

# Way to Grow

## The Dirt on Dirt

by Steve & Cathy Lambert



Getting good dirt is the secret to a successful garden (and a good party – but that would be the gossip column). Many homeowners are not aware of the importance of establishing and maintaining superior soil structure and fertility.

The majority of us are stuck with very high clay content. The soil in our own yard could practically be used on a potter's wheel. On the upside, clay soil has a high mineral content and a great capacity for holding nutrients.

**The Science of Superior Soil:** A soil's fertility is determined by a combination of essential nutrients and pH that makes these nutrients available to plants. The basic nutrients required by plants are (n) nitrogen, (p) phosphorous and (k) potassium. Nitrogen is responsible for healthy growth of plants leaves and stems. Phosphorous is important for root growth, while potassium is required for the overall health of the plant by keeping it growing and boosting its immune system.

The problem with clay soil is that its particles are very small in comparison to other components found in soil. For perspective, if a clay particle were the size of a baseball, the average grain of sand would be, relatively speaking, the size of a Greyhound bus. Because clay particles are so tiny they pack together easily and become very dense, making them virtually impermeable to water and air, which are essential for healthy soil.

**Simple Soil Solutions:** Whether your soil has more or less clay than ours, there are many things that can be done to improve and manage its structure.

Enriching your soil with fertilizer and organic material is one of the best ways to ensure your gardens health. Organic materials include many forms of compost from self-made to commercial planting mixes. A few amendment mixes that we've used successfully include; Clod Breaker and Multi Purpose Mix from American Soil Products, and Diablo Mix from Sloat Garden Center. These have a blend of composts, including

Scoria, a small ground lava rock that helps to keep soil loose and open.

Amendments should be incorporated into the top 8-to 10-inches of soil by ripping or tilling. Avoid over tilling clay soil, as that will destroy the structure you're looking for. Strive for the consistency of dry oatmeal, not fine flour.

In healthy soil, there are literally hundreds of species of bacteria, fungi and many other microscopic soil critters. A fungus that's very important to a plant's roots, called Mycorrhizae, has occurred naturally in soil for 400 million years. Under the right conditions, they form a close symbiotic relationship with the plant roots. Sadly, most of the soils in our own yard and in many of those we've tested locally have a very low population of these valuable soil microbes. The good news is that it's now possible to replenish your soil with these soil "stimulants" that encourage healthy plant growth. These products are available in either a powder or liquid form, which contain dozens of the most important soil microbes including Mycorrhizae. The one we've found to be incredibly successful is Bolster. It can be used at planting time or scratched into the surface during maintenance. We've used Bolster to save plants and trees that were in extremely poor condition and likely otherwise would not have survived.

The last step for good soil management is keeping your soil mulched. If you've ever taken a hike through an undisturbed forest, or stopped to really look at what's going on under that "messy" tree of yours in the fall, you'll get a better understanding of what mulch is meant to do. This blanket of spent leaves, twigs and branches, also referred to as "duff" serves as nature's mulch, which is a necessary and welcome part of the ecosystem.

In a more controlled environment with a broad array of plant material, such as a residential garden or landscape, attempting to let everything naturally mulch itself is insufficient. Allowing duff to build up where

it doesn't cause an unaesthetic appearance, for example in a vegetable garden, is a great idea but it will not be enough. You'll need to add quality mulch too.

Many consider mulching as an aesthetic tool, to improve the look of their landscape and often choose larger scale mulch blends so they'll stay put longer. Using mulch for this purpose alone is counterproductive for the long-term health of your landscape. The best mulch materials are smaller and break down quickly and easily into the soil. Be prepared to reapply your mulch layers at least once every couple years. After several applications, you'll need to add less mulch each time.

*If you have any questions about improving your soil feel free to shoot us an email at [Office@GardenLightsLandscape.com](mailto:Office@GardenLightsLandscape.com). We are planning to write an article about vegetable gardening in Orinda soon and would love to hear from other local veggie farmers about what they have and haven't had success with. Email us any feedback.*