Timely information for agriculture

AGVISE LABORATORIES

SPRING 2011

AGVISOR Lite Online

AGVISOR Gold is a software program provided to customers for handling soil test information (printing reports, changing fertilizer guidelines, exporting files to other programs, etc.). There is a yearly charge for having AGVISE employees install and support the AGVISOR program at each customer location. The AGVISOR program is currently a stand alone PC based program that is installed on your computer and does not need an internet connection to function.

Many customers do not use all of the functions of the AGVISOR program. In response to a recent customer survey, we are in the process of developing an "Online AGVISOR" program. We hope to have the first version up and running by this fall. The initial "Online AGVISOR" version will allow customers to view and print soil test reports at no charge. As the "Online AGVISOR" program is developed, we will be adding more functions such as being able to change fertilizer guidelines, crop choice, yield goal, etc. In the future, we will be adding additional features now only available from the AGVISOR Gold program installed on the computer hard drive.

New "Online" Soil Sample Submission System

AGVISE has been developing and testing a new "Online Soil Sample Submission" system for the past year. About 20 clients used it throughout the fall 2010 soil sampling season with very good results. These customers made suggestions and comments and we did our best to make these changes to further improve it.

The online sample submission will help you by simplifying and speed up your sample submission and greatly increase accuracy of your grower and field information. In the "online sample submission system" you will use the "Online sample form" to print the bar-coded reference number stickers to place on your sample bags. This same form will be used to print the bar-coded reference number stickers for conventional, grid, zone and SCN samples. **A laser printer is required! Inkjet printers will not work** because the ink doesn't dry and smears off the label. Once you have printed the bar-coded stickers, you will place these stickers on the sample bags just as you have done with the paper sample forms you used in the past. We expect many customers to try out this new "online sample submission" in the coming year. Please call Richard Jenny or John Lee for more details.

SOUTHERN TRENDS

RICHARD JENNY
AGRONOMIST/CCA

The growing season is nearly upon us and many growers are ready to fire-up their planters. Hopefully, the spring planting season will go as well as last fall's harvest season.

Our Benson lab is gearing up and will be ready to test more samples each day than ever before. We have added another chemist to our staff, more instruments and equipment and automated more procedures in the lab. The main push for soil sampling is in October and our goal is to provide turn-around times of 24-48 hours. With our additional staff and equipment, we will get the job done for our customers!

As you are aware, precision soil sampling has increased over the past 4-5 years. Now over 70% of all MN and 52% of all SD samples we test are "grid" or a "zone" sample. Also, many customer who only do "topsoil" sampling are switching some of their sampling from fall (post-harvest) to "Early Summer." They are now sampling in May and June, in planted, unfertilized soybean fields. This helps to avoid the fall rush and their growers are then prepared to apply fertilizer right after soybean harvest. Early summer sampling continues to grow and has been well accepted by growers, retailers and agronomists. Much of this early summer sampling is 2.5 acre grid sampling. The soil sampling conditions are usually good during this time frame, so they are getting a lot of work done in a short amount of time with high quality soil samples. If you want to discuss how this would fit into your sampling operation, please give me a call.

IN THIS ISSUE

Plant Tissue Analysis

Plant tissue nutrient analysis (plant analysis) by agronomists and crop consultants is increasing rapidly. Plant analysis is a tool that can be used during the growing season to determine if one or more nutrients are limiting plant growth. If plant analysis is done early in the season and a nutrient deficiency is detected, nutrients can be applied to correct the nutrient deficiency and reduce yield loss. Plant analysis is also commonly used to confirm that the fertilizer program being followed is doing the job.

Plant analysis involves collecting a specific plant part at different stages of growth (see figures). University research and interpretation of the plant analysis are based on a specific plant part at a specific stage of growth. If another plant part is collected, interpreting the results is difficult or impossible.

Plant samples must be handled properly to ensure the integrity of the sample. Plant samples should be placed into sample bags that are ventilated with holes to let moisture out. If plant samples are sealed in a plastic bag for shipping, they will be moldy when they arrive at the laboratory. Moldy plant samples will not provide accurate test results. If plant samples cannot be shipped the same day, they should be refrigerated. Additional information on collecting plant analysis samples can be viewed on our web site www.agvise.com

Turn around on plant samples in the laboratory is normally 24-48 hours during the growing season. Test results are posted to our web site at the end of each day of testing. AGVISE has increased the instrumentation, equipment and personnel needed for plant analysis at our Benson, MN and Northwood, ND laboratories.

