

How To Stop Mulch From Stealing Nitrogen From Your Plants

Leimone Waite, Master Gardener, March 9, 2018

Q. I talked a tree trimming service in to dumping a load of wood chips in my yard to use as mulch. I have been spreading it all around my yard to help conserve water and to keep weeds from growing. My neighbor tells me that using these fresh wood chips will rob my soil of nitrogen and cause my plants to suffer. Is it true that using freshly chipped wood chips as mulch can rob the soil beneath of nutrients, causing harm to the plants you are mulching?

A. The nitrogen is not really “robbed” from the soil, it is just temporarily tied-up in the bodies of the soil bacteria as their populations surge while they are working to break down the wood chips.

These bacteria need nitrogen to survive and do the decomposition work on the low-in-nitrogen wood chips. Once the chips are decomposed the nitrogen is released back into the soil as these bacteria die off.



(Photo: Jackie Malloy)

This tie-up of nutrients in the soil only happens if the wood chips are incorporated into the soil. If the wood chips or other fresh plant materials are mixed into the soil then soil microorganisms may “rob” nutrients from the roots of your plants temporarily to break down the raw materials. But once these plant materials are decomposed, the nitrogen would be released back into the soil, sometimes in much higher amounts than before the process started.

If a lot of fresh plant material is mixed into a garden bed and the bed is planted right away, plants will struggle from a lack of nitrogen early in the season and then burn from too much nitrogen later in the season as the decomposition process comes to an end.

If the mulch is just placed on the soil surface, established perennials, shrubs or trees have root systems deep enough and well enough established not to be affected by the little bit

of nitrogen that may be tied up on the soil surface where the wood chips have come into contact with the soil.

If your plants do look like they may be suffering from a lack of nitrogen, you can always add some fertilizer to help counteract the tie-up of nitrogen.

Another way to minimize any effect the wood chips might have on the soil nitrogen levels is to place some type of barrier between the soil and the wood chips such as landscape cloth. However, this will also decrease some of the benefits provided to the soil over time as the wood chips decompose.

The benefits of mulch far out-weigh any minor tie-up of nutrients in your landscape. Mulch is important for suppressing weeds in the landscape and garden and can greatly improve soil moisture retention — especially in our blazing hot summers. Use as much as you can — up to 4 inches deep. Just

make sure to not mulch right up to the trunk of trees or shrubs so as not to cause conditions where fungal diseases will start to grow on the base of the trunk.

The Shasta Master Gardeners Program can be reached by phone at 242-2219 or email mastergardener@shastacollege.edu. The gardener office is staffed by volunteers trained by the University of California to answer gardeners' questions using information based on scientific research.