North Dakota State University

The Field Report

NDSU Soil Testing Lab

Volume 3, Issue 1 Summer 2012

In this issue:

Send us an email!

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On July 1, 2012 the Soil Testing Lab updated the price list.

Prices for **recommendations** (usually farmers and homeowners) is included with this version of The Field Report.

For the most current forms, price lists and information please visit our website:

http://www.ndsu.edu/soils/services/soil_testing_lab/

Minor changes to the pricelist can occur at any time without notice. There is a version number that can be found on the price lists. The current version is 13.1 (Fiscal Year 2013 draft 1) Version 13 will remain the same unless we change the prices across the board. For minor additions/subtractions please look at the draft number.

Reminder: If receiving your results through email for the first time, please add NDSU.STL@ndsu.edu to your safe sender list to ensure delivery. The Soil Testing Lab is not responsible for deliveries to inboxes that are full or blocked. We would be more than willing to mail a hard copy or resend your results; just give us a call. We also have the ability to send results to multiple email addresses. (for example, home and work address). Just note this information on the soil information sheet.

The Soil and Water Lab has merged with the Soil Testing Lab as of July 1, 2012.

Services and Prices can now be found under the Soil Testing Lab Price list and "Misc. Testing" on our website.

Irrigation water samples submitted will be handled and processed the same as in the past.

For questions please call

701-231-8942

The Field Report

NDSU Soil Testing Lab

Frequently Asked Question:

Why do we only test some nutrients on the 0-6” samples but not the 6-24”?

Some nutrients are mobile within the soil profile while most are not. The elements which do not move much in the soil are usually concentrated in the top six inches of the soil profile. The elements which leach such as nitrate-nitrogen, sulfate-sulfur, and chloride have a negative charge and are not attached to the soil particles so they are free to move with the water in the soil.

The soil tests are calibrated using a 24” sample for elements which are mobile in the soil and six inches for elements which are not. Thus for an accurate assessment of the fertility of a field, the soil testing laboratory needs a separate soil sample from the 0-6” depth and a second sample from the 6-24”or 0-24” of the field. The analysis of the immobile nutrients will be performed on the 0-6” sample and the mobile elements on the 0-6” as well as the 6-24” sample. The results of the 0-6” and 6-24” samples will then be totaled.

Analyzing the 0-24” sample for the immobile nutrients will result in nutrient levels which are lower than they actually are because the levels in the 6-24” layer will dilute the nutrient and result in a soil test value that is low. Testing for nitrate-nitrogen on a 0-6” sample is risky because much of the nitrate can be located below the 6” depth which would be missed.

Larry Swenson

NDSU Soil Testing Lab Manager

NDSU NORTH DAKOTA STATE UNIVERSITY



Soil Health | Land Management | June 2012

Personnel Hired

Dr. Ann-Marie Fortuna | Research Soil Health Assistant Professor
NDSU Soil Science Department, Fargo
Starting July 15, 2012
Dr. Fortuna received her PhD (2001) in Soil Science from Michigan State, and has been an assistant professor at Washington State for the past four years. She has been awarded over $6.8 million in grants and published 16 peer-reviewed journal articles.
Her research at WSU integrated soil health, nutrient cycling, long-term ecosystems management, and microbiology; improving soil quality and managing nutrient efficiency.

Dr. Abbey Wick | Extension Soil Health Assistant Professor
NDSU Soil Science Department, Fargo
Starting July 15, 2012
Dr. Wick received her PhD in 2007 from University of Wyoming and has worked at Virginia Tech since 2008. She has 10 peer-reviewed publications, 12 outreach publications, and $279,000 in funded grants.
Dr. Wick brings extensive experience in working with landowners and industry on issues ranging from soil fertility and physical limitations of soils on crop production to best management practices for reclaiming mine lands.

Chris Augustin, M.S. | Area Extension Soil Health
North Central REC, Minot
Started March 19, 2012
Mr. Augustin received both his MS (2009) and BS (2005) from NDSU. His MS research emphasized the relationships between carbon sequestration and soil texture. Most recently, Mr. Augustin has worked for NDSU at the Carrington REC. He has significant extension experience on various aspects of nutrient management and soil health.

