The Miracle of Microflora

Photo by David W. Marshall, UF-IFAS Leon County Extension: As leaves fall this autumn, use them as mulch or to make compost.

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November 20, 2008
Tallahassee Democrat

“Out of sight, out of mind;” the saying goes. Yet every day we depend on bacteria and fungi (which we cannot see with the unaided eye) for many products that improve our lives. Things like yogurt, yeast for baking, gourmet cheeses, and even antibiotics. So much more so is the case with soil. Beneficial microbes are the unsung heroes of good soil. When I was growing up, I often heard the expression, “feed the farm and the farm will feed you.” So it is also true that if we feed the beneficial microbes in the soil, we thereby feed landscape and vegetables.

It has been estimated that one teaspoon of healthy soil contains six million bacteria and over one hundred yards of fungi mycelium. Microbes do several important things. Their activities increase the pore space in the soil (even in clay soils) and thereby improve the drainage. Paradoxically by making the soil more sponge-like they also improve moisture retention.

Mulch and compost are what feed the soil organisms. Compost is decomposed organic matter, such as leaves and kitchen scraps, that can be mixed into the garden soil. Mulch is that material, such as pine straw or leaves, that is placed around plants to keep out weeds, conserve moisture, and moderate soil temperatures. But the organic matter in the mulch is slowly converted by bacteria and fungi into more bacteria and fungi and into the basic nutrients that plants need for growth, blooms, and fruit. In a sense, it can be said that mulching is “sheet composting.”

Compost can be purchased as mushroom compost or “Black Cow” from nurseries and retail stores. You can make your own compost from yard waste (also called “yard bounty”). It’s not difficult to make compost. Anything that once was plant material will eventually rot without turning, without a fancy compost bin, and without layering of greens and browns. However, there are advantages to having a more organized and active compost pile. There is plenty of information on the web. Here is one web site that you may find useful: http://livinggreen.ifas.ufl.edu/waste/composting.html.
Chemical fertilizers do not stay in the soil for very long. After a few good downpours they are washed into the storm water system or are leached into the subsoil. Chemical fertilizers also cost more than mulch and compost. Leaves and pine straw mulch can often be collected “free for the taking” at curbside. Mulch and compost release their nutrients slowly and therefore are not prone to disappear rapidly from the soil.

Mulch garden beds to a depth of three to four inches. Some settling will take place. Fluff up your mulch once a year and top it up with a thin layer of new compost. Acid loving plants such as azaleas, camellias and blueberries will appreciate pine straw mulch. Oak leaves also tend to make soil a little more acid, so if you use them in the vegetable garden, have the pH of your soil tested every three years. Do not pile mulch up directly against the trunks of trees and shrubs because the increased humidity and shelter makes the bark more susceptible to insect, rodent, and fungus attack. Leave an airspace of an inch or two.

When preparing new landscape and garden beds, dig a one or two inch layer of compost into the top six or eight inches of soil. It is best to allow it to “settle in” for a few weeks before planting.

If you have further questions please contact UF/Leon County Extension at (850) 606-5202 or go to the Leon County Extension website at http://leon.ifas.ufl.edu

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