Ever wonder why every time you go to the doctor it seems they want to take a blood sample. I am no doctor, but I do realize the important value blood tests serve as a diagnostic tool. I like to think in terms of a soil test as a blood test for the soil. A soil test is a chemical analysis that estimates a soil’s ability to supply nutrients. Soil testing is analyzed by the North Carolina Department of Agriculture and Consumer Services (NCDA&CS) Agronomic Division. I would like to share with you the benefits of a soil test and proper soil sampling.

Benefits of a soil test include:

• Take advantage of nutrients already in the soil.
• Identify nutrients that are lacking in the soil.
• Provide a proper balance of plant nutrients.
• Obtain proper soil pH for optimum plant performance.
• Save money by applying only the nutrients and lime needed.
• Reduce chances of excess nutrients getting into water sources.

Don’t become a victim. All plants, including field crops, turfgrass, and garden plants, need 16 essential nutrients to grow and require favorable chemical conditions indicated by the soil pH. Just because you apply fertilizer does not mean you will get optimum plant growth. Soil pH affects the availability of nutrients in the soil as well as those applied as fertilizer. Knowing your soil pH will help you know the nutrients you apply are working for you.

Proper pH provides a number of benefits:

• Nutrient solubility improves, so plants have a better nutrient supply.
• Plants develop healthier roots, because they are exposed to less toxic aluminum. Better root growth may enhance drought tolerance.
• Lime used to increase soil pH is a source of calcium (Dolomitic lime provides calcium and magnesium).
• Enhanced nodulation of legumes improves nitrogen fixation.

Poor sampling gives misleading test results. Soil testing can be divided into three major steps: (1) collecting the sample, (2) analyzing the sample, and (3) interpreting the results. Collecting the sample is probably the most inaccurate of these three steps. Test results to represent an area or field can be no more accurate than the sample collected.
Proper soil sampling

Collect your samples with stainless steel or chrome-plated sampling tools and plastic buckets to avoid contaminating the samples with traces of chemical elements (micronutrients) from the sampling tools. Avoid brass, bronze, or galvanized tools. Make sure the buckets and sampling tools are clean and free of lime and fertilizer residues. Before sampling, make a detailed map of your land (field, turf areas, flower beds, etc.)

Where to take samples
Each sample area should consist of only one general soil type or condition. If the area you are sampling contains sections different in slope, color, drainage, and texture and if those areas can be fertilized separately, submit a separate sample for each area. Areas within a field where different crops have been grown in the past should be sampled separately, even if you plan to grow the same crop in the whole field. Assign a permanent sampling identification name of 5 characters or less to each area that will help you remember this location and mark on your map.

Sampling depth
The correct depth for a sample depends on the cropping situation. For cultivated and strip-till crops, sample to a depth of 6-8 inches. For established pasture, turf, and minimum or no-till operations, sample to a depth of 4 inches. When establishing any of these cropping situations, always sample to an 8-inch depth.

Collect soil cores with a probe at 15-20 random locations across your sample area in a zigzag pattern. Thoroughly mix the soil cores in a clean plastic bucket and fill a standard soil sample box provided by the NCDA&CS to the red “fill line.” Samples must be submitted in the standard soil boxes and accompanied by a completed “Soil Sample Information” form, which can be picked up at the Extension office. You should submit samples 3-6 months before planting or making fertilizer applications. Any lime recommendations should be applied in the fall to allow time for lime to neutralize soil acidity and raise the pH to optimum levels. Once optimum pH levels are achieved, sampling every 2-3 years is adequate; however, intensively managed crops may require yearly samples.

Soil samples can be dropped off at North Carolina Cooperative Extension, Robeson County Center, at 455 Caton Road in Lumberton and will be delivered when staff goes to Raleigh or samples can be mailed to NCDA&CS Agronomic Services Division:

Mailing Address: 1040 Mail Service Center, Raleigh NC 27699-1040
Physical Address: 4300 Reedy Creek Road, Raleigh NC 27607-6465

For more information, please contact Mac Malloy, Extension Field Crops Agent with North Carolina Cooperative Extension, Robeson County Center, at 671-3276, by E-mail at Mac_Malloy@ncsu.edu, or visit our website at http://robeson.ces.ncsu.edu/.