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Proper Mulching Of Trees: Just Say No To Volcanoes

Organic mulches are a fantastic way to promote the health and longevity of trees. Organic mulches are made up of formerly living things or materials that came from something living, such as wood chips, bark, lawn clippings, fallen leaves, animal bedding and manure, straw, compost, and more. They preserve soil moisture, decompose over time to provide nutrients and increase soil organic matter, prevent lawn mower and string trimmer injury, and reduce resource competition from other plants, including our lawns. Any one of these positives would be a good reason to use mulches, but the fact that the package of benefits is so beneficial means we should make it a priority. However, be advised that improper mulching can lead to injury, decline, and even the death of a tree.

Excessive mulch depth and mulch volcanoes are the two most frequent concerns with mulching. An ideal depth for organic mulches is 3-4" deep. Deeper than that, and there is a risk of reduced air infiltration into the soil, which is needed for a healthy root system and microbial community. One consequence of reduced soil oxygen is that roots begin growing into the mulch and at the soil surface where more oxygen is present but

where there are fewer resources to gather. These shallow root systems make trees more susceptible to drought and less likely to satisfy their nutritional needs which can lead to the decline of the tree and greater susceptibility to insect and disease pests.

Mulch volcanoes are another common mistake that can lead to tree decline. This occurs when mulch is heaped up against the trunk of the tree, resulting in a cone or mound of mulch burying the trunk. **Mulch should never be in direct contact with the trunk of the tree.** A constantly wet bark allows disease and insects a more successful point of attack. An additional negative from mulch volcanoes is the formation of girdling roots. The limited volume of the mulch volcano results in roots growing in a circular pattern. As the roots grow in size, they encircle and compress the trunk eventually interrupting the flow of nutrients and water from the roots and sugars from the leaves.



Not all girdling roots are visible on the surface as these are.

Image from [Rebekah D. Wallace, University of Georgia, bugwood.org](https://www.bugwood.org)

Girdling roots lead to canopy dieback and the eventual death of the tree.

To use mulch effectively and safely make certain that no mulch is in contact with the bark of the trunk or root flare and limit depth at application to 4". The mulch can settle soon after application but as long as 4" is applied initially the volume and depth will be sufficient to the positive benefits. **Never add additional mulch on a scheduled basis**, measure the depth and if below 3" apply only enough to reach 4" total depth.

Check out this publication, [Proper Mulching Techniques](#), from the International Society of Arboriculture.



Top: Mulch volcanoes, very bad for tree health; Bottom: Excellent mulching! Pics From [Dodge County](#)

The Trusty Trowel-May 2023

Blossom End Rot Of Tomatoes

As we approach tomato planting season in our gardens, it's important to be aware of a common issue that can arise: blossom end rot. Despite its name, this problem is not a disease, but rather a calcium deficiency in the fruit. It can affect not only tomatoes, but also peppers, watermelons, and summer squash.



Calcium is essential for the structure of a plant's cells, and when there is a deficiency, the layers of cells can collapse. Blossom end rot typically starts as a light-colored area on the blossom end of the fruit, where the fruit is actively growing and expanding. The affected area can enlarge and darken, sometimes covering up to half of the fruit surface. Eventually, the tissue becomes blackened, sunken, and leathery.

To address this issue, it's important to determine whether the deficiency is in the soil or the plant's ability to absorb calcium. In most cases, there is plenty of calcium in the soil, but the fruit is not receiving enough of it. Calcium is delivered to plants as calcium ions in water, so uneven soil moisture can be a contributing factor. Alternating wet and dry periods can reduce the delivery of water to the fruit, leading to a deficiency of calcium when growth resumes.

To prevent or alleviate blossom end rot, it's best to create even soil moisture conditions by increasing the frequency and duration of irrigation events. Plants should be irrigated as frequently as needed, but it's better to water deeply and infrequently rather than shallow, frequent watering.

If you're looking to determine whether or not you're watering your plants deeply enough, don't waste your money on a moisture meter. Instead, dig down six inches into the soil to see if the irrigation is reaching that depth. If it's not, you need to increase the duration of the irrigation to ensure that water is being applied more deeply. The same strategy is effective if you're worried that you may be overwatering your plants.



It's important to note that adding calcium to the soil won't necessarily solve the problem of calcium delivery to the fruit. There are numerous strategies available online to add calcium to the soil but remember the issue is the availability of water to carry the calcium to the fruit, rather than the amount of calcium in the soil. Adding things like antacids or egg shells won't immediately make calcium more available to the plant and aren't addressing the cause of the deficiency. Instead, focus on managing soil water properly.

As your plants mature and temperatures rise, their water usage will increase. Be prepared to increase the volume of water you apply as the season progresses. It's best to apply irrigation at the soil level rather than on the foliage of the plants. Drip irrigation and soaker hoses can make watering your garden faster and more efficient.

Using organic mulch is also recommended in the vegetable garden as a strategy to reduce blossom end rot. Organic mulches help preserve soil moisture by lowering soil temperature and thus can help make water more available to the plant. The added benefits from organic mulches are the suppression of weeds and adding nutrients as they decompose. Additionally, mulches can prevent soil from splashing onto lower leaves, which can reduce some soil-borne disease infections.

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Tasks for May

- Keep on the regular control sprays for fruit crops. Even though spring freezes may have reduced or removed the fruit crop there is still value in maintaining a minimal program to prevent building pest populations that would be problematic next year. For peaches it is especially important to continue insecticide sprays targeting peachtree borers.
- Prepare for early season fertilization on small fruits; blueberries and blackberries are often fertilized about a month after bud break.
- Prepare beds for transplants. Black plastic can warm the soil and speed early growth. Provide irrigation if using plastic mulch. Sometimes natural mulches, such as straw, are applied a few weeks after planting as they can reflect light and actually slow soil warming.
- Continue transplanting warm-season crops. Peppers and eggplants prefer even warmer soil conditions than tomatoes and are often planted later. Make sure that young transplants are watered in and given a starter fertilizer solution to support early growth.
- Set up your irrigation system as transplants are placed in the garden. Drip irrigation is best to maintain dry leaves and reduce disease risks.
- Set up stakes, trellises, cages and support systems for your plants. It is best to have these set up at or soon after planting.
- Don't let weeds get started in the garden. [See UT Extension Publication W 346-D Plant Management Practices.](#)

Canning classes Coming this Summer!

Interested in hands on canning classes? Please fill out tiny.utk.edu/CanningInterest2023 to be informed of upcoming dates

For questions about your home and garden please feel free to contact me, Adam Watson, Agriculture Extension Agent watson@utk.edu or by cell 423-430-6711. Emailing or texting pictures is a great way to get questions to me.

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