Interpreting plant analysis requires additional information on the conditions in the field such as soil moisture status, rates, timing and placement of fertilizer etc. If plant analysis is being done to trouble shoot a “bad” area in the field, it is essential to collect a soil sample as well, even if you can only get a 0-6" sample. Having a plant sample and soil sample from the “bad” and an adjacent “good” area will greatly improve your chances of finding an answer to the problem! Additional information on “Interpreting a Plant Analysis Report” can be viewed on our web site, www.agvise.com.

Plant analysis should not be done when crops are under environmental stress. For example, if plants are experiencing drought stress, plant analysis results will be skewed. Nutrients like potassium will test low in drought stressed plants, even though the soil potassium level may be very high. In this situation, plant analysis should wait until a

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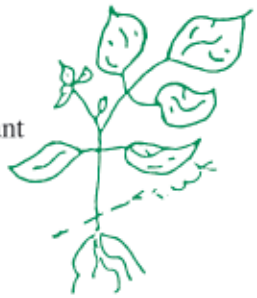
SOYBEANS
DRY BEANS



1st to 3rd trifoliate: Cut plant 1 inch above surface and submit entire plant. Sample 25 plants.

Early bloom to podset: Submit first fully developed trifoliate leaf from top. Sample 25 plants.

CORN

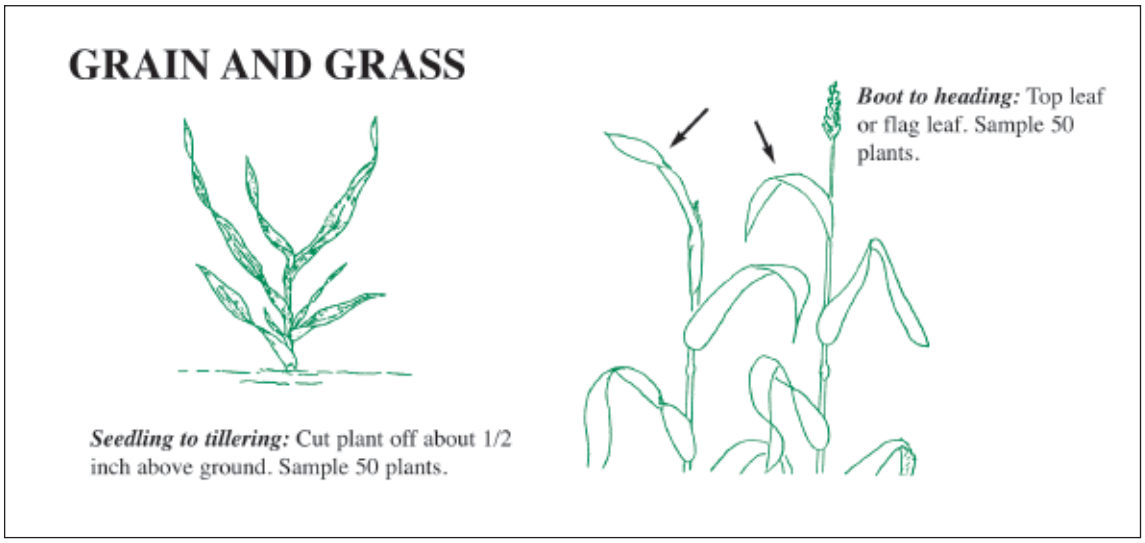
4 to 20 inches tall: Cut stalk off about 1/2 inch above ground level. Submit 20-25 whole plants.

>20 inches but prior to tasseling: Submit first fully developed leaf from top (first leaf below whorl). Cut leaf at its base where it joins sheath. Sample 20-25 plants.

Tasseling to pollination: Submit leaf below and opposite ear. Cut leaf at its base where it joins sheath. Sample 20-25 plants.

week after rainfall has been received and the plants are actively growing again. If the soil conditions are water logged, plant analysis should also be delayed until plants are actively growing.

Plant analysis is a good tool for evaluating the nutrient status of your crop. If you have questions on how plant tissue analysis can become part of your business, please give us a call.



