

Protect and Improve Your Soil

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Soil is such a basic element of gardening. Yet there is much misunderstanding about soils among those of us who garden. Some of us don't really give soil much thought. We think of it as nothing more than dirt, something in which we chisel out a hole with post-hole diggers to plant our plants. Others of us think the soil is responsible for everything. And when plants aren't doing well, we think the soil must either be lacking some magic nutrient or that it has been poisoned with something.

Soil does indeed provide a support system for plant roots to anchor in. And soil does serve as the vehicle through which plant nutrients reach the roots. But, by far, the two most important components of soil are very basic, oxygen and water. Many, if not most, plant problems are caused by problems in the root system, in the soil. And many, if not most, soil problems result from an inadequate amount of either water or oxygen. So, having a soil with healthy amounts of oxygen and soil moisture is very important. So how do we get such a soil?

Nature tends to provide a good soil for growing plants. Examine the soil in the woods. Usually it is easy to dig, indicating that it has sufficient pore spaces to provide the plant roots with oxygen. And, provided one soil hasn't received more supplemental irrigation than the other, usually the soil in the woods contains more moisture than soil out in a bare lot. It's no mystery that the leaf litter in the woods is responsible for the healthy soil conditions in a forest soil. The leaves fall from the trees. They shelter the forest soil from pounding rain and baking sun. They help to seal in soil moisture. They decompose, releasing a complex of chemical compounds into the soil. Earthworms thrive, further aerating the soil. Plants can thrive in such a soil.

Contrast the woods soil to the soil in many home landscapes. In many home landscapes, most of the trees are cut. If the lot lies vacant for long, some of the topsoil is eroded. During the process of grading the lot for construction, some of the topsoil may be scraped away. The remaining subsoil has smaller pore spaces, making oxygen in shorter supply. Other parts of the lot may be buried in fill sand. Fill sand has larger pore spaces, good for oxygen, but not good for retaining moisture. Nature's whole process of returning organic matter to the soil has been greatly disrupted. And to add insult to the injury of the construction process, heavy equipment or pallets of bricks may further compress the pore spaces in the soil, removing even more oxygen from the soil.

An ounce of prevention is worth a pound of cure. Protect your soil if you're clearing a lot to build a home. But what do you do if you are already living and gardening on a cleared home landscape? You have areas where you can barely get the shovel in the ground. Other

areas have so much fill sand that plants watered in the morning wilt by afternoon. The physical characteristics of the soil have been greatly altered.

The key to improving your soil and trying to rebuild favorable physical characteristics lies in putting back into the soil all the organic matter you can. Let leaf mulch accumulate in areas where you can't grow grass. In areas where you wish to plant large landscape beds, spread compost and till it into the soil. Leave the clippings on the lawn when you mow. Keep a one to two-inch mulch of pine straw, leaves, or other organic material on shrub, tree, and flower plantings. Over time, years, the physical characteristics of the soil will improve.

When you dig individual planting holes, don't use the post-hole diggers. And don't bother to mix compost into individual planting holes either, especially in a clay soil. The major advantage of compost in a clay soil is in improving aeration. Using your shovel to dig a planting hole two to three times as wide as the rootball does a quicker and much better job of aeration than does adding a shovelful of compost to a hole that's too small.

Before planting, if you till or dig in compost in landscape beds, flower beds, and vegetable gardens, you can greatly improve your soil. Over time, the decomposition of mulches further improves the soil. Where you have an existing lawn in poor soil conditions, though, the problem is more difficult to remedy. Though you can't mulch a lawn as you would a shrub or flower planting, you can "mulch" by leaving the clippings on the lawn when you mow. If you have a terribly compacted lawn soil, you may have the lawn aerated with a mechanical aerator that will remove plugs of soil. Don't expect overnight miracles from lawn aeration, though.

Try to avoid areas of bare soil in your landscape. Bare soil is very subject to compaction and erosion. If you have shaded areas where the grass won't grow well, keep leaf mulch there. If you have sunny areas where the grass won't grow well, realize that you're probably better off with weeds there than with bare soil. At least weeds will help hold your soil. And if you have good soil, you stand a better chance of getting the grass to grow there once you figure out what's limiting its growth.

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