

Mulching Your Trees

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What Is Mulch?

A protective covering of various materials, either organic or inorganic, spread over the soil surface to reduce evaporation of moisture, improve plant growth, discourage weedy species and enhance the appearance of the landscape is known as mulch. Inorganic mulching materials include landscape fabric and plastic film that are primarily used for weed control and retention of soil moisture, while rocks, gravel, brick chips and shredded rubber are used more for decorative purposes. Most inorganic mulches do not decay and thus do not improve soil properties. Grass clippings, straw, pine needles, leaves, peat moss, compost, wood fiber and bark are organic mulches composed of decaying plant materials. Over time, organic mulches will decompose and become part of the soil, adding to the soil's organic matter, improving soil structure and nutrient availability and helping the soil retain moisture. However, as the organic mulches decompose, they must be replenished.

Benefits of Mulch

Mulch has many benefits:

- Moderates the temperature of the root zone.
- Encourages the conservation of moisture in the soil by reducing surface evaporation.
- Helps control weeds.
- Prevents the soil from crusting over, allowing water to penetrate and percolate.
- Improves soil aeration, soil structure (less soil compaction) and drainage.
- Adds organic matter to the soil, improving fertility.
- Restrains soil erosion, especially raindrop erosion.
- Reduces the chance of mechanical injury to trees and shrubs from lawn mowers and weed trimmers.
- Gives the landscape a more pleasing, manicured appearance.

Proper Use of Mulch



Different types of mulches: (a) wood chips, (b) pine bark nuggets, (c) shredded hardwood bark and (d) brick chips.

Mulch should be applied in a ring at least 4 to 6 feet in diameter around the base of the tree. The depth of mulch should be no more than 2 to 4 inches, tapering out to the ground level at the edge of the ring. The farther out from the tree you can make the mulch ring, the greater benefit to the tree. The larger the area that is mulched, the less tree roots must compete with the lawn for water and nutrients. Roots usually extend well beyond the drip line of the tree crown. Do not pile mulch against tree trunks. Pull mulch several inches away from the trunk so that the base of the trunk is exposed and air moves freely.

Improper Use of Mulch

Even with the many benefits of mulch, improper application can have a detrimental effect on trees. Most plants are sensitive to the depth of mulch. More than 4 inches of mulch restricts soil oxygen exchange with the roots.

A common practice in many landscapes is “volcano” mulching – the placing of mulch in a cone around and next to the trunk 8 to 12 inches high and extending horizontally about 2 feet in diameter. This depth of mulch restricts oxygen exchange with the roots, but also creates a moist environment at an elevated position near the base of the stem. This moist environment promotes cracking of the bark, creating an entry point for insects and fungal growth as well as conditions favorable for rodents to chew the bark and damage or girdle the tree.

Use of mulch that has not been properly composted or aged can create problems for many plants. Fresh grass clippings produce heat as they decay that may injure young plants. Other mulches, particularly fresh sawdust or wood wastes, do not contain adequate nitrogen for microorganisms to decompose them. Mulch can also change

the pH of the soil, influencing nutrient availability. Some materials, such as pine needles and oak leaves, are more acid, while grass clippings and hardwood bark are more alkaline. Anaerobic or “sour” mulch in materials that have not been properly composted have pungent odors that build from the production of alcohols and organic acids. These compounds can be harmful to young plants and should be avoided by using composted materials rather than fresh mulch.

Summary

Deciding which mulch is best for you will depend on your purpose, preferences and associated costs. Before choosing mulch, consider how you will use it. Organic mulches are more natural and enhance many soil properties, while inorganic mulches are used more for decorative purposes. Both kinds of mulch conserve soil moisture to some extent and provide some weed control. All mulches have different properties that may be advantageous in some situations and detrimental in others. Make sure that mulch is applied correctly to enhance tree growth and that cured or aged materials are used.

References

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