

Improving Compact Clay Soils

With the current explosion in suburban sprawl, many new homeowners are experiencing frustration and aggravation when it comes to their gardening. That's because construction activities have removed, buried or damaged the existing topsoil and left in its place a compact, malnourished and lifeless clay soil that prevents plants from flourishing.

Successful plantings require a soil structure consisting of approximately 50% solids, 25% pore space for air, and 25% pore space for moisture. Clay soils lack adequate pore space for air which can lead to poor drainage, reduced root growth, and greater susceptibility to environmental stresses such as drought. So what products can be used to remedy this situation?

The most common solution is to add organic matter such as compost or peat moss. Compost consists of organic materials such as grass clippings, leaves, food scraps, etc. that are decomposed and recycled into a dark, crumbly material. Compost will help increase soil aeration, water retention, microbial activity, and it will help to moderate soil pH. Peat moss consists of decomposed organic material harvested from peat bogs. Its cellular structure has a high capacity for retaining water, air and nutrients that are essential for plant growth. A minimum of 2-4 inches of compost or peat moss should be incorporated into the top 6 inches of topsoil. While both materials can loosen clay soils, neither offers a permanent solution.

Gypsum is a naturally mined mineral that breaks up clay soils through electrochemical reactions. The calcium ions in gypsum neutralize the negative charges on the clay particles that would otherwise keep the particles dispersed. This neutralization process causes the particles to group together into a more granular form. Gypsum will only loosen clay soils as long as enough soluble calcium is available. For best results, apply it to the surface twice a year, Spring and Fall, and water it in along with some organic material.

As dual income parenting becomes more common and work hours extend into the weekends, many gardeners are seeking a permanent solution for clay soils such as Espoma's new Soil Perfector™. Soil Perfector is derived from a ceramic material that is kiln-fired at temperatures in excess of 2000° F. This process creates a durable lightweight granule containing thousands of tiny storage spaces that hold the perfect balance of water, air and nutrients. Unlike gypsum and peat moss, Soil Perfector does not break down or degrade. One application of Soil Perfector will permanently improve aeration and drainage, prevent compaction, and promote root growth so your plants grow and thrive for years to come. In new garden beds, spread a 1 inch layer of Soil Perfector across the entire bed and work it into the top 6 inches of soil with a shovel, rake or rototiller. For individual plants, mix 1 part Soil Perfector to 3 parts removed soil. Follow planting directions and water thoroughly.

For more information on clay soils and Soil Perfector, visit Espoma's website at www.espoma.com.