

## **Mulch Volcanoes—Compromising Tree Health**

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You've seen this before—mulch piled so high around a tree that it resembles a volcano with a stick coming out of the center. So goes the plight of trees trying to survive under such conditions. Despite the research indicating how bad this is for trees, we see it time and again.

Exactly how do mulch volcanoes compromise tree health? There are two compelling reasons. First, tree roots need oxygen to survive. In most soils, oxygen is found in the top 18 inches or so of the soil. It's no accident, then, that roots readily exist, thrive and grow in the top 18 inches of soil. When mulch is heaped around trees, this puts the lowest tree roots out of the range of oxygen penetration. Under these conditions, roots begin to die back, slowing tree growth and potentially causing tree death.

The second reason mulch volcanoes are a bad thing has to do with the tree trunk itself. To explain this, a better understanding of plant function is necessary. Tree trunks over the millennia have evolved to be in sunlight and wind. This conditioning has made bark thick and tree trunks strong to withstand some pretty fierce winds. Now take that same trunk, heap mulch around the stem and watch how the highly competitive environment of constant moisture, no air circulation and abundant natural microorganisms decay the bark of the tree and the conductive tissues beneath. When this happens, the tree is a candidate for breakage at the mulch line.

The best way to mulch trees is with a 2-3 inch layer of wood chips or shredded bark and no landscaping fabric beneath. At a minimum, the circle of mulch should extend outward at least 3 feet away from the tree trunk. If you can stand to give up more lawn, a mulch ring extending further will have an even greater benefit to the tree. Under no circumstances should mulch be piled against the trunk itself. As mulch decomposes, more mulch can be added to maintain a 2-3 inch depth.

Mother Nature mulches correctly. On the forest floor, this accumulation of leaves and bits of twigs is called duff. Duff benefits trees because, as it decomposes, it provides nutrients to trees and adds humus to the soil, making for a better environment for tree roots. When we mulch trees, we're replicating what nature does so well naturally.

More information about tree mulching can be found on the Nebraska Forest Service website: <https://nfs.unl.edu/publications/tree-planting#pub-section-82> .



A Mulch Volcano;

Way Bad



Proper Mulching; photo

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