

# Over-Mulching A National Plague



Excessive layers of mulch will eventually harm or kill shallow-rooted ornamentals.

Heavy, repeated applications of mulch around shallow-rooted plants can suffocate their roots.

Francis R. Gouin, Ph.D.

**O**ver-mulching of trees and shrubs can best be described as a plague that is slowly and methodically annihilating ornamental trees and shrubs in established landscapes. Over-mulching is a serious problem responsible for the decline and death of many shallow rooted shrubs and large coniferous specimen trees.

Nurserymen and landscape contractors have long been aware of the importance of not placing excessive amounts of soil over the roots of established trees for fear of

suffocating them. However, they fail to understand that excessive use of mulch around shallow rooted plants can have the same detrimental effect.

Heavy and repeated applications of mulch around shallow rooted established species such as azaleas, rhododendrons, mountain laurel, leucothoe, andromeda,

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boxwoods, hollies, yews, and camelias can suffocate their roots. If the species has the ability to root readily, the plants will often initiate new roots from the stems into the mulch layer, but produce little top growth.

Shallow rooted plants growing on sandy well aerated soils can tolerate more mulching than plants growing on heavy clay or silt loam soils.

Death to plants from over-mulching is slow and agonizing for the owner. There is generally a gradual decline in the vigor of the plants affected. The annual rate of growth becomes less each year, the leaves do not grow to mature size and symptoms of iron chlorosis begin to appear.

These symptoms generally begin to appear within 2 to 4 years after routine annual mulching begins. Approximately a year before the plant dies, the spring growth exhibits a severe iron chlorosis with considerable die-back of branches. The plants generally show little response to foliar applications of chelated iron or fertilizers.

By the time the plants reach this last stage of decline there is little chance for recovery and the plants become susceptible to attack by insects and diseases.

In Maryland, many cases of boxwood decline have been attributed to over-mulching. Simply removing the mulch from around the plants exhibiting early symptoms of decline has resulted in total recovery.

During the winters of 1976-77 and 1981-82 many over-mulched boxwoods and Japanese hollies were killed. Because these species root readily, all of their roots were in the mulch layer while the original root systems in the soil were dead from suffocation and rotting. With little to no snow on the ground to insulate, temperature in the abnormally dry mulch dropped to below root killing temperatures for these species resulting in severe root injury. Similar plants growing in the same vicinity, but without mulch or only lightly mulched survived without difficulty.

Many pine, spruce and fir trees

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are killed because mulch is piled high around the stems. These species are highly susceptible to stem rot diseases causing organisms that thrive in the cool moist environment of the heavy mulch layer. Most species of spruce appear to be especially susceptible to injury from mulch piled around their stems.

Although it is profitable to apply mulch annually to landscape plantings, it is detrimental. Many irreplaceable trees and shrubs in landscapes are being killed be-

Mulches should not be used exclusively to control weeds.

cause organic mulches are being over-used. One to two inches of mulch is adequate to keep the soil cool, reduce water lost by evaporation, give the landscape a neat appearance and to allow easy penetration of water into the soil.

Shallow raking the existing mulch will give the landscape planting that freshly mulched appearance. Fresh mulch should not be applied until the existing mulch is nearly all decomposed and lightly incorporated into the upper layer of soil.

Mulches should not be used exclusively to control weeds. As organic mulches decompose they enrich the soil making conditions favorable for weed seeds to germinate and for roots of perennial weeds to become established.

Weeds in landscape plantings should be controlled mechanically by hand weeding or with pre- and/or post-emergent herbicides. There are a number of herbicides on the market that can be used safely around a wide variety of ornamentals. Directed spray applications of post-emergent herbicides can be used to kill existing weeds while the pre-emergent herbicides will control germinating weed seeds.

Yearly applications and heavy applications of organic mulches to control weeds should be discouraged.

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