Soybean Cyst Nematode (SCN) Moves North

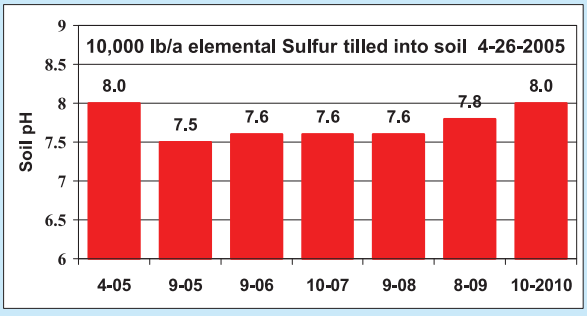
Soybean cyst nematodes are moving northward into eastern North Dakota and Northwest Minnesota. AGVISE tested about 700 SCN soil samples from these areas in 2010. 50-60% of these samples tested positive for SCN. This is a large increase in the number of samples tested for SCN compared to the previous years. SCN is becoming a major pest for soybean growers in northern areas. Please make sure your growers are aware that SCN is being found further north every year. You can view the complete 2010 SCN summary on our website (www.agvise.com). Fields can be sampled throughout the year to determine the "presence or absence" of SCN, with fall and spring being the best times for egg counts and root examination during the growing season.

AGVISE Demonstration Project Summary 2010

AGVISE Laboratories provides information to customers in the form of long term demonstration projects. These projects involve several products and practices and the effect they have on soil nutrient levels and properties. The following figures and tables are a summary of the project results for 2010. If you have any questions on this information please call one of our Agronomists or Soil Scientists.

Does Elemental Sulfur Decrease Soil pH?

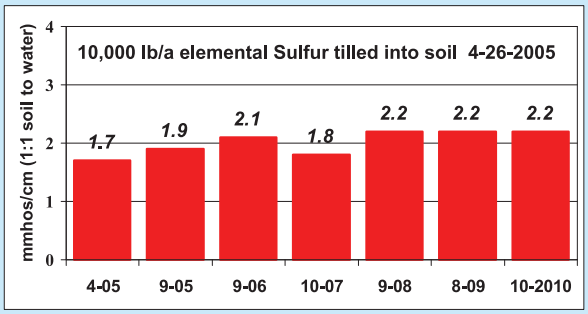
YES! But temporary and no crop response!



Soil (CCE) Carbonate level is 1.5%, loam soil texture

Does Elemental Sulfur Reduce Salts?

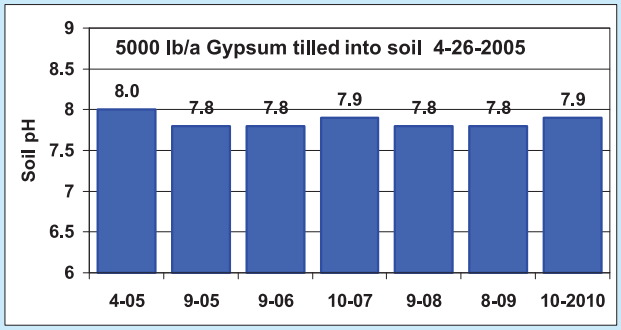
NO! Elemental Sulfur Will Not Decrease Salts



AGVISE Demonstration Project Summary continued…

Does Gypsum Decrease Soil pH?

NO! Gypsum Will Not Decrease Soil pH



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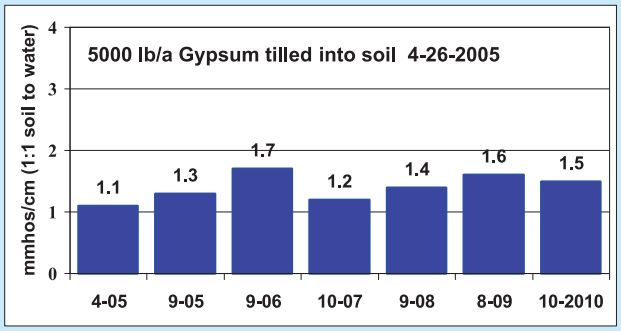


Does Beet Lime Increase Soil pH?

