Sample handling greatly effects soil test results.

This weeks article is an important topic for not only farmers but also for gardeners and homeowners interested in maintaining a high quality lawn.

With the continued high cost of inputs, proper soil testing is important to making the most effective and efficient decisions on how much to fertilize your ground. Soil testing can provide you with a good accurate picture of what nutrients are in your soil and what nutrients are lacking. But, soil testing is only as good as the quality of the samples that the lab receives. For this reason, a strong emphasis should always be placed on ensuring that the samples collected are representative of the fields they are collected in. However, these samples must also be handled properly AFTER they have been collected.

Soils are home to a diverse population of microorganisms, many of which decompose crop residue and cycle nutrients in the soil. Soil nitrogen is strongly influenced by these microorganisms and does not stop just because the sample was put in a bag, therefore soil nitrogen levels can potentially have large changes between collection and submission.

Researchers at the K-State Soil Testing Lab recently did a study looking at what can happen if these samples are not handled properly and/or delayed in submission to the lab. They looked at 3 different treatments in which a sample might be submitted; immediately, after up to 14 days in cold storage and after up to 14 days riding in a truck cargo box. They looked at 3 ways of testing soil nitrogen across these 3 treatments; Total Inorganic Nitrogen, Nitrate Nitrogen and Ammonia Nitrogen. Using immediate testing results as baseline, the sample that was kept in a truck cargo box came back as having significantly more inorganic nitrogen and nitrate nitrogen after as little as 2 days and up to 3 times the amount of the immediately sample over the 2-week test. The sample that was kept in cold storage did not change substantially in any of the 3 tests during the 2-week period of the study when compared with the immediate sample. The ammonia nitrogen test did not show a substantial difference between any of the 3 treatments. When looking at this on a larger scale in the terms of Profile-N credits calculated from those soil tests, the unrefrigerated samples showed nearly 100 lbs of N/acre higher values than the refrigerated or immediate sample.

Improper handling of soil samples after collection can lead to very inaccurate results and can result in under or over fertilizing your fields/plots. So remember when collecting soil samples to get them submitted as soon after collecting as possible, preferably the same day. If this is not possible, samples should be placed in a refrigerator set at less than 40 degrees F until you can get them in the mail.