Mulch Matters

What is mulch?
Most simply, it is a material used to cover soil. Mulch in ornamental gardens can be compared to the fallen leaves and twigs in native habitats. In horticulture applications, it may be made of plant residues, rock, or synthetic materials.

Why mulch matters
How we use mulch can have significant positive or negative impacts on soil condition and plant health. For most gardens in our region, an annual application of course-textured organic mulch is one of the best things you can do to maintain good soil and healthy plants.

Applied correctly, mulch will protect against soil compaction and erosion, improve water penetration and retention, and suppress weed growth. Weeds are much easier to pull from the well conditioned soil beneath good mulch. Decomposing mulch acts as a slow-release fertilizer while retuning valuable humus to the ground. Coarse organic mulch supports a variety of beneficial insects, worms, and fungi which in turn contribute good conditions for root growth. Using the right kind of mulch for the job and applying it correctly offers multiple benefits, and helps avoid common pitfalls of faulty applications.

Biology matters
While aesthetics is often a first consideration, is should be the lesser of consideration when choosing mulch material. Soil is alive. Use materials that support soil building organisms and soil biological functions for healthier and more aesthetic plantings.

What makes good mulch?
Overall, coarse textured mulch is best. For landscape beds, wood chips, leaf mold, or compost with lots of woody content are good examples. In flower and vegetable gardens, straw is a good option.

Avoid fine bark or shredded bark, alone or in blends. The waxy fibers of bark tend to crust into hard, impenetrable layers that can starve the soil of moisture, air, and biological activity.

Compost and blends with a fine soil-like texture are best used as an amendment that is incorporated or applied as a top dressing less than an inch deep. Crushed rock is more suitable for rock garden and alpine plant types than richer organic materials. Choose a mulch material that matches landscape objectives, soil conditions, plant types, and landscape ecology.

Sheet mulching
While the use of cardboard sheets under mulch has become a popular general practice, its use in established plantings, under trees and on slopes can be problematic. The thickness and waxy components of cardboard can impede moisture and gas exchange for extended periods. Using a few plies of dampened newspaper has the advantage of molding tightly to ground to smother closely mown existing vegetation while typically decomposing more rapidly than cardboard. Stay away
from plastic and synthetic barrier fabrics. They are ineffective at weed control, harmful to soil biology, and hard to remove. Be thoughtful about how and where sheet mulch is used. In many cases, just using the right texture and depth of mulch will be sufficient to meet the desired objectives.

Make your own mulch

Composted leaves (leaf mold) are excellent mulch. Shredded leaves and clean garden trimmings provide an optimal material for a variety of ornamental and naturalized plantings. Leaf mold offers multiple benefits of soil protection, organic matter and nutrient cycling, and, perhaps most important, support for a variety of soil building organisms. Recycling leaves and clean garden debris is a sustainable and cost-effective approach.

Arborist wood chips

Along with leaf mold, this material is a great mimic of forest duff, and ideal for use around trees and in mixed shrub beds. It does not matter what types of trees the chips come from, but they should be free of invasive weeds (like English ivy) and large debris. Depending on the chip size and amount of leafy material, it's helpful to let a fresh pile settle for a week or more before use.

Bagged mulch and bulk products

There are a wide range of products sold, with a variety of names such as mulch, soil builder, and amendment, sometimes with all three terms on one package. There is no regulation for product labeling. Look for material that contains the appropriate texture and mix of materials that matches the intended application.

Fertile mulches

These contain composted chicken and animal manures. They are high in nutrients and may be too rich for most woody plants. Typically fine in texture, they are best applied as a spring top dressing around plantings with higher nutrient needs. Applied too thickly, they tend to either crust over or serve as an excellent seed bed for weeds. Manure based composts are excellent used in a thin layer beneath coarse woody mulch for soil improvement and restoration.

How and how much

Apply 3 - 4 inches of coarse mulch to keep weeds down and moisture in. Mulch that is less than 2-inches deep is too shallow for good weed suppression. For greater weed suppression in open areas between plants, mulch can be up to 6-inches deep. Include the depth of the remaining mulch into the total desired depth when adding new mulch. As a pre-planting and weed suppression treatment over fallow ground, wood chip mulch can be placed as much as 12-inches deep long in advance of planting. At planting time, redistribute excess mulch to achieve the appropriate 4- or 6-inch depths.

Where some soil exposure matters

Never bury the trunks of trees and shrubs in mulch. It is harmful to their health and invites basal rot. Mulch rings around trees should taper to soil level a few inches away from trunks and be thickest toward the outside perimeter. Retain some pockets of exposed soil in appropriate locations as habitat opportunities for ground nesting native bees and other beneficial insects.
When to mulch

Mulch whenever the soil is bare. Mulch right after weeding (as in moments ago). Mulch at planting. Replenish by mid-April for longer moisture retention. If an area tends to be soggy, mulch later in the season. Mulch in the fall to protect bare soil from rain impact and to suppress winter weeds.

The role of mulch in no-till soil management practices

From large-scale agriculture to landscaped settings, there is a growing call from soil scientists to refrain from extensive cultivation and soil disturbance. New research data is emerging about the effectiveness of surface applied amendments and mulches for treating planted and unplanted soils where cultivation and incorporation of amendments are not an option. Digging and cultivation can disrupt and damage soil structure and important soil building organisms (many of which are not visible when soil is turned).

Surface applied organic matter and woody mulch is very effective for maintaining and building productive soil conditions, mimicking the way nature has built soil over much of the planet over the millennia. By focusing on surface applications wherever possible, we have the opportunity to protect and support soil building organisms, which do the work to restore and maintain soil structure as well as playing an important role in root health and function.

References

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