

## Good Versus Bad Mulching

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I was recently asked how to control weeds in a flower bed that were growing through landscape fabric put in place to control weeds. Weeds were now entangled in the fabric and could not be hoed or pulled out.

This is one of the disadvantages of using landscape fabric. While it initially stops weeds, dirt eventually settles into holes and weed seeds germinate and grow. Some weeds, like yellow nutsedge, grow up through landscape fabric. The roots become entangled in the fabric and cannot be pulled out.

It's also been shown soils become abnormally dry beneath landscape fabric; and soil organic matter decreases over time since none is returned to soil. This, along with a dry soil, causes beneficial animals, like earthworms, and microorganisms to decrease. Soil is the foundation of healthy plant growth and this result is not a good for soil or plants.

The use of landscape fabric with rocks on top is a common practice. I describe this as people focused mulching rather than plant focused mulching. While I understand the allure of rocks as a mulch that does not need frequent replacement, the disadvantages described above do not make for the best growing environment for plants.

Air temperature near plants growing in rocks is also higher leading to plant stress. Leaves can scorch causing their edges to turn brown because leaves lose moisture faster than roots replace it. Even if a plant appears fine, plants slow photosynthesis when temperatures are above 90 degrees Fahrenheit while respiration, the use of photosynthates for plant processes, increases. Again, leading to plant stress.

Rubber mulch is available for use in landscapes. Air temperatures are even hotter around rubber mulch; and there are concerns of human toxicity due to handling rubber mulch. Of all mulches tested for being a fire hazard, crumb rubber mulch was most flammable and difficult to extinguish. The use of rubber mulch as a landscape mulch is not recommended.

Plant focused mulch is organic mulch placed on top bare soil and not on top of landscape fabric. They are most effective at providing mulch benefits but do not increase air temperature around plants. As they decompose, they add organic matter to soil to promote root growth and beneficial soil animals and microorganisms. They are less expensive and sometimes free.

The best organic mulch is coarse mulch like wood chips and shredded hardwood, bark wood chips, corn cob and soybean mulch, and pine straw. While grass clippings, sawdust, and leaves can be used as mulch, these finer textured mulches mat down and repel water and limit oxygen recharge of soil. Coarse mulches are applied 3 to 4 inches deep. Fine mulches should only be 1 to 2 inches deep.

Organic mulch does decompose and needs to be replenished. While this seems like a disadvantage, this is how soil organic matter and beneficial organisms increase. It may be a slight inconvenience for homeowners but is beneficial to plant growth and soil health.

There are other concerns with organic mulch researchers have proven to be a misconception or very unlikely to occur. These misconceptions include attracting termites, spreading diseases to healthy trees by mulch from a diseased tree, negatively affecting soil pH and stealing nitrogen from plants

It is up to homeowners to decide which mulch they prefer, but be aware of the pros and cons. In most cases, use only a 3 to 4-inch deep layer of mulch and do not allow mulch or landscape fabric to touch the stems of plants, including trees. Landscape fabrics and rocks have damaged or girdled trees.

For more information, refer to our Nebraska Extension publication "Mulching the Landscape" found at <https://extensionpubs.unl.edu/publication/166>