



Intro to Soils

A few months ago, I wrote about salty soil, but the soils of Southern Nevada pose more problems than mere salt. In other places, you can generalize about the soil, but not here. Different parts of this area have very different soil types and textures.

There are places around the world where all you have to do is - plant a seed, get a plant. Plant a small tree, give it a little care, and you'll get a big tree. Not in Southern Nevada.

Anybody who tries digging a small hole and filling it with a plant straight out of the pot or the box, will probably be disappointed.

Why is that? First is our weather: hot or cold, and incredibly dry. The Mojave is **the driest desert** in North America.

This climate is a problem, especially for non-adapted plants. One can modify the environment, using shade, mulch and water, but that will not make much difference in plant survival without taking a close look at the soil.



Sahara Desert

If you ask a person who is not local about soils in the desert, they will probably say 'sand'. (*Picturing the Sahara.*) And there are some sandy soils here.

If you ask a person who does live around here about the soil, they may say 'caliche' unless they laugh and say 'what soil?' We do have soil. It is, however, different.

Often, it is hard to make a hole in the ground. There is caliche, a conglomerate of limestone, rock and

other junk, which keeps the soil alkaline. It is not easy to work with - a challenge to dig in, or in soil that has a lot of it. Caliche is not in all local soils; sometimes when people are complaining that they cannot dig in their soil, the problem is not caliche, but compacted soil. The weight of earth moving machines and construction equipment crushes the soil together into a hard pan. Almost as tough as rock.

There are three fundamental components to soil – clay, flat microscopic crystals; silt, slightly larger; and sand, enormous particles compared to the other two. Soils with no sand tend to have terrible drainage, and very sandy soils dry rapidly because water races through them. The relative amounts of each of those components determine the soil texture.



Mojave Desert

Our soils are often white, grey or red. The colors are due to the clay and minerals. The white indicates free minerals, like calcium, which plants require. Reddish soils are high in iron (the color of rust).

Local soils have little organic matter, although they may have adequate minerals. Unless a plant is from the Mojave or another desert, one needs to improve the soil by adding an amendment like compost.

Where soil is mostly sand, slow down drainage using compost or clay.

For a rough estimate of the proportion of the components in your soil, run a little test using a jar, soil, and water. We have procedures for this and several exercises available at the Cooperative Extension office.

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