

SOIL

YOUR LIVING, BREATHING SOIL

ABOUT SOIL

Soil isn't just the ground beneath your feet, it's a living community. Inside are microorganisms, nutrients, minerals, water and oxygen, all contributing to healthy plant growth. Good soil means well-fed plants that bloom more abundantly and produce bigger and longer lasting flowers. Attention to your soil is the best way to grow your new container plant into the vigorous adult that makes your garden look its very best.

A PARTICULAR MATTER

Nobody has perfect soil, and there is as much of your plant growing under ground as there is above. The nature of your soil dictates the size, shape and quality of the root system. A problem soil can be so dense it chokes off the roots and prevents them from spreading deep into the ground.

Every soil on Earth is made up of billions of tiny particles. Particle size dictates how your soil behaves. It also relates to fertility, which is how well the soil supports plants.

Clay soils have the smallest particles that hold together in a tight mass. If your soil sticks to your shovel, or if it becomes rock hard and refuses to absorb water when dry, you've got mostly clay soil. Clay can be very fertile but really hard for roots to penetrate. Sandy soils have the largest particles that barely hold together at all. If water endlessly disappears into your soil, or if it is very easy to dig when wet, or dry, you've got mostly sand. Sand tends to be of low fertility, and offer little resistance to spreading roots.

Most soils are a mixture of particles with the dominant size being its type. Loam is a general work for near-perfect soil that has lots of organic matter, enough sand to be easy to dig in, but sufficient clay to provide fertility and solid anchorage or plants.

WHAT MAKES THINGS GROW

A fertile soil is one that makes plants grow. Most soils are not naturally fertile, but they can be improved to make plants perform well. Moderate fertility also means plants are far more resistant to pests and disease.

Fertile soils are dark in color because they contain a lot of organic matter, which is the decomposing remains of plants. When fully decomposed it becomes humus, a form that plants can use. Examples of humus are compost, composted steer manure, ground peat and leaf mould. Adding lots of humus is like sending your soil to a health spa, and it will reward you by producing faster growth on more beautiful plants and flowers. You can add humus to your soil any time you wish. Large quantities of humus help cure heavy clay soils and fast draining sand. It also adds micro-organisms and minerals to build up weak soils. Just remember that it doesn't last forever, so plant on adding humus every year or so, just to be sure.

You can also add humus in various ways:

- Work it into the soil in the bottom of your planting hole and mix with the excavated soil as you pack it around the root ball.
- Improve the soil over an entire planting area by spading or rototilling it in 6" to 24" deep.
- Cultivate it into the surface of the soil around older plants that can use a fertility boost.

FIND OUT WHAT'S GOING ON DOWN UNDER

To find out what's going on down under in your soil, dig a test hole 2' deep and look at the sidewall to tell if there is a lighter colored layer under the topsoil. You may want to dig deep holes and add lots of humus when you plant to improve things down there.

To evaluate drainage conditions, fill the hole with water. If it drains away in an hour you have great drainage. If it takes a day you have slow drainage. If it sits over night or longer, you have poor drainage. If you have poor drainage, add more humus and try the drainage test again.

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PH IS THE YIN AND YANG OF SOILS

The pH of your soil tells where it falls on a scale that is acid on the low side and alkaline on the high side. Fortunately most soils are near neutral, falling somewhere between the two extremes. You need not be concerned with pH unless your soil is on one extreme or the other.

Acid soils tend to occur in areas of high rainfall. They also exist on the forest floor where acidic leaves from the canopy of trees build up to change the pH of the soil. Plants that evolved in this environment thrive in acid soils, and will do well in neutral soils too, but never in alkaline conditions. Examples to be aware of are Azalea, Camellia, Rhododendron and Japanese Maple.

Alkaline soils tend to occur in pockets where ancient lakebeds evaporated to leave behind high concentrations of minerals. Alkaline soils tend to develop a white crust called "summer snow", which are minerals left after water evaporates from the surface. Sometimes alkaline in your sprinkler water can gradually turn a neutral soil to the alkaline side. For many, the only remedy for alkaline soils is to grow plants in raised beds filled with fresh topsoil.