

IF-1 Nevada Soils

Key Points

- Northern Nevada soils are traditionally hard and lack nutrients and organic matter.
- Organic matter needs to be worked into both clay soils and sandy soil for aeration and water holding.
- Depending on what is being planted organic matter needs will vary from 2 – 3 inches for lawn to large annual applications in flower and vegetable plantings.
- Nutrients, especially nitrogen, need to be applied for good plant growth.
- Gypsum alone can not break up a hard clay soil.

Nutrient Deficient Soils

Soils in the Truckee Meadows/Carson City area are predominately clay and very hard, though some areas are quite sandy. Soils are also low in nutrients, especially nitrogen and naturally contain very low amounts of organic matter. Probably the largest concern is the varying levels of salts. Soil pH in this area is typically 7.5 and above and it's not unusual to find pH above 8.0. Some locations along the eastern edge of the Truckee Meadows have soil affected by sodium salts. This salt affects soil structure and eventually restricts drainage. All of our soils need to be conditioned and this is one of the keys to successful gardening in the northern Nevada area.

Organic Matter

Organic matter must be worked into both clay and sandy soils. Organic matter of any kind may be used. The most commonly used are peat moss and bark humus but there are other commercially available ones. Your own compost pile, leaves, grass clippings and composted manures all can be excellent organic sources to be incorporated into the soil. Organic matter conditions and improves any soil. It acts as a sponge so it can absorb and hold quantities of water. It is beneficial in porous, sandy soils as it will slow water infiltration down and minimize leaching of nutrients. The organic matter keeps the clay soils loose and allows better air and water movement, making it easier to work. Sawdust, shredded bark and straw can be used as sources of compost but need additional nitrogen added to aid breakdown.

Application Rates for Organic Matter

Depending on what is being planted the rates of organic matter vary. New lawns should only have 1 to 2 inches of compost worked into the top 6 to 8 inches of soil. Any more and the lawn will be too soft and spongy.

When planting trees and shrubs in heavy clay or sandy soil, organic matter should be used. Rate is one part (shovelful) to 3 to 4 parts existing soil. This organic material must be mixed in very thoroughly with existing soil. Flower beds and vegetable gardens can take as much organic matter as you can work in. Use up to 6 inches of compost worked into a depth of 10 to 12 inches. Add additional compost every year to vegetable and flower beds.

Nutrient Additions

Nitrogen is usually deficient and often levels of phosphorus, potassium and iron also need to be added. Organic sources such as manures can be used but tend to be low in actual nutrients and can be salty. Commercial fertilizers are formulated and calibrated for use with turf, tree, shrubs, vegetable or flowers. Fertilizer should supply the nutrients that the particular plant being fed requires, i.e., nitrogen only for turf. Fruit trees and flowering plants require phosphorus as well as nitrogen. All plants require potassium. Plants such as roses, maples or oaks require some additional iron. Products such as the Gardner & Bloome line of compost, potting soils, peat moss and other bagged humus products, and of course, your own compost pile can be used to improve these hard Nevada soils. Hard soils are conditioned by physically incorporating organic matter.

Gypsum

The only way gypsum can help break up hard clay soil is when it's applied to soil that has sodium salts present and is then tilled into the soil. (Historically sodium salts are found east of South Virginia Street against the foothills.) See Successful Gardening at Double Diamond Fact Sheet for more information.

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