

Proper Mulching Techniques

Mulching is one of the most beneficial practices a homeowner can use for better tree health.



Mulches are applied to the soil surface to maintain moisture and improve soil conditions. However, if misapplied, mulch may have little, or even negative, impact on trees.

Benefits of Proper Mulching

- Reduces soil moisture loss through evaporation.
- Controls weed germination and growth.
- Insulates soil, protecting roots from extreme summer and winter temperatures.
- Improves soil biology, aeration, structure (aggregation of soil particles), and drainage over time.
- Increases soil fertility as certain mulch types decompose.
- Inhibits certain plant diseases.
- Reduces the likelihood of tree damage from string trimmers and lawn mowers.
- Gives planting beds a uniform, cared-for look.

Trees growing in a natural forest environment have their roots anchored in a rich, well aerated soil full of essential nutrients and soil microorganisms. The soil is blanketed by fallen leaves and other organic materials that organisms break down to release nutrients into the soil. This environment is optimal for root growth and mineral uptake.

Urban landscapes and new developments, however, are typically harsher environments with poor-quality soil, reduced organic matter, and large fluctuations in soil temperature and moisture. Many benefits of the natural environment can be replicated, while maintaining a formal appearance, with the application of an organic mulch.



Types of Mulch

Organic Mulch

- Examples include wood chips, pine needles, hardwood and softwood bark, cocoa hulls, leaves, compost mixes, and a variety of other products usually derived from plants.
- Decomposes in the landscape at different rates depending on the material, climate, and soil microorganisms present.
- Requires more replenishing depending on how fast it decomposes.

Inorganic Mulch

- Examples include various types of stone, lava rock, shredded rubber, and other materials.
- Does not decompose or need to be replenished often.
- Does not improve soil structure or provide nutrients.

Not Too Much!

Too much mulch can be harmful. The recommended mulching depth is 2–4 inches (5–10 cm). Unfortunately, many landscapes are falling victim to a plague of over mulching.

“Mulch volcanoes” are excessive piles of mulch materials applied around the base of trees.

While organic mulches must be replenished over time, buildup can occur if reapplication outpaces decomposition or if new material is added simply to refresh color.

Deep mulch can be effective in suppressing weeds and reducing maintenance, but it often causes additional problems.

Problems Associated with Improper Mulching

- Applying mulch against the trunk or stems of plants can soften the tissues, making them more susceptible to the development of insects and diseases (see figure top right).
- Mulch against the trunk can also lead to the growth of stem girdling roots. This type of root growth can reduce tree growth or eventually kill the tree.
- Thick blankets of fine mulch can become matted and may reduce the penetration of water and air.
- On wet soils, applying more than 2 inches (5 cm) of organic mulch can reduce soil drying, which can lead to excess moisture in the root zone, which can stress the plant and cause root rot. In these cases, it may be best to leave bare ground exposed or to use a thin layer of inorganic mulch.
- Some mulches, especially those containing fresh grass clippings, can affect soil pH and may eventually lead to nutrient deficiencies or toxic buildups. Anaerobic “sour” mulch may give off pungent odors, and the alcohols and organic acids that build up may be toxic to young plants.

Guidelines for Applying Mulch

The choice of mulch and the application techniques are important to the health of landscape plants. The following are guidelines for applying mulch:

- For well-drained sites, apply a 2–4 inch (5–10 cm) layer of mulch. Fine mulches, such as composed materials, should be applied in a 2–3 inch layer and coarse mulches, such as arborist wood chips, should be applied in a 3–4 inch layer.
- Apply mulch near, but not touching, the trunk and extend to the drip line, if practical. If it is not practical to apply mulch to the drip line, apply as far out as you can. Generally, a 3 foot (1 meter) radius ring is the minimum for most trees.
- If the species you are mulching has symptoms related to a pH problem, select a mulch that can aid in correcting.
- If mulch is already present, check the depth. If sufficient mulch is present, break up any matted layers and refresh the appearance with a rake. Some landscape maintenance companies spray mulch with a water-soluble, vegetable-based dye to add color to faded material.
- If mulch is piled against the stems or tree trunks, pull it back several inches/centimeters so that the base of the trunk is exposed (see figure top right).
- Fresh arborist wood chips, especially those that contain bark and leaves, are an excellent material to apply around trees and large shrubs.



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