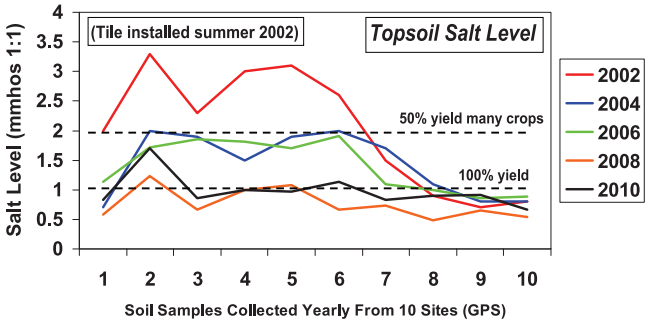
NO! Beet Lime Will Not Increase Soil pH

Rate of Lime tilled Into 0-6" August 2008	2008 Initial Soil pH	2009 Soil pH	2010 Soil pH
1 ton	7.8	7.8	7.7
2 ton	7.9	8.0	7.9
3 ton	7.9	8.0	7.9
4 ton	7.8	7.9	7.8
5 ton	7.8	8.0	7.9
6 ton	8.0	8.1	8.0

Beet lime will increase the pH of acid soils (pH < 6.0) which require lime to maintain productivity

Tile Drainage Removes Salts

(AGVISE Demo Project 2002-2010)



Starter Fertilizer—How Low Can You Go?

As spring approaches we are getting many questions on starter fertilizer. Most questions revolve around the "maximum" rate of different fertilizer materials that can be placed safely with the seed. More recently, we are getting questions on how low fertilizer rates can be, and still get a starter affect for early seeded crops like corn, wheat, canola and sugarbeets.

When any phosphorus fertilizer material is placed with the seed at a low rate, there is a concern that the fertilizer material will be too far from some seeds to provide a full starter effect. The starter effect is primarily due to the location of the fertilizer in relation to each seed. University research has shown that to get the full starter affect, a fertilizer drop or particle must be within 1.5 to 2" of each seed.

To give agronomists an idea how far apart dry fertilizer particles or drops of liquid fertilizer would be for different rates of phosphorus fertilizer, we put together a few tables. These tables show the distance between fertilizer particles or drops of fertilizer at various rates. We also created a visual display of these situations on our web site. These displays show the seeds of several crops, with different rates of dry or liquid fertilizer applied with the seed. These displays are a great way to show a real view of the distance between the seed and phosphorus fertilizer materials at several rates of dry and liquid fertilizer.

We encourage you to go to www.agvise.com, click on "New - Starter Fertilizer Distribution Display," and print out a full

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Starter Fertilizer—How Low Can You Go? continued…

set of these displays over a wide range of fertilizer rates (one example of seed placed fertilizer with wheat and corn is shown). Having a full set of these displays on your desk will make it easier to explain to growers what happens when they try to get by with low starter fertilizer rates.

It is important to remember, that even if you apply a high enough rate of phosphorus fertilizer to get a good starter effect, additional P fertilizer will be required to keep pace with the phosphorus removed in the grain at harvest. For example 60 bu/a wheat removes 35 lb/a P2O5 and 160 bu/a corn removes 65 lb/a P2O5. Please give our staff of Agronomists and Soil Scientists a call if you have any questions.

Seed Placed "Liquid" Fertilizer Distance Between "Drops" (Wide Rows)

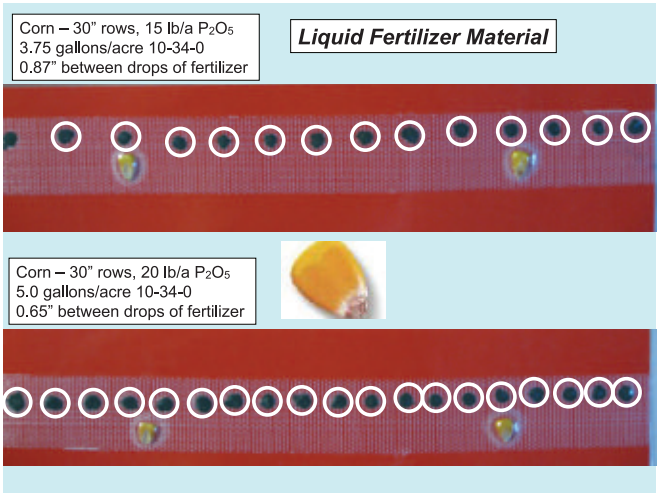
Row Spacing	APP 10-34-0	P_2O_5	Distance between Fertilizer drops
30"	1.25 g/a	5 lb/a	2.6 inches
30"	2.50 g/a	10 lb/a	1.3 inches
30"	3.75 g/a	15 lb/a	.87 inches
30"	5.00 