



Mulch Volcanoes Are Erupting Everywhere!

Extension educators, arborists, and other knowledgeable horticulturists have railed against the prevalence of mulch volcanoes for decades. So why do we still see so much mulch piled around the trunks of trees?

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When trees look like telephone poles, they are either planted too deeply or mulched too deeply. Either way, it is not good for the tree! Photo: Sandy Feather, Penn State

Properly applied organic mulches are very beneficial for trees. Preferably two-to-three inches deep, not physically touching the trunk, and extending out to the drip line. They help conserve soil moisture, which reduces the need for frequent irrigation. Organic mulches also help moderate soil temperature, protecting fragile feeder roots from temperature extremes. They help keep weeds down, at least until mowing blows weed seeds into the mulch where they happily germinate. Organic mulches also add organic matter to the soil as they break down, improving soil structure, porosity, and nutrient-holding capacity. And all types of mulch protect vulnerable trunks from weed whacker and mower damage.

However, trouble starts when the mulch is applied more heavily and in constant contact with a larger section of the tree's trunk. When wet, the mulch holds too much moisture against the bark, which can cause it to start to break down. And as the mulch starts to compost, it heats up, which can further damage the bark and the underlying vascular tissues, compromising the tree's ability to transport water and nutrients.





This little *Cornus florida* was literally mulched to death. The dogwood borer arrived to put it out of its misery. Photo: Sandy Feather, Penn State

Too much mulch also blocks the roots from getting sufficient oxygen, and if the underlying soil remains too wet for too long a time, the roots begin to rot. It can also cause the tree to develop adventitious roots – those growing from trunk tissue, rather than true root tissue. As they grow in diameter, they can develop into girdling roots, which further restricts the tree's ability to transport water.



You can see where the tree rooted into the mulch, creating potential girdling roots. Photo: Sandy Feather, Penn State

Finally, when we get into hot, dry summer weather and the mulch completely dries out, it becomes hydrophobic and actually repels water. Trees mulched in such a way cannot benefit from rain as properly mulched trees do.





This red maple spent a lot of time with a volcano of mulch around it. Some kind soul recognized the issue and removed the excessive mulch, leaving the tree to look as though it is standing on a pedestal. Photo: Sandy Feather, Penn State

Given the problems associated with volcano mulching, why is it so common? One reason may be that clients dislike the tired look of existing mulch after a long winter. So landscape companies refresh the mulch without regard to the depth of the existing mulch. A better practice is to rake out the existing mulch and place a very thin skim layer of fresh mulch over it.

Another reason may be that time is money. It is faster to dump a wheelbarrow full of mulch around a tree than to place it more carefully. You can sometimes see the results when mulch is deeper on one side of the tree than the other. While acknowledging that the tasks done by landscape crews have to be done efficiently to keep a company profitable, surely the small amount of extra time required to make sure that mulch is properly applied should not break the bank.

Another issue is the monkey-see, monkey-do effect. When homeowners see landscape professionals engage in volcano mulching, they conclude that volcano mulching is the appropriate way to mulch their property.