

## Fresh Woodchip Mulch

E. Thomas Smiley, PhD, Urban Forestry

Applying mulch is one of the best arboricultural practices available to improve tree and shrub health. Mulches provide many benefits including moderating soil temperatures, reducing soil moisture loss, reducing soil compaction, providing nutrients, reducing weed competition and improving soil structure. These soil factors result in more efficient root growth and healthier plants. Mulch also keeps mowers and string trimmers away from the trunk, preventing one of the most common forms of mechanical damage to young trees.

There are many materials that are used for mulching trees and shrubs. One of the most economical is fresh woodchip mulch produced by tree pruning and removal operations.

Fresh woodchips are a mixture of wood, bark and leaves. This mixture is very desirable because of its carbon:nitrogen (C:N) ratio, which is lower than pure wood-based mulches. Research data confirms no nitrogen tie-up occurs when this type of mulch is applied to the soil surface.

Fresh woodchip mulch should be applied from near the base of the tree to near the dripline (width of tree canopy). If space is limited, the width of the mulch bed should be as large as possible. Near the trunk, the

mulch should taper down to a very thin layer (Figure 1). Mulch should never contact the trunk directly.

**Figure 2: Mulch layer should be applied from near the trunk to the dripline of the tree in a 2-4 inches thick layer, never against the trunk**



**Figure 1: Proper mulching to the dripline of the tree is demonstrated**



The optimum depth of fresh woodchip mulch is 2 to 4 inches (5-10 cm) (Figure 2). This thickness will greatly reduce the growth of weeds and will not allow the buildup of heat from leaf decomposition.

Turf does not need to be killed or removed before mulch is applied. A 2-4 inch layer of mulch will quickly kill any turf grass. Weed barrier fabric is **not** needed to prevent weeds from growing up through a proper layer of woodchip mulch. Fabric barriers interfere with the breakdown of mulch, can girdle tree trunks, and may affect water movement into the soil. For these reasons, fabric is not recommended to be used with fresh woodchip mulch.

Weed seeds that germinate on top of mulch can easily be pulled out or they can be treated with a foliar-absorbed herbicide.

In most cases, fresh woodchip mulches can be used without composting or additional treatment. However, there are exceptions to this:

Trees susceptible to insects that are attracted to fresh wounds should not be mulched with fresh chips from the same species. Examples include pine in pine bark beetle infested areas, oaks in oak wilt areas, and elm in Dutch elm disease areas when the beetles are active. The volatile compounds of fresh woodchip mulch usually dissipate within weeks of placement.

Mulch from trees that produce allelopathic chemicals (natural herbicides) such as black walnut and redwood (Sequoia) should not be applied fresh.

Mulches containing wood from *Verticillium*-infected trees should not be applied fresh. Although transmission is highly unlikely, this disease is one of the few shown to be transmitted from fresh woodchip mulch to healthy, susceptible trees.

Many fungi grow in mulch derived from hardwood trees. Most of these fungi are beneficial to the soil. There are a few that homeowners do not appreciate. These include the stinkhorn fungi, various mushroom forming fungi, slime mold fungi (the “dog barf” fungus) and the artillery fungi that shoot small, black, sticky spores toward light surfaces. When growth of any of these fungi is noticed, the mulch surface can be raked to break them up and mix them in with the rest of the mulch.

Irrigation practices may need to be adjusted after any type of mulch is applied. Mulch slows water infiltration into soil. This is beneficial in that soil below mulch will dry more slowly. On the other hand, initially, overhead irrigation may need to be run for a longer period of time to encourage water movement into the soil. In wet soils, irrigation can often be reduced or eliminated because mulch reduces water loss from the soil.



**Founded in 1926, The Bartlett Tree Research Laboratories is the research wing of Bartlett Tree Experts. Scientists here develop guidelines for all of the Company’s services. The Lab also houses a state-of-the-art plant diagnostic clinic and provides vital technical support to Bartlett arborists and field staff for the benefit of our clients.**