A Good Time for Soil Testing

I've answered a few calls this week concerning the yellowing of leaves on ornamental plants, like azaleas and roses. This time of the year, we start showing nutritional deficiency as plants have ceased growing and finished using nutrients in the soil. Nitrogen and potassium are two primary nutrients which show up as yellowing on leaves when they are deficient. Nitrogen is mobile in the plant; therefore, lower leaves (older) leaves begin to yellow first.

Nitrogen and potassium are also very soil mobile. When we have heavy rains, as we did last week, this leaches mobile nutrients down in the soil. This is nothing to be concerned about. As plants are losing their leaves, they are preparing to enter a dormancy period. Until we start back fertilizing in spring, we can use this time to perform soil tests.

Shorter days and lower temperatures cause the production of chlorophyll in plants to cease; hence, deciduous plants begin losing their leaves. To maintain an aesthetically pleasing landscape, the yard work changes. Instead of mowing grass, we are raking leaves. Instead of planting flower beds, we are pruning old shrubs. Instead of fertilizing – you guessed it – we are conducting soil tests. Much of the winter yard work is not fun, but it is necessary.

In order to maintain a healthy lawn and landscape, we must have productive soils. Productive soils begin with a soil test. And this is the best time of the year to do one. But let's first discuss why soil testing is important.

Nutrients necessary for plant and root development are taken from the soil. When you buy a bag of fertilizer, the three numbers on the front are an analysis of nitrogen, phosphorus, and potassium or N, P, & K. These are called primary nutrients. The plant needs these nutrients in a greater amount than other nutrients. Nitrogen gives the grass its dark green color. Potassium gives it vigor and is what pastures fertilize with to winterize their fields.

Next, you have sulfur, magnesium, and calcium. Occasionally, sulfur is listed on a fertilizer bag as the fourth number. These nutrients are called secondary nutrients. They are essential to the plant but in lesser amounts. Deficiencies with secondary nutrients are not as popular as deficiencies in primary nutrients. You may be familiar with "blossom-end rot" on your tomatoes. This is a calcium deficiency.

And finally you have your micronutrients. Some include boron, zinc, copper, and manganese. These elements are essential but in very small amounts. Micronutrients significantly affect some plants and not others. Pecans succumb to a zinc deficiency, while peanuts are negatively affected by zinc toxicity.

In addition to nutrients, pH is one of the most important measurements of soil fertility. It is measured on a scale of 1 to 14, with the lower the number being more acidic. It indicates whether a soil could contain toxic levels of aluminum and manganese, or whether it may be low in bases such as calcium and magnesium.

The availability of plant nutrients is directly related to pH. In Georgia, most soils are acidic, having a lower pH. Therefore, it is sometimes necessary to add lime to raise the pH. Most plants like a pH between 6 and 7. At this range, nutrients are more available for the plants to uptake.

A routine soil test determines the presence of many nutrients and pH. So, how do you complete a soil test?

1) Pick a location and collect 8 – 10 samples from each location. This is your lawn, garden, trees, shrubs, etc. Make sure to get a representative sample for each area.

2) Sample soil from your lawn at a depth of 4 inches. For gardens, ornamentals, fruit trees, etc., sample at a depth of 6 inches.

3) Use clean sampling tools and containers to avoid contaminating the soil sample. Never use tools or containers that have been used for fertilizer or lime. Tools like trowels, shovels, spades, hand probes or hand augers may be used to collect samples.

4) Avoid thatch and mulch. With a spade, cut a thin slice approximately ¼ inch thick. Combine and mix soil in a plastic bucket to avoid metal contamination. Place the soil in the UGA soils sample bag. Make sure to fill out the information and identify the sample. Each soil sample is $6 and is mailed to the soil test lab in Athens. Results become available in about a week to ten days.

Information from this article was taken from UGA publication, "Soil Testing for Home Lawns, Gardens, and Wildlife Food Plots." For any additional questions, contact Thomas County Extension office at 225-4130.