

Steele County

Ag Alert

Issue 1 – May 13th, 2014

Alicia Harstad, Steele County Extension Agent

Office: 701-524-2253

Cell: 701-331-1778

e-mail: alicia.harstad@ndsu.edu



Subscription

The growing season is finally upon us! During the growing season, the Extension office will be publishing the weekly AG ALERT newsletter that contains up-to-date Ag information, as well as notices of upcoming meetings in the county and region. The AG ALERT can be received by mail for a \$5 subscription fee or can be received for FREE by e-mail. It will be produced weekly from now until September and monthly throughout the winter. If you would like to subscribe, please return the enclosed subscription form with the \$5 fee to the Steele County Extension office (PO Box 316, Finley, ND 58230) for a mailed copy or e-mail Tammy Doll at tammy.doll@ndsu.edu for an e-mailed copy.

New North Dakota Corn Nitrogen Calculator

By: Dave Franzen, NDSU Extension Soil Specialist

After 5 years of field N rate trials, with funding from the North Dakota Corn Council, the International Plant Nutrition Institute and Pioneer Hi-Bred, Int., the N recommendations for corn in North Dakota have been revised and the North Dakota Corn Nitrogen Calculator has been posted online at www.ndsu.edu/pubweb/soils/corn/.

The new N recommendations are the end product of yield and N rate analysis from 77 North Dakota sites, 9 sites from southern Manitoba, 21 sites from NW Minnesota, and 6 sites from northern South Dakota. The North Dakota sites were established and taken to yield west of the Missouri river by Roger Ashley, now retired SW region Extension Agronomist. The eastern ND sites were administered by myself, with assistance from Greg Endres and Jasper Teboh at Carrington, and my graduate students Lakesh Sharma and Honggang Bu, with help from undergraduate students Brad Schmidt and Eric Schultz. The programming for the Calculator was developed by Matt Franzen, Computer Science senior, NDSU, and the Calculator was posted with assistance from Nate Derby, technician, NDSU Soil Science.

Data from Minnesota was provided by Dr. John Lamb, University of Minnesota, St. Paul. Data from Manitoba was provided by Dr. John Heard, Manitoba Ag; data from South Dakota was provided by Dr. Ron Gelderman. Data for the irrigated corn came from work at Oakes, ND by Dr. Ray Knighton and his then technician, Nate Derby and also data from Walt Albus from the Oakes area. I appreciate all of the assistance with funding, data collection, data provided and the help with programming and posting.

The new recommendations are region specific, with the regions designated as west-river and eastern North Dakota. In eastern North Dakota, the next designation is long-term no-till (6 years or more continuous no-till/one-pass seeding) or conventional till. If conventional till, the next division is high clay soils (Bearden, Fargo, Viking, anything with about 28% or more clay) and 'medium-textured' soils, which are anything not high clay. Once the grower identifies the textural class, the decision is whether field has been capable of achieving greater than 160 bushels per acre. If so, choosing this category would be the next step. If not, then choosing less than 160 bushels per acre would be the option.

The recommendation value from the categories are based on the yield response to total available N, including previous crop credit and soil test nitrate-N to 2 feet in depth, and also any credit from organic matter 6% or greater. But the recommendation value also depends on corn price and N cost. The value is the result of an 'economic production function', similar to that used in the North Dakota Spring Wheat and Durum Calculator and also the formulas used in Illinois, Minnesota, Iowa, Wisconsin and other Corn Belt states relating yield response and economics.

If within the high clay and medium textured soils in the lower productivity category is chosen, the selected results state that the value is only a preplant suggestion, but an additional side-dress application is very strongly recommended to help the grower achieve the greatest yield. There is no preplant rate practical that would move the grower on these soils into a higher yield category in a wet spring.

Later this summer, a Corn Fertility circular will be published that will explain the different categories in detail. Also, algorithms to direct side-dress rate using active-optical ground-based sensors will also be published.

Start Actively Managing for Salinity

By: Abbey Wick, NDSU Extension Soil Health Specialist

Salinity is rearing its ugly head this spring as a result of a relatively high water table from all the rain last fall, limited flushing of salts as a result of low snow cover/melting and high evaporation from fall tillage and lack of soil residue since most of it blew across fields this winter. A high water table brings the water that carries the salts closer to the surface, less snow cover means less flushing of salts in the spring and high evaporation drives a process called capillary action that moves the water from the water table up towards the surface. Additionally, with as much soil erosion as there was this winter, the soluble salts below the surface now have less soil to move up through to reach the rooting zone of crops.

Tillage seems like a good option to make a salt-affected, "white" soil turn "black" again and get rid of the problem. But, this practice actually accelerates salt movement towards the surface by increasing evaporation while the water table remains constant. When we talk about actively managing salinity, we often say, "dry the soils down." To do this, you need to reduce evaporation and lower the water table.



Two things I recommend you do this spring:

1. Collect soil samples – you need to "get your number" so you have a starting point to develop a long-term management plan. Do this from a saline area that you are concerned about and also a productive area from your field. Keep the samples separate and send them off to a soil testing lab to be run for Electrical Conductivity (aka Soluble Salts). You cannot begin to effectively manage an area until you

know what your salt levels are. And having a comparison from a salt-affected area versus a highly productive area will help you understand what good and bad salt levels are.

2. Avoid tilling saline areas – this is something you can do even without “getting your number”. Tilling increases evaporation and will bring more salts to the surface. Chances are good that nothing is growing in those saline areas anyways, so you can plant directly into them without the tillage. I have had conversations with a few producers who are doing this and it is working well for them.

Do these two things in the short-term and then work on developing a long-term plan.

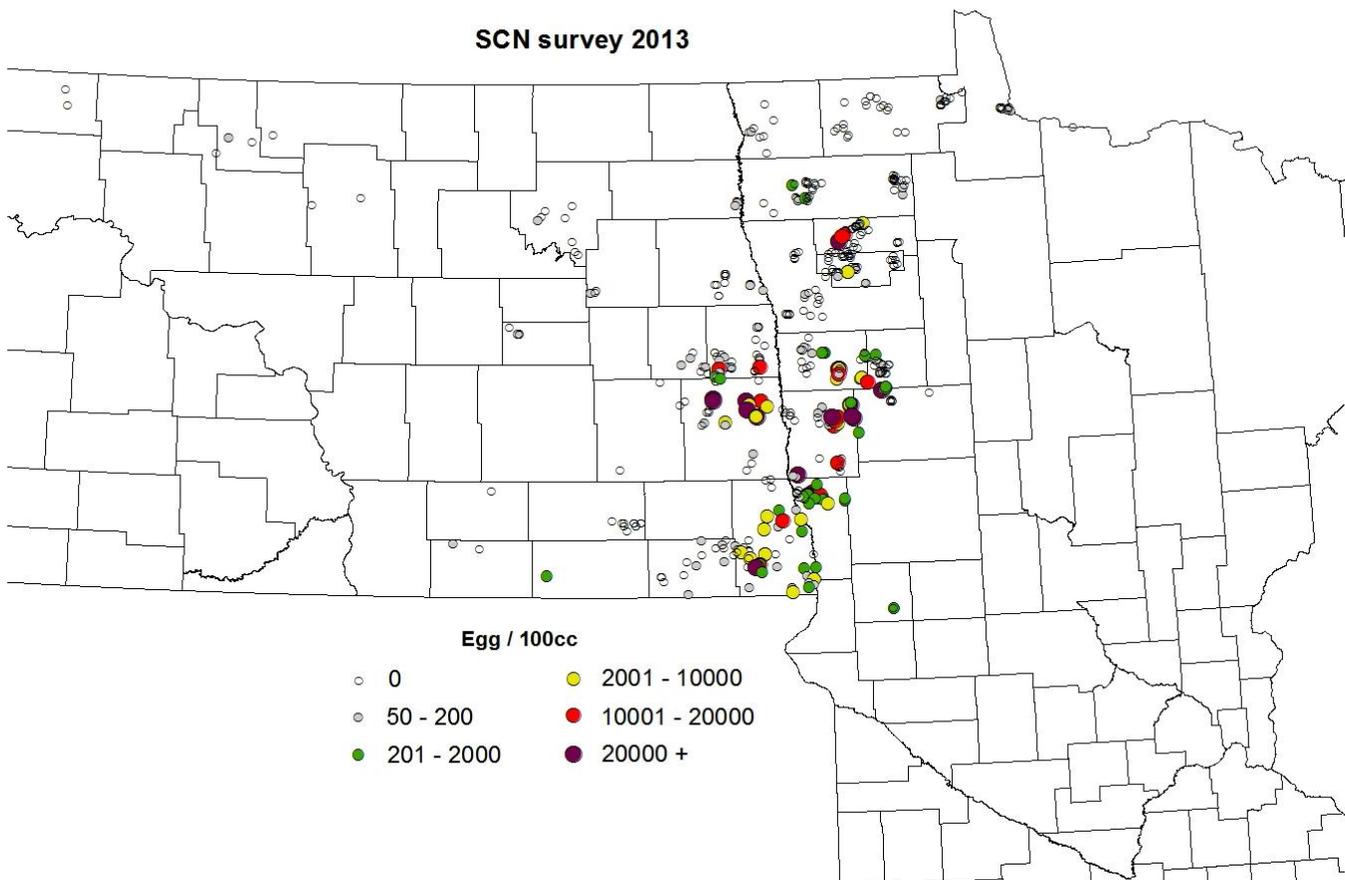
Soybean Cyst Nematode Update

By Sam Markell, NDSU Extension Plant Pathologist and Phillip Glogoza, Extension Educator

The results from the 2013 fall SCN sampling project are in. This project was a joint effort coordinated by the NDSU and U of MN Extension Services and was funded by the North Dakota Soybean Council and the Minnesota Soybean Research and Promotion Council.

- *How did the sampling project work?*

This was a grower-based effort. Growers, consultants and Extension agents were given SCN sampling bags at SCN-based field days and Extension offices; they sampled for SCN, sent the bags into the lab for analysis, and got the results back. Dr. Glogoza and myself were given the data on egg level and the geographic locations where they occurred. We constructed a map below:



- *What do these numbers mean?*

Eggs/100cc is the standard unit used to measure the amount of SCN in a 100cc soil sample. This is determined by microscopic examination in a laboratory.

- 0 = No eggs were found
- 50-200 eggs/100cc = This means that a very low level of eggs were found. This may indicate that SCN is present, but, it may also be a 'false' positive (explanation below).
- 201-2000 eggs/100cc = Low level of SCN.
- 2001-10,000 eggs/100cc = A moderate level of SCN.
- 10,001 eggs/100cc = A high level of SCN.
- 20,000 eggs/100cc + = A very high level of SCN.

- *How do we interpret these results?*

First, the majority of the samples from the survey came back negative. SCN is spreading, but it is not in every field, yet. Importantly, much of this was targeted sampling, meaning samples were trying to find the hot spots. As a region, we are generally in a good place to manage the problem before it becomes a major problem.

Second, there are many 'low-level positives (50-200). Some of these may be real, but some are likely false positives. In the nematode extraction process used at the laboratories, nematode eggs are counted. However, because you can't count through much of a soil sample using a microscope, a multiplier of 50 is used. An egg count of 50 really means only ONE egg was observed, 100 means TWO eggs were observed, and so on. This introduces room for error. Additionally, there isn't any way to be sure that the egg is from SCN, perhaps those ONE or TWO eggs could be from another nematode, or something else, or maybe not even an egg. So, we recommend that these low level positives should be viewed with some skepticism. If you have a low level positive in your field, we suggest you do more sampling. Neither of us wants everyone in Renville County, ND or Lake of The Woods County, MN panicking because of a low level positive. We would however, recommend sampling.

Third, there are some alarmingly high numbers, particularly in the Southern Red River Valley. Fields with egg levels in excess of 10,000 egg/100cc will definitely experience yield loss (at least in spots of the field) if SCN is not managed, and may experience yield loss even if it is managed.

Lastly, there are virtually no samples taken from the Northern Red River Valley. We are basically 'operating blind' in that area. Previous work at NDSU has shown confirmations in Pembina County, ND, and only low levels in the northern most counties of Minnesota by UMN Extension.

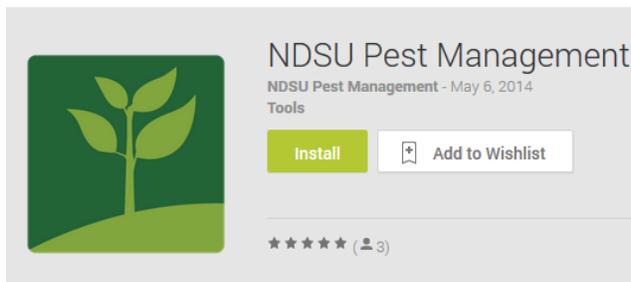
Take home message.

We have SCN all around us, and its spreading. This disease can cause major yield loss, but, we can manage this disease. The first step is to sample to determine if you have it.

"Thank You" to all the growers, consultants and agents who helped with this effort. Without your efforts it would not be possible. Similarly, we thank the North Dakota Soybean Council and the Minnesota Soybean Research and Promotion Council for the funding to do this. More information about SCN can be found at: <http://www.extension.umn.edu/agriculture/soybean/soybean-cyst-nematode/>

NDSU Pest Management App

The long awaited NDSU Pest Management app is now available for smartphones and tablets in the Google Play and Apple online stores! The NDSU Pest Management app is a combination of the NDSU weed guide, insecticide guide, and fungicide guide all put together into one app. It is very user friendly and easy to use. When you are out scouting, a list of labeled pesticides for a target pest is just a few clicks away. It's as easy as selecting the crop that is growing and the target pest. To get more information about a labeled pesticide, just click on a pesticide you are interested in and more information such as active ingredient, mode of action, rates and when to apply will be available.



The initial download of this app will take longer to download than most apps because much of the information for this app will be stored on your device. Therefore, the device only needs internet to update the NDSU Pest Management app and doesn't need internet to run it. This is a great advantage of this app because if you are out in the field where you don't have internet access because of poor cell phone reception, you will still be able to use the app because it doesn't require internet to run.

Don't Forget the PRE

By: Rich Zollinger, NDSU Extension Weed Specialist

Following the rapid adoption of glyphosate resistant crops in North Dakota the use of foundation/soil-applied herbicides dropped to less than 10% of the acres. The latest North Dakota Pesticide Use Survey shows foundation/soil applied herbicide use is still very low in crops where glyphosate (Roundup Ready) and glufosinate (Liberty) resistant crops are used. It is not difficult to observe the result of overuse of one herbicide – the number and area covered of glyphosate resistant weeds have increased. To reduce the risk of developing herbicide-resistant weeds and promote good land stewardship the use of effective foundation/soil-applied herbicide in all crops are recommended. Consider the following reasons:

- Maximize profits by maintaining maximum crop yield.
- Reduce early-season weed competition.
- Provide residual control of grass and broadleaf weeds to reduce subsequent flushes through spring and early summer.
- Lengthen the time before the first postemergence herbicide application is required.
- Increase the use of alternative herbicide mechanisms of action, since many soil-applied herbicides do not control emerged weeds when applied postemergence.
- Reduce the number of plants present at the time of the postemergence application thereby reducing the likelihood of selecting for herbicide-resistant biotypes to postemergence herbicides.
- Reduce the size of weeds present at the time of the postemergence herbicide application.



AG ALERT
NDSU Extension Service Steele County
P.O. Box 316
Finley, ND 58230
(701) 524-2253-Office
(701) 331-1778-Cell
"NDSU is an Equal Opportunity Institution"

Subscription Form

If you would like to receive the Ag Alert by mail, please detach this form and return it to the Steele County Extension office (PO Box 316, Finley, ND 58230) along with your \$5 payment. If you would like to receive the Ag Alert by e-mail, either return this form to the Extension office indicating so or e-mail Tammy Doll at tammy.doll@ndsu.edu with the information below. The Ag Alert by e-mail is FREE. Thank you.

Name _____

Address _____

Phone (home) _____ (cell) _____

Email _____

(Please indicate if you would like to receive Ag Alert by email)

North Dakota State University does not discriminate on the basis of age, color, disability, gender identity, marital status, national origin, public assistance status, sex, sexual orientation, status as a U.S. veteran, race or religion. Direct inquiries to the Vice President for Equity, Diversity and Global Outreach, 205 Old Main, (701) 231-7708. This publication will be made available in alternative format upon request to people with disabilities 701-524-2253.