Problems Erupt When You Volcano-Mulch

Photo by David W. Marshall, UF-IFAS Leon County Extension: Mulch volcanoes can harm plants.

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You’ve probably seen it, so much mulch piled against trunks of trees that they resemble miniature volcanoes. Volcano-mulching, or mulch applied too deep around the trunk of a plant, does more harm than good.

Mulching correctly is good and provides many benefits to plants. It keeps roots evenly moist and acts to insulate roots from extreme heat and cold. Fresh mulch inhibits weed germination and growth. As organic mulches such as leaves or pine straw break down, they improve the soil’s fertility, aeration, structure, and drainage.

But, according to researchers at the University of Georgia, mulch volcanoes can be deadly to newly planted trees and shrubs. First, mulch volcanoes encourage roots to grow in the wrong direction. At first, the top of the volcano is moist and attractive to roots while the waterlogged soil under the volcano suffocates deep roots. As a result, the roots grow up, rather than down.

In the long run, mulch can't hold nearly as much water as the soil. So when the mulch volcano dries out, the plants can be severely stressed.

Secondly, the volcano shape acts as an umbrella, shedding water to the surrounding area. Water runs off the mulch, rather than moving into it. This is more common in high-carbon mulches like ground wood, wood chips, or sawdust.
Newly planted trees and shrubs are still like container plants. Their root ball is small and relatively confined. If the volcano-umbrella keeps the root ball dry, the plant will struggle and may not survive.

Thirdly, with mature trees, mulch volcanoes can keep roots from getting enough oxygen, resulting in root death and decay. They trap moisture around the lower trunk, promoting rot. They also invite damage from rodents that chew the bark and can girdle the tree.

The key to proper mulching is to copy how trees are mulched in the woods. The natural mulch of fallen leaves is flat and rarely more than two to three inches thick. It never looks like a volcano. A deeper layer of mulch can restrict gas exchange in the soil and may keep the soil too wet during rainy periods.

A mulch layer three inches deep after settling is enough for most plants. If possible, extend the mulched areas out to the outermost leaves (called the drip line) and beyond. And be sure to pull the mulch back a few inches from the main trunk to provide an air space there.

Mulching is very beneficial. But there's a right way to do it - making mulch volcanoes isn't it.

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