

ISU Soil Test Lab Update

<http://www.agron.iastate.edu/soiltesting/>

March 2009

Soil Sampling and Testing in Spring

Last fall's sampling season was very short because of the late harvest and early snow. Many wonder about issues with early spring soil sampling and testing for pH, P and K. Other than avoiding taking soil samples from frozen or too wet soil, interpretations of test results are about similar to interpretations for samples taken in the fall. Sampling frozen or too wet soil usually results in bad samples that may not appropriately represent a field area or a soil depth. Some seasonal effects on test results are expected mainly for soil pH and soil-test K, but usually values are within variation often seen in the fall. Soil-test K variation sometimes arise from patterns of K release from crop residues and moisture affecting the equilibrium between slowly exchangeable and exchangeable K in soil clays. For pH, variations relate mainly to impacts of rainfall and soil moisture that may result in plus or minus 0.1 or 0.2 pH units. Therefore, early spring also is good for soil sampling and testing!

Late Spring Soil Nitrate Test for Corn

The time will soon be here when corn will be about 6 inches tall and ready for sampling for the late spring soil nitrate test. Remember that these samples should be taken from the top foot of soil. The cost of this test is \$5.00 per sample. Our goal is to have results available within 24 hours or the next business day after receiving the sample. Results can be e-mailed, faxed, or mailed to the submitter. Submit samples immediately or keep them cold before submitting. Do not mail samples on Friday because the Lab is not open on Saturday or Sunday and the samples will not be received until Monday. Please see Extension Publication Pm-1714 for sampling and recommendation information. This publication and other related nitrogen publications are available on the Extension Publications web site. More information is available from our web site:

<http://www.agron.iastate.edu/soiltesting/>

Soil Sample Bags

Soil sample bags are available from the Soil Test Lab. We provide these bags at no charge to our clients. To request a 50 or 100 pkg. of bags, e-mail soiltest@iastate.edu.

New Tests Update

The lab in coordination with Dr. Antonio Mallarino and graduate student Agustin Pagani have been evaluating Sikora and Mehlich buffer pH methods that could substitute the currently used SMP method in an attempt to eliminate hazardous chemical waste. Preliminary results were presented in February at the 19th North Central Soil-Plant Analysis Workshop. A copy of the proceedings article can be downloaded from the lab web page (<http://www.agron.iastate.edu/soiltesting/>). The results coincide with results from neighboring states in that the Sikora method gives the same buffer pH values as the currently used SMP method while eliminating hazardous chemical waste. The Mehlich method (not be confounded with the Mehlich-3 extractant for P and K) gives different results, however, and should not be used until ongoing field research provides appropriate calibrations for Iowa soils. Dr. Mallarino has requested the IDALS soil-test certification program inclusion of the Sikora buffer method as an option in its list of required tests for which labs should be certified. We expect a favorable resolution later in the spring. Therefore, it is likely that our lab, and other labs operating in Iowa, soon could switch from the SMP method to the Sikora method. Dr. Mallarino and students also are conducting research to confirm or update the lime recommendations based on the three buffer pH methods, but results will not be available until summer 2010. Therefore, because buffer pH values by SMP and Sikora methods are the same, in the meantime Iowa State University will continue using the currently used lime recommendations listed in the Extension publication PM-1688.

Prepared by: Brian Hill and Antonio Mallarino,
Department of Agronomy, Iowa State University.

Soil and Plant Analysis Laboratory Staff
Brian Hill, Assistant Scientist, Lab Manager
Kerry Culp, Clerk

Chairman, Soil and Plant Analysis Laboratory Advisory
Committee: Antonio Mallarino

For additional information about the lab and the variety of testing options we offer please contact us by phone at 515-294-3076, fax at 515-294-5567, or e-mail to soiltest@iastate.edu