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Improving Soil Structure with Amendments

Most garden areas have soil that provides less than the ideal environment for many garden plants. Perhaps it is too rocky or has been scraped bare for new construction. Perhaps it's too claylike or too sandy. While it is difficult to change a soil's basic *texture*, you can greatly improve its *structure*, making it more porous, rich, and water retentive.

The best amendment for any soil is organic matter, the decaying remains of plants and animals. As it decomposes, organic matter releases nutrients that are absorbed by soil-dwelling microorganisms and bacteria. The combination of these creatures' waste products and their remains, called humus, binds with soil particles. In clay, it forces the tightly packed particles apart, drainage is improved, and the soil is easier for plant roots to penetrate. In sandy or rocky soil, it lodges in the large pore spaces and acts as a sponge, slowing drainage so the soil stays moist longer.

One of the best materials you can use is compost. It is organic waste made from materials such as lawn clippings, leaves, and chipped or shredded green material from shrubs and trees. These are the main ingredients in our mulch pile which with time becomes rich, dark compost.

To improve existing soils, add a layer of several inches of compost over the top of your soil. Rototill or spade this material into your soil, getting it down at least 6-9 inches, depending on what kind of bed you are making. For a vegetable or flower garden, you want to amend your soil before you start planting.

Then, in late winter or early spring, you should add another 2-3 inches of compost over the bed and work it in. The soil itself as well as the garden plants uses up the nutrients that the compost provides so it should be added each year. You will notice a great difference in the texture and quality of your soil after a year or two and you will have healthy, strong plants to show for your efforts.

If you are planting trees and shrubs, you want to dig adequate holes for them and then amend the soil you will use with compost and fertilizer so they will get the best possible start. You want to make sure you have good drainage so the roots will not be in water-saturated soil. There must be air circulation in the root zone or the plants will not survive. Compost helps to provide this when mixed with the soil.

To make your own compost, a basic strategy is to have a space about 10 feet square. Divide the area roughly in half. On one side, alternate 6" thick layers of green and brown material. Green material consists of grass clippings, soft shrub material chopped or shredded, some pulled weed material, etc. Brown materials consist of dry leaves, used potting soil, wood chips, and sawdust. The 50-50 mixture helps maintain the carbon-nitrogen ratio optimal for decomposition. Make a pile about knee-high. If you are short on green material, add alfalfa pellets; if you're short on brown, add straw (not hay, which contains weed seeds). Both are available at feed stores. Once a week, mix and turn the pile, moving it to the other side of the space. In about a month you will have coarse compost. If you want a finer texture, continue mixing and turning for another month or two. In dry weather, hose the pile down when you turn it; it should be kept as moist as a squeezed out sponge. Note that for this method, you must have sufficient material for the entire pile at one time; you can't add new material until the current batch is finished.