lie flat, and do not blow away easily in strong winds. Wood chips are not a good choice for vegetable and annual flower beds, since they get in the way as you dig the beds each year. Bark mulch and wood chips are sometimes used with landscape fabric or plastic. The fabric or plastic is laid on top of the soil and then covered with a layer of bark chips. A caution to this practice: while the plastic or fabric may initially provide additional protection against weeds, as the mulch breaks down, weeds will start to grow in the mulch itself. The barrier between the soil and the mulch also prevents any improvement in the soil condition and makes planting additional plants more difficult.



Newspapers - Use only newspaper text pages (black ink); color dyes may be harmful to soil microflora and fauna if composted and used. Use 3 or 4 sheets together, anchored with grass clippings or other mulch material to prevent blowing away.



Biodegradable mulch - There have been biodegradable mulch coverings developed made from corn starch and other elements from the ocean but read directions and reviews to see if this technology is an option for what you want to accomplish since it can be expensive for a large area.



Peat Moss - Fine texture and good color are characteristics of peat moss, but it tends to dry out and water may run off rather than be absorbed by it.

While **inorganic mulches** have their place in certain landscapes, they lack the soil improving properties of **organic mulches**.

Inorganic mulches, because of their permanence, may be difficult to remove if you decide to change your garden plans later.

Therefore, this tip sheet is limited to the use of organic mulches.



Proper Use of Mulch

Mulch is the ultimate gardening time-saver. Flower beds to vegetable gardens will reap many benefits when properly done.

In garden beds, organic mulches can be incorporated into the soil each year to improve soil structure. Regardless of the source of organic matter, two important factors to remember is the stage of mulch decomposition and the relative salinity of the material. Take old mulch out because it may suffocate plants.

Many fresh materials may require a nitrogen source added to the mulch to avoid nitrogen tie-up. With organic mulches, adding a nitrogen source depends on the state of decomposition.

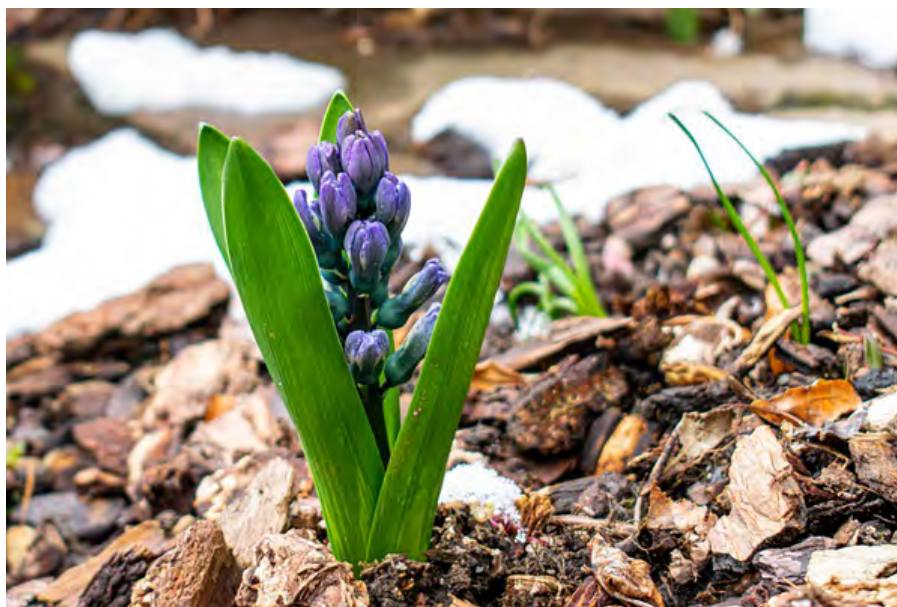
The microbes decomposing untreated wood and bark use nitrogen. Slow-release nitrogen fertilizers are more effective. When required, nitrogen can be added at the rate of one-half pound of actual nitrogen per 10 cubic feet of material.

Remove perennial weeds before laying mulch. In dry weather, water the ground before mulching. Don't lay mulches in spring when it's cool and damp since this can attract slugs.

Most mulches need to be spread a minimum of one to two inches deep. Straw can be laid much thicker while grass clippings should be applied in thin layers to prevent them from becoming slimy and smelly.







Organic farmers spend time amending soil correctly and using mulch - both of which help conserve water.



Mulches provide an insulating barrier between the soil and the air, which moderates the soil temperature. This means mulched soil in the summer will be cooler than bare soil; while in the winter, the mulched soil may not freeze as deeply. Since mulch acts as an insulating layer, mulched soils tend to warm up slower in the spring and cool down slower in the fall.

Cautions

-  Children and pets can get sick from eating dyed mulch, especially coca shells sold as mulch since it smells like chocolate.
-  Some mulches such as pine needles, sawdust, pine bark, etc. can be a fire hazard. Some towns have new rules surrounding the use and how far away it needs to be from wood or homes and buildings. Check your local rules and requirements.
-  Mulch, both bulk and bagged, dyed with color can leech into the garden or the yard. Avoid if you are growing organic or all natural. Look for the Mulch and Soil Council (MSC) Certification Logo if you wish to improve the chances that the dyed mulch that you are buying is safe for humans to handle.
-  For trees, never let the mulch touch the trunk; leave about three inches of space all around. "Mulch volcanoes" can cause disease and basal rot. Keep deep mulch pulled back about six to 12 inches from trunks.





From the farm to the garden, residue or mulch provides many benefits that are worth the time and effort it takes to incorporate the soil coverage into your plans.

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June 2021