



Proper Mulching Techniques & Problems Caused by Over-Mulching

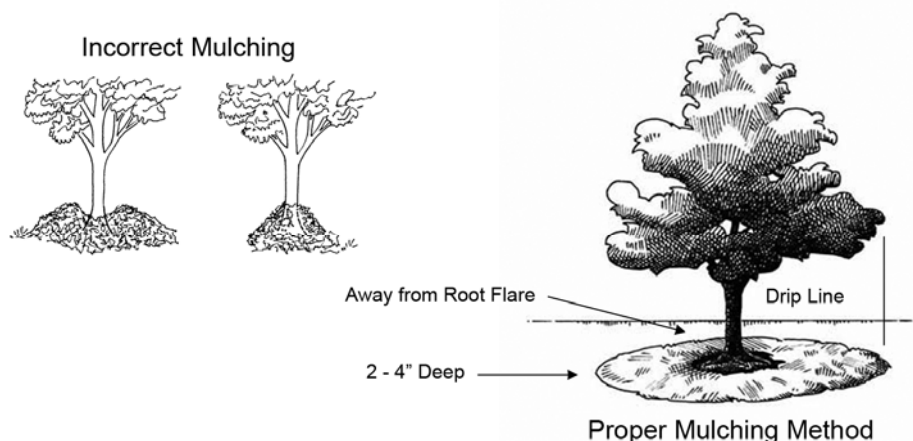
Benefits of Proper Mulching

Good tree maintenance is common sense - it is what trees need to flourish in nature. In the wild, the forest floor is naturally covered with a layer of decomposing leaves, twigs and other plant material. The most common mulch is made of wood chips or bark, as a renewable resource, wood mulch is inexpensive and readily available. Mulch:

- Impedes growth of weeds and grass that compete with tree roots.
- Conserves soil moisture by slowing down the evaporation process and helping to retain more water for root use for longer periods of time.
- Protects the trunk from mower/ weed whacker damage by eliminating the need to mow or trim immediately around the trunk.
- Reduces soil compaction by reducing foot and vehicle traffic allowing roots to breathe.
- Moderates soil temperature keeping the roots cool in the summer and warm in the winter.
- Improves soil fertility as it decomposes.
- Prevents erosion.

Proper Mulching Method

- **No higher than 2-4 inches.** If using finely textured or double shredded mulch, use 1-2 inches because these materials allow less oxygen to the root zone.
- **Not against the trunk** - keep all mulch 3-4 inches away from the trunk of the tree or shrub, allowing the root flare zone to show just above ground level.
- **To the tree's drip line** if possible. Remember that the drip line moves out as the tree grows.
- **Other Tips:** If a "fresh" look is desired each season, take some of the old mulch away before adding a new layer to reach the 2-4" depth. Applying new material over old in successive years is the same as applying a too deep layer all at once!



Remember: Keep the bark dry and the roots moist.

Problems Associated With Over-Mulching

Incorrect mulching is quickly becoming the **number one cause of death** of trees and shrubs. Over-mulching, with mulch piled high, directly against the stems or trunks, smothering the root flare zone; or with very deep mulch covering part or all of the root area causes:

Root Suffocation/ Root Rot - Repeated or deep applications of mulch cause waterlogged soil by slowing water loss through evaporation. Roots must "breathe", taking in oxygen. When oxygen levels drop, root growth declines then the plant dies.

Inner Bark Death - The living tissue (phloem) just inside the outer bark must be able to freely exchange oxygen and carbon dioxide. Mulch piled high onto the trunk decreases gas exchange, killing the inner bark and then the roots which can no longer receive food from the leaves.

Rodent/ Insect Chewing - Deep layers of mulch against the trunk provide a perfect habitat for these pests. If chewing is extensive or "girdles" the entire tree, the tree cannot be saved.

Fungal and Bacterial Diseases - These can grow and reproduce in the thick, moist mulch next to the trunk, gaining entry into the stressed, decaying bark. Once established, cankers caused by these diseases, can encircle the tree, killing the inner bark, starving the roots and killing the plant.

Excessive Heat - Thick layers of mulch begin to decay and can produce heat (similar to composting).

Waterproof Layers - Thick layers of certain mulches can create impervious surfaces that do not allow water to reach to roots, especially during drought. Roots dehydrate and die, killing the tree.

Summer Mulching Tip

In times of extreme heat, it is recommended that you **Water Mulch After Application**. The combination of composting heat and air temperature can damage plant material.

Symptoms of Decline

Death from over-mulching is gradual, with symptoms sometimes taking 3-5 years to express themselves. It starts with the decline of plant vigor and rate of growth.

- Off-color leaves (pale or marbled)
- Abnormally small leaves
- Poor twig growth
- Die-back of older branches
- Rotting, peeling trunk bark under the mulch.

What to Do?

The best way to determine if you have a mulch problem is simply to dig through the mulch layer to see how thick it really is. If it is excessive (over 4 inches), spread it out to the drip line or remove much of it. Sometimes a light raking of existing mulch is sufficient to break up any crusted or compacted layers that repel water.

A visual inspection of the root flare zone or trunk collar (where the spreading base of the tree just goes into the soil) is the best way for you or an arborist to check the condition of the trunk for possible rot, pest chewing or diseases. If detected early on, removal of mulch to allow drying out may help curb more serious problems.

Complete root flare zone excavation may be necessary and is best performed by a professional arborist.