



Urban Harvest

Quality Mulch Enriches Soil

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Gardening in southeast Texas has many intricacies, oddities and details, but there is one practice that is uncomplicated, easy to do and tremendously valuable. We all need to mulch.

Mulch vegetable and flower beds, and around shrubs and trees with 2-3 inches of high quality, biologically active mulch. You can do this in any month, but if you do it now, you particularly will help all those plants tolerate the area's long, hot summer.

Mulch and compost are the result of microbes making organic materials rot. Compost is a general term, and can be used as mulch. In the garden it usually is incorporated into the soil. The term "mulch" refers to where the material is placed.

Mulches are put on the surface for many purposes. A common one is to reduce evaporation and weeding, and in the South, to keep plant roots cool and damp. Mulches can be made out of rock, cardboard and newspaper, plastic and rubber.

But mulches that aren't from organic decomposition do not convey the many benefits mulch can provide. Quality mulch provides calories that feed soil fungi and bacteria. These microbes make nitrogen in the mulch and air part of their cells, so nitrogen stays near plant roots. These microbes in turn provide food for bacteria and fungi-eating nematodes and other microbes. The result is a soil rich in "microbe manure" "microbe blood meal" and "microbe bone meal."



Plants can be mulched in any month; doing it before summer temperatures hit will help those plants tolerate the area's long, hot summer.

There are other positive results. A large number of harmful fungi, bacteria and nematodes are removed from the soil. Tight soils with an active decomposer food web gradually develop a spongy high-quality tilth. Such soils have a higher oxygen content, roots have an easier time growing and water stays available to plant roots much longer.



Mulch with a material soil organisms prefer. If you need yards of mulch and have a small property, you probably need to buy it.

All of this assumes you are mulching with a material that soil organisms prefer. You can get quality mulch by making it, but if you need yards of it and have a small property, you probably need to buy it. Many products contain substances that are harmful to beneficial soil microbes, or at the least used by them (see www.natureswayresources.com/compostusage.html). Try to find products made from mixed, shredded tree branches that have been composted six months or more. One good sign is some places are posting their soil food web test results (www.natureswayresources.com/results.html). In bags, such products will have air holes, and when delivered by truck will almost be among the most expensive mulches you can buy. On the other hand, at 2 inches per square foot every two years, considering what they do for your plants and water bill, and what food costs these days, they may be the cheapest product out there.

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These changes are, at this point, a solid part of the scientific literature, but the precise mechanisms still are somewhat speculative. What is known is soil bacteria, and the actinobacteria, decompose plant material into humic acids, and these tend to bind mineral particles together. Earthworms and other microbes make air tunnels in the soil and create worm castings in larger pellets. The increase in tilth makes the soil more aerobic, and fungi proliferate. They bind these pellets together, and beneficial mycorrhizal fungi use these passageways to increase mineral uptake by plant roots.