

Composting and Water Conservation

By [E. Vinje](#)

It seems that no matter the problem we face in our gardens, the answer — or at least a part of the answer — frequently includes compost. This is certainly true in xeriscape gardening, the process of using minimal moisture effectively. Soil conditioning is one of the seven principles of xeriscaping. Soil that retains moisture while still allowing moisture to move through it is the goal. While there are many amendments that can be added to particular kinds of soil — clay or coarse — to increase the water holding capacity, the first and best step (because it also adds valuable microorganisms to the soil) is composting.

Gayle Weinstein's excellent text *Xeriscape Handbook: A How-To Guide to Natural, Resource-Wise Gardening* does a good job of explaining how water moves (and stays) in soil. Water, filtering from top to bottom, fills the spaces around each soil particle. Gravity pulls the water through the soil, but capillary action holds some of the water near the surface. When gravity draws some of the water away from plant roots through the soil and the capillary water is lost, either through evaporation or plant uptake, what's left is called hygroscopic water, the water absorbed by the soil particles and slowly given up as capillary water between the soil particle spaces vanishes. When soil is saturated, through watering or irrigation, the moisture isn't well available to plant roots as gravity soon pulls it away. When only the capillary water is available, the soil is said to be at "field capacity," ideal for plant uptake.

What all this mumbo-jumbo boils down to is something gardeners already know: garden soil should have good drainage and the ability to hold moisture in the hygroscopic form. A great way to help your soil do this is to add compost. Adding compost to fine-textured, clay soil that has small pore spaces and drains slowly, facilitates the granulation of fine clay particles. And that, as Weinstein points out, results in soil that is easier to work and better able to drain. In coarse-textured soil, compost adds to water retentive properties even as the micro organisms help decompose larger soil components. If the soil is particularly sandy or gravelly, you'll need to add a lot and, possibly, a nitrogen source like manure to give plants and microorganisms the nutrition they need.

Once your soil is at its moisture-retaining best, there's one other thing you can do to conserve water: mulch. Mulch slows evaporation leaving more capillary-held water in the top layer of soil; just where your plants can make the best use of it.