Soil Testing

The University of Nevada Cooperative Extension Western Area/Washoe County office maintains a volunteer-run soil testing lab. Basic soil sample analyses are performed by Master Gardener volunteers at cost for the public.

Soil Testing Information:

- **The Test:** Our soil test checks for soil texture, pH (potential hydrogen), free lime and electrical conductivity (EC). This is a very basic test. Our lab cannot perform tests for chemicals or nutrient levels.
- **Fee:** There is a fee of $10.00 for soil testing to cover costs. We accept cash (exact change only), check and money order. Please make checks and money orders payable to Board of Regents.
- **Sample Size:** We require two cups of soil to complete the soil testing process. Please place your soil in a paper bag.
- **Turnaround Time:** Our testing services are supported by Master Gardener volunteers. Our turnaround time varies based on volunteer availability, but you will generally receive your results via US mail within two weeks of receipt of sample.
- **Accuracy:** We verify our accuracy by periodically sending soil samples we have tested to independent labs. We compare our results with theirs to make sure that our lab results are correct.
- **Notification:** You will receive the soil test booklet in the mail, complete with your results. We will include information to help you improve any soil deficiencies.

About Soil Texture: Soil texture affects water-holding capacity, erosion potential, nutrient movement and air exchange. The best way to change your soil texture is through addition of organic matter. In Nevada, adding sand, silt or clay will not change the soil texture, and will likely create a whole new set of problems. All soil will benefit from the addition of organic matter.

About pH (potential hydrogen): pH (potential hydrogen) is a measure of acidity or alkalinity. Most common landscape plants grow well in soil with a pH level between 6.5 (slightly acidic) and 7.5 (slightly alkaline), but will grow satisfactorily up to pH 8.0 (alkaline). If the soil has a pH value above 8.5, this may indicate undesirable quantities of sodium. Laboratory testing is required to confirm this. A list of commercial soil test labs is available at your local Cooperative Extension office.

About Free Lime: Lowering the pH of many Nevada soils is almost impossible

if free lime is present. Free lime is calcium carbonate, a naturally occurring mineral present in much of our native soil. We test for the presence or absence of free lime. Free lime acts as a buffer against lowering soil pH. As other sources of calcium are used by plants, the soil reservoir of free lime slowly dissolves to replace it. This normal chemical reaction makes it extremely difficult for the home gardener to lower the soil pH when free lime is present.

If free lime is not present in your soil and you wish to lower your soil pH, you can do so by adding elemental sulfur or compost. Over time, the elemental sulfur will oxidize in the soil, creating sulfuric acid. The amount of sulfur to add depends upon your soil texture. For sandy soils, apply about 6 pounds per 1,000 square feet. For clay soils, apply no more than 10 pounds per 1,000 square feet.

Adding compost or other forms of organic matter will help correct pH problems and provide valuable organic matter to your soil. Organic matter breaks down slowly, improving water-holding capacity, fertility and workability.

About Electrical Conductivity (EC): The electrical conductivity (EC) value is related to the soluble salt content of the soil. High levels of salts can injure plants. Salts can be removed only by applying enough water to leach the salts below the root zone. Adding organic matter can help improve drainage so leaching can be successful.

Related UNCE Publications:

- Soil Testing Guide for Nevada Home Gardeners
- How to Take a Soil Sample
- How to Read a Soil Analysis Report
- Nevada’s Soils– Worth the Toil
- Nevada Soil Amendment Myths

Related UNCE Classs/Events:

- Grow Your Own! Basic Soils, Watering and Fertilizing
- Grow Your Own! Soil Amendments, Composting, Cover Crops
- Grow Your Own! Growing and Composting in Small Places

Virtual Tour of the Master Gardener Soil Testing Lab: