

AGVISE

LABORATORIES

SUMMER 2011

SOUTHERN TRENDS

What a difference a year can make. This growing season is quite a bit more of a struggle than last year. Delayed planting and many acres drowned out on the downside, but near record crop prices on the upside! Last year the fall sampling/harvest season went for over a month without a break, resulting in a record year for sample numbers at both AGVISE soil testing laboratories. Our Benson, MN lab, has made changes to increase daily lab capacity. We've increased our capacity by adding more lab equipment and more personnel, so we can offer good turn around, even during the crunch of fall testing.

The automatic topsoil soil sampler, the Wintex1000, has been working out great for our customers.

In the spring of 2010, AGVISE began selling this automated topsoil sampler. Many customers saw how this equipment could greatly increase their sampling efficiency and bought the Wintex 1000 last year. Many more customers have purchased Wintex units this year and are very happy with how it performs. The Wintex is a great tool to reduce the labor of soil sampling.

The word is out that there is a 2-depth, 24" automatic sampler (Wintex2000) in development. AGVISE will be the first to demo this new unit to our customers. We thought there would be a unit to demo this summer, but the manufacturer has not been able to provide a unit for testing. I imagine it'll be on the pricey side, but then

tools that greatly increase your sampling efficiency will pay for themselves very quickly.

I used the Wintex1000 unit for my soil sampling demo projects the past two years and it works great. One of my projects this year is a sampling date comparison for early summer sampling in the soybean crop compared to post-harvest soil sampling. I will be reporting on this project at meetings this winter.



RICHARD JENNY
AGRONOMIST/CCA

Special Offer on 24" Sampling Systems

AGVISE is offering special pricing on the first 25 soil sampling systems sold this fall. This special price is on our 24" electric/hydraulic soil sampling system. AGVISE will credit \$200 of free laboratory analysis to your account with the purchase of one \$2650.00 sampling system. This offer is good for the first 25 sampling units only sold this fall. You can view all of the components of this sampling system on our web site. Just go to www.agvise.com and click on "Products and Equipment" then "Hydraulic Sampling Equipment"

Last fall we sold all of the specially priced systems before September 15. If you need a new sampling system or just want to improve the equipment you are currently using, don't wait too long.

INSIDE

AGVISOR Lite.....	2
Online Sample Submission	2
Soil Fertility Seminars	2
Postcards to Promote Testing	3
Tissue Trivia	3
Precision Soil Testing.....	4
Soil Testing Unseeded Acres.....	5
Northern Trends.....	6
President's Corner.....	6

AGVISOR Lite!

No, AGVISE is not getting into the beer business! AGVISOR Lite is an online program we are working on for the present and for the future. AGVISOR Lite will eventually replace the AGVISOR Gold program. For the present, we are working on having the AGVISOR Lite program provide some basic functions to our customers.

This fall, the AGVISOR Lite program on our web site (www.agvise.com) will have these functions up and running:

1. View pdf of soil test reports
2. Print soil test reports
3. Save pdf of report for emailing to growers
4. Change the crop choice
5. Change the yield goal
6. Change the fertilizer placement type
7. Export all of the pertinent test data and information as a csv file



In the future, we will add the rest of the functionality of the AGVISOR Gold program to the web based AGVISOR Lite program. If you have some ideas for the AGVISOR Lite program, now is the time to write them down and email them to Richard Jenny (richardj@agvise.com) or John Lee at (johntlee@polarcomm.com). We can't guarantee that all of your suggestions will be incorporated into the AGVISOR Lite program, but we want customer input as this program is developed.

AGVISE Soil Fertility Seminar 2012 Dates Set

We have had several requests from customers to let them know as soon as we have solid dates for our Soil Fertility seminars next January. The dates and locations for our 2012 Soil Fertility Seminars are listed below. We are in the process of confirming speakers and topics for these meetings. Note the change in location to Granite Falls for the southern Minnesota seminar.

Tuesday, January 3, 2012 – Prairie's Edge Casino, Granite Falls, MN

**Wednesday, January 4, 2012
– Watertown Events Center,
Watertown, SD**

Thursday, January 5, 2012 – Alerus Center, Grand Forks, ND

Online Soil Sample Submission—You Have to Try This!

AGVISE customers have been asking for online sample submission for years and now it is a reality. A few AGVISE customers have been testing the new "Online" soil sample submission program for about a year now. We think every customer should give it a try this fall.

We've developed this "Online" sample submission process instead of the paper based system used for over 35 years. With the online soil sample submission process, you will print out your barcode reference stickers to place on your soil sample bags. The online program will print the bar-coded reference number stickers on a form provided by AGVISE at no charge. The same "Online" sticker form will be used for Grid or Zone samples, regular composite field samples and even SCN samples. You will not need the various paper

forms you used in the past. By using the online system, you'll benefit by inputting your own grower and field names and information one time and use that information in future years. This database of growers and fields should be correct in every detail since the customer enters this information.

Customer feedback on the "Online" submission system has been very good. They really like having control over the data entry for grower names, field information etc. Every customer who has been helping us test the online system likes it and will keep sending their samples using the online system. So far in 2011, 55% of all samples submitted to AGVISE used the "Online" system. Customers who send samples to the Benson lab apparently really like the

"Online" system, with over 70% of samples coming through the "Online" system. *Please NOTE: A laser printer is required to use the "Online" sample submission system.* Inkjet printers are not allowed with the online system because the ink just smears off the label and becomes unreadable by the time the samples arrive at the lab.

If you want to try the "Online" system, please give us a call and order some "Online" forms (100 forms /pack up to 8 samples per sheet). Once you get the forms, give Richard Jenny or John Lee a call. They will be able to answer any questions you have, and even walk you through the "Online" system by logging onto your computer and showing you how the program works.

Postcards to Promote Soil Testing!

This is the 8th year that AGVISE has provided customers with free “Post Card Mailers” to send to their growers to promote soil testing. In 2010, AGVISE sent over 10,000 post cards to our customers. These post cards are used to direct grower’s attention to soil testing, right after harvest begins. By using these post cards, customers tell us they are able to start testing earlier and they end up soil testing more fields for their growers.

AGVISE will customize the message on your post cards so you can tell the growers exactly what you want! Here is an example of what one customer had us print on his post cards last year:



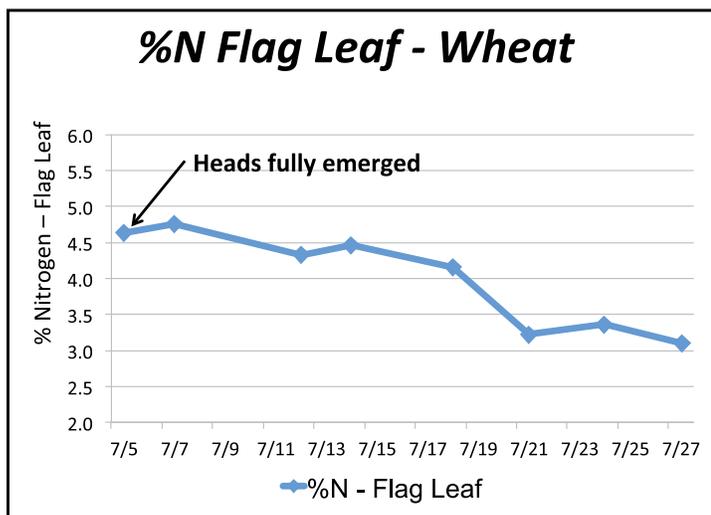
“Give our Agronomy Staff a call today to sign up for soil testing (320-123-4567). Soil testing is the first step towards a profitable crop in 2012!”

Once you receive your post cards with the customized message, all you have to do is write the growers name and address on the post card, add a stamp and put them in the mail. These post cards also fit into most statement envelopes so you can include it with the statements if you want.

Any AGVISE customer who tested more than 50 samples last year should receive a mailing with an example of the free post card. All you have to do is write the message you want on the post card on the form you received and fax or mail it back to us. You can also request our colorful poster, which promotes soil testing. If you did not receive this mailing or have questions on how to use the post cards, please give John Lee or Richard Jenny a call.

Tissue Trivia—Timing is Everything!

What happens to the concentration of Nitrogen in wheat flag leaves after heading? How important do you think it is to collect flag leaf tissue samples soon after heads emerge? The figure shows how the %N in wheat flag leaves



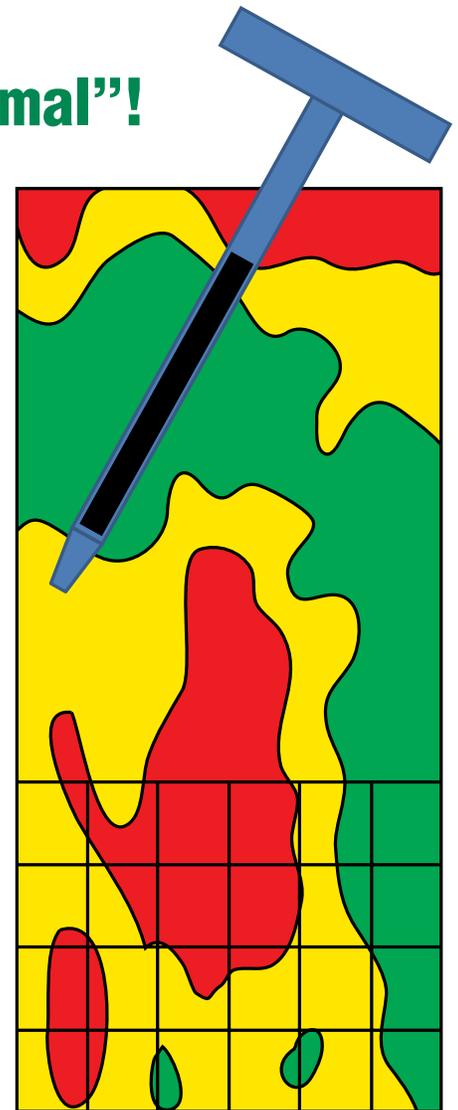
changes after heading. These test results are tissue samples from a wheat field near Hatton ND. As you can see, the %N in the flag leaf was pretty stable until about 10-12 days after heads were emerged. Tissue samples collected in this time period will give pretty consistent results.

If you wait too long to collect a flag leaf sample the %N test results will be lower for the flag leaf and the interpretation will not be correct. Samples taken later reflect the start of N being translocation from the leaves into the grain. Be sure to collect flag leaf samples early to get the best data for making late season N decisions.

Precision Soil Testing—The New “Normal”!

I think “It” has arrived as the **new normal!** More and more producers, agronomists and dealers are incorporating several types of precision practices into their businesses. These include: auto-steer, variable-rate seeding, variable-rate nutrient application, GPS mapping, electronic data collection, remote imagery and grid or zone soil sampling. These practices are the new normal! Things have really changed for soil testing in the past 5 years. Before 2006, about 30% of soil samples tested by AGVISE were precision samples (grid or zone). Since 2006, that has grown to over 60% and is still increasing.

Both grid sampling (usually 2.5 acre topsoil samples) and zone sampling (productivity management zones of various sizes) are becoming more commonplace than ever. Grid sampling is a big part of fertilizer management for immobile nutrients (P, K, Zn and liming). Plus a higher percentage of these grid samples are being taken in May, June and early July in growing soybeans to gather information for the fall fertilization of the upcoming corn crop. Zone sampling (usually topsoil plus subsoil samples) is mainly targeted for nitrogen management and variable-rate seeding and is based upon the “productivity potential” of each zone. These zones are categorized in ranges from high productivity to low productivity and are treated separately in management of nutrients and seed. Some agronomists are even combining grids and zones where they will grid soil sample a field for P, K, Zn and lime applications and then develop zones for managing nitrogen and plant populations. Who knows what the new “Normal” for soil testing will be 5 years from now?



President’s Corner Cont...

over the last few decades. Yields that were once considered good are now in the disaster category. 20 years ago farmers west of Northwood considered 15 to 20 bushel soybeans good. Now 30 to 40 is average. High yields require more nutrients, sulfur included.

Zone and grid sampling has also increased the awareness of the need for sulfur applications. The level of sulfate sulfur in a field can easily vary 100 to 1000 fold. A composite soil sample from a field with this type of variability will mask the need for sulfur. One or two soil cores from the high testing part of the field will bias the test results on the high side. Zone sampling a field for sulfur will often point out one area of the field has very high levels of sulfur while all other zones will require a sulfur application.

The need for sulfur is not going to go away. Sulfur will have to be included in a growers fertility plan in the same manner as nitrogen and phosphorus are included now. The question now is will industry have enough sulfur on hand to meet the needs of our growers?

Northern Notes Cont...

combine include:

1. Sampling prior to fall tillage results in a more consistent 0-6” core, so you get the best samples for testing P, K, Zn and other nutrients tested on the topsoil.
2. Sampling right after harvest guarantees fields will get tested and not missed due to weather problems later in the fall.
3. Regrowth of volunteer grain will not hide available nitrogen. Early sampling will show the nitrate that will be available for next year’s crop before the volunteer grain can remove nitrate from the profile.

If you need to update your sampling equipment to handle wet soil conditions, please give AGVISE a call. We have a good supply of the Oversize Heavy Duty probe body and tip, designed for wet soil conditions.

Soil Testing Unseeded Acres

With millions of acres unseeded this year, there are many questions about when soil testing can start and what kind of soil test levels to expect. Soil testing unseeded acres can start in early August or as soon as a good quality soil sample can be collected. The microbial processes in these soils have been in high gear all summer, so we do not expect any large swings in the soil nitrate values through the fall. The level of nitrate in the soil profile depends on many environmental and management factors shown below:



Environmental Factors causing soil N levels to be different from field to field

- Leaching losses (well drained soils)
- Denitrification losses (heavy poorly drained soils)
- Weed control – (when was it done, how big did the weeds get)
- Tillage – (more tillage will result in higher N release from soil organic matter)
- Warm summer temperatures – (warmer summer temperatures will increase N mineralized from organic matter)

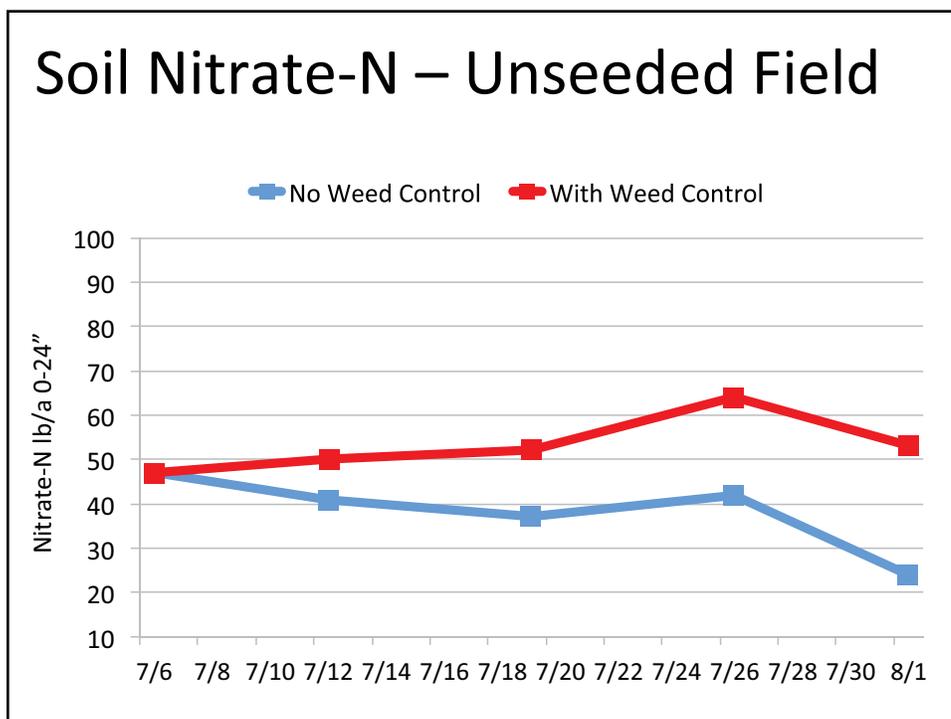
Management factors causing soil N levels to be different field to field

- Previous crop
- Past nitrogen fertilizer application (fall 2010?)

