

NEWS



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Preserving good soil structure

by Marlin Bates, University of Missouri Extension Horticulture Specialist,
batesma@missouri.edu

There are many components that make for an attractive and productive garden. Plant choice and placement, fertility, and enjoyable (back-breaking) work are all required for a desirable outcome. Of course a healthy soil, one rich in organic matter, porous, and well-drained, is an important part of this equation. Good soil structure is the keystone to a healthy soil.

In most gardens, it is not a matter of creating good soil structure, but preserving it. Soil structure is simply the arrangement of soil particles into aggregates. This structure is the result of centuries of mineralization and decomposition. Soils that seem particularly heavy due to high clay content still generally have good structure. Certainly adding compost, aerating, and topdressing can help to improve soil structure, but there are some practices that can reduce the need for these improvements.

Avoid working in saturated soils. This includes planting, hoeing, shoveling, tilling, and even walking. When soils are at full capacity with water they are vulnerable to structure damage (more often called compaction). The force of a foot or of a prying shovel in the garden can destroy the aggregation of the soil particles. This results in reduced pore space within the soil, which reduces air and water space and increases the need for amendments and/or aerating.

Even when soils are dry, soil structure can be destroyed. Over-tilling is the leading culprit here. It is easy to think that a bed of finely-grained soil particles is a sign that tilling is complete, but over time, this practice can reduce the soil's water- and nutrient-holding capacity and cause crusting/cracking of the soil surface. If you till your gardens, do so only to incorporate amendments, prepare a seed bed, or to make transplanting easier; and limit the frequency with which the tiller enters the garden (once or twice a year should be plenty). Alternatively, consider no-till gardening. This is a certain method to ensure that soil structure is not destroyed due to tilling.

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By preserving the inherent structure of your soil you will enjoy enhanced returns on the beauty and productivity of your gardens. For more information on preserving soil structure, or no-till gardening, contact Marlin Bates at (816) 270-2141 or at batesma@missouri.edu

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