

Fall Is Perfect Time to Improve Garden Soil

Nothing is more important to success in the garden than good soil. Time spent fertilizing, watering and tending to plants is necessary, but this time is almost a waste if the soil you're working with is not in good condition. Fall is an excellent time to step back and analyze how well your garden performed during the summer, and to make improvements to the soil.

Soil is formed when rock is broken down by climate and vegetation over a period of time. Soil is nothing more than weathered rock fragments and decaying remains of plants and animals.

Most soils have three distinct layers – surface, subsoil and bottom. The surface layer is a coarse layer containing more organic matter than the other soil layers and the layer that people pay the greatest attention to. This layer is the most fertile and has the greatest concentration of plant roots. Plants obtain much of their nutrients and water from the surface soil.

The subsoil layer is finer and firmer than the surface soil and serves as support for the surface layer. The subsoil layer is a storage space for water and nutrients for plants, a temperature regulator of the soil and supplies air for the roots of plants. The bottom layer is decomposed rock. It is not hard like rock, but may show the form or structure of the original rocks.

Soil texture refers to the proportional amount of sand, silt and clay in a soil. Texture and soil structure affect the moisture holding capacity of soil, permeability, capacity to hold and furnish nutrients, tillage operations and erosion.

Our soils in the southeastern part of Kansas have a high clay content to it. The clay in the soil is what makes the soil stick to your shoes when the soil is wet. Many refer to our soil as “gumbo.”

One way to address a heavy clay soil and to improve the soil texture is to add organic matter. Organic matter includes such items as manure, leaves, and grass clippings that have been composted. Earthworms, insects, bacteria and fungi use the organic matter as food, breaking it down into humus. Through this process, materials are made available for use by growing plants. In a heavy clay soil, the organic matter allows water to move more freely and loosens the tight clay, which makes the soil easier to work.

Organic material can be direct applied to gardens and flowerbeds this time of year and allowed to compost directly in the soil. Add two to four inches of organic material and till into the soil. If the soil is dry, apply water to begin the decomposition process. After about two weeks you can repeat the process with another application of organic material. The organic material will decompose over the winter and soil will be ready for spring planting.

Sand is sometimes suggested as an amendment material for clay soils. However, there is a good reason to be cautious about using sand. For sand to be effective at breaking up a clay soil, sand grains must touch one another so there is pore space between grains that can hold air and water. If the grains don't touch, the clay fills in the void between sand particles leaving no room for pores. This is the same principle used to make concrete and the result is somewhat the same. In other words – do not use sand!

Before doing any amendments to the soil, I recommend doing a soil test. Soil testing can be done through the Extension office for \$13. For more information on how to take a soil sample, please give me a call.

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