AGVISE started a demonstration project for unseeded acres early in July. Sampling sites were established in two fields in the Northwood ND area that did not get seeded this spring. Soil samples have been collected each week on these sites since early July. The figure shows how the soil nitrate level has been changing since early July on site one. This sampling site has one area where weeds have not been controlled by herbicides or tillage. An adjacent area is also sampled each week, where the grower continues with his normal practices, which includes weed control, tillage and eventually cover crop seeding. As you can see in the figure, the soil nitrate level where the weeds have not

been controlled is decreasing. The adjacent area, where the grower has applied one herbicide treatment and tilled the field one time, the nitrate level is slowly increasing. This is an indication that weeds do use nitrogen and that tilling the field will stimulate more nitrogen mineralization of soil organic matter.

Soil testing unseeded fields should begin as soon as a good quality soil sample can be collected after August 1. It is very important to have current soil test information to plan for the 2012 crop.



PRESIDENT'S CORNER

The number of plant samples tested by AGVISE has increased greatly over the past few years. This increase in plant tissue volume has provided us with an opportunity to summarize what nutrients appear to be lacking by the crops grown in the Northern plains. One of the nutrients that seems to be an issue in much of our area and on a broad spectrum of crops is sulfur.

There are probably a number of reasons why sulfur issues are showing up as a problem in many crops. The amount of sulfur deposited through rain fall deposition has dropped significantly over the last few years. EPA's web site indicates the amount of sulfur dioxide in the atmosphere has dropped by 76% between 1980 and 2009. Government regulations have required the removal of sulfur from motor fuels and power plants have been required to remove sulfur from smokestack emissions. The sulfur in these emissions once fell as free fertilizer to growing crops.

Another reason for the decline of available sulfur in the soil has been the excess precipitation that has occurred in our area of the county for the last few years. Sulfur is mobile in the soil and with excess precipitation, sulfur will leach out of the profile. It was also once thought that fields with at least 3% organic matter would never need sulfur. With lots of water carrying sulfur downward and with cool springs with little organic matter breakdown, this adage is no longer true.

Average crop yields have also increased greatly



BOB DEUTSCH
PRESIDENT
SOIL SCIENTIST/CCA

Continued on page 4

NORTHERN NOTES

Rain, Rain Go Away, Come Again Another Day! Here is a short hand version of the weather for the northern region so far this summer: Very cold, very wet with flooding, very hot spell in July, stay tuned for more wild weather! The 2011 growing season has been very challenging. Several million acres went unseeded in the Dakotas and the Canadian Prairie provinces. One of the challenges as we plan for 2012 will be getting good quality soil samples from these unseeded fields this fall. It is critical to have sampling equipment designed specifically for wet sticky soils and also to use a lubricant like W-D40.



JOHN LEE
SOIL SCIENTIST/CCA

AGVISE Heavy Duty Oversize (OS) probe and tip are designed specifically for wet sticky soil conditions. This probe and tip design allows wet soil to flow through the tip and probe body with much less plugging. Customers have been using this probe for three years now and it performs very well. Many customers in western areas have not had to deal with wet soil conditions before, so it is important to know AGVISE has equipment to handle this situation. Soil testing unseeded fields will begin in early August in many areas. This may be the best opportunity to get a good quality soil sample on unseeded fields.

As small grain harvest gets going, please remember that soil testing right behind the combine is a recommended practice by University Extension specialists like Dave Franzen at NDSU Fargo ND. Some of the advantages of sampling right behind the

Continued on page 4