Naeem Kalwar, M.S. | Area Extension Soil Health
Langdon REC
Started March 12, 2012
Mr. Karlwar received his MS (2010) in Land Resource Science from the University of Guelph in Ontario. He comes to NDSU Extension with a wealth of experiences in (i) preventing and mitigating soil salinity and sodicity, (ii) applying practices to improve soil health and management, (iii) extension outreach, and (iv) project management.

Jasper Teboh, Ph.D. | Soil Scientist
Carrington REC
Started April 1, 2012
Dr. Teboh graduated from NDSU in 2007 with a PhD in Soil Science and worked as a Research Associate in the School of Plant, Environmental and Soil Sciences at Louisiana State University from 2007 and 2012. Dr. Teboh returns to NDSU with rich working experience in soil fertility and nutrient management research.

Ben Geaumont, Ph.D. | Wildlife & Range Science Research Assistant Professor
Hettinger REC
Started July 11, 2011
Dr. Geaumont received his PhD in 2009 from NDSU and worked as a post-doctorate research fellow at the Hettinger REC from 2009 to 2011. He has 2 peer-reviewed, 4 outreach publications, and PI or co-PI on funded grants totaling $5.6 million. His research focuses on the interactions between wildlife and agriculture and the thresholds between the two.

Support Staff Hires

Hettinger REC: Jeffery Stackhouse, M.S., Wildlife and Rangeland Research Technician, June 1, 2012.
Central Grasslands REC, Streeter: Matthew Danzl, Forage Agronomy Research Specialist
Agricultural & Biosystems Engineering, Fargo: Md Saidul Borhan, Ph.D. Soil Health Technician, Dec. 7, 2011
School of Natural Resource Sciences, Fargo: Position is still open
Carrington REC: Position is still open
Williston REC: Position is still open

NDSU Personnel have been awarded over $5.3 Million to work on soil health & land management related topics. Another $6.07 Million has been submitted.

David Franzen and **Abbey Wick.** 2012-2015. Eastern North Dakota Soil Salinity Specialist- Years Three, Four and Five. EPA 319. $191,921

Hargiss, C., J. Norland, E. DeKeyser, T. DeSutter, and F. Casey. 2012-2014. Estimating the Impact to Wetlands in Western North Dakota from Dust and Road Use Increases Due to Energy Development. ND Dept. of Health. $97,599

Hopkins, D., and D. Steele. 2011-2012. Impacts of Climate and Erosion on Soil Change: Implications for North Dakota Soil Quality. USDA-NRCS National Soil Survey Center. $40,000

Maddock, R., K. Sedivec, R. Littlefield, C. Schauer, **B. Geaumont**, G. Halvorson, M. Monoh, P. Johnson, K. Olson, R. Gates, M. Liebig, D. Archer, J. Hendrickson, J. Garden-Robinson, and L. Xu. 2011-2016. Renewal on the Standing Rock Sioux Reservation: Land, Cattle, Beef, and People. USDA NIFA-AFRI. $5,000,000

Jia, X., DeSutter, T. M., Scherer, T. F., and Steele, D. D. 2012-2013. Subirrigation with high sodium adsorption ratio groundwater and its effect on soil and water quality. ND State Water Commission. $7,225

Soil Health Advisory Group formed

Mission: The mission of the Soil Health Advisory Group is to help guide and prioritize soil health research and extension efforts directed by NDSU; to provide networking opportunities among NDSU, state and federal agencies, retail partners, and commodity-grower groups; and to help increase the awareness and importance of soils to North Dakota's vitality. By providing the public and scientific communities evidence for adaption to changing soil environments, North Dakota's land managers will be better suited to adapt to changes in climate, cropping systems, and environmental situations.

***The purpose*:** Help land managers adapt to changing soil conditions

***The business*:** Networking, research, education

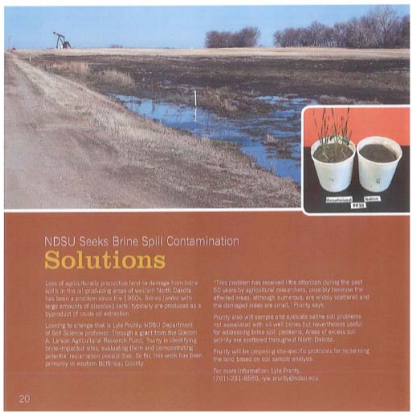
***The values*:** Good soil health is needed to maintain or improve North Dakota's economic prosperity and to minimize environmental impacts caused by land management practices

Recent Features on Soil Health | Land Management

Prairie Public's ***"Salt of the Earth"*:** Features NDSU Soil Science faculty and its graduates explaining soil salinity in ND.

KX News' story **"Eye on Agriculture: Saline Soil"**

Features Soil Health staff, Chris Augustin talking about managing soil salinity.



Brine Spill Contamination

NDSU Soil Science personnel worked on the issue of land that was affected by oil field brine spills

Soil Health Beyond North Dakota

Mn NPR featured a story on Guard troops receiving a soils short course with NDSU's Dr. Jay Goos. Guard members will be deployed to Afghanistan to rebuild its agriculture.

SOIL TEST CHARGES

North Dakota State University Soil Testing Laboratory

Item	Soil Depth	Charges
Nitrate-Nitrogen - NO_3-N	0-24"	$2.50
	24"-48"	$2.50
	0-6" & 0-24"	$5.00
	0-6" & 6-24"	$5.00
	0-6"	$2.50
Phosphorus (P) - Olsen procedure	0-6"	$2.65
Potassium (K)	0-6"	$2.65
pH (1:1 water)	per depth	$1.65
SMP Buffer pH	-	$2.10
Soluble Salts (EC) (1:1 water)	per depth	$1.65
Organic Matter (Loss of Ignition)	0-6"	$2.50
Sulfate-Sulfur - SO_4-S	per depth	$2.50
Chloride (Cl)	per depth	$3.00
Zinc (Zn)	0-6"	$2.75
Copper (Cu)	0-6"	$2.75
Manganese (Mn)	0-6"	$2.75
Iron (Fe)	0-6"	$2.75
Sodium (Na)	0-6"	$2.65
Calcium (Ca)	0-6"	$2.65
Magnesium (Mg)	0-6"	$2.65
Calcium Carbonate Equivalent (CCE) $CaCO_3$ Equivalent	0-6"	$5.75
Cation Exchange Capacity (CEC) (summation)	-	$15.00
Cation Exchange Capacity (Na saturation, NH4 extraction)	-	$25.00
Saturated Paste Package: Sodium Absorption Ratio (SAR), Soluble Salts (EC), Saturation %, and pH	-	$17.00
Hydrometer Mechanical Analysis (Soil Texture)	-	$25.00
Manure Analysis- per sample		
Routine Analysis	-	$30.00
% Solids, %N, $\%P_2O_5$, $\%K_2O$		
Routine Analysis + NO_3-N, NH_4-N	-	$40.00
Complete Analysis	-	$60.00
% Solids, %N, $\%P_2O_5$, $\%K_2O$ NO_3-N, NH_4-N, pH, EC Ca, Mg, Na, Zn, Cu, Fe, Mn,		

Water Analysis		
Water Quality Analysis (Total Package)	-	$35.00
Package includes: SAR, TDS, Hardness, pH, Soluble Salts (EC), Calcium, Magnesium, Sodium, Potassium, Alkalinity (carbonates and bicarbonates), and Chloride		
Water tests - offered individually:		
Nitrate-Nitrogen - NO_3-N	-	$2.50
Phosphorus (P)	-	$2.65
Potassium (K)	-	$2.65
Calcium (Ca)	-	$1.65
Magnesium (Mg)	-	$1.65
Sodium (Na)	-	$2.60
Chloride (Cl)	-	$3.00
pH	-	$1.65
Soluble Salts (EC)	-	$1.65
Alkalinity (carbonates and bicarbonates)	-	$2.50
Miscellaneous:		
Greenhouse Growth Media		$25.00
Lawn and Garden Package		$18.00
Hand Ground Samples-fee will be added if inadequate sample is submitted	per sample	$0.50
Prices subject to change without notice. For most current version visit our website: http://www.ndsu.edu/soils/services/soil_testing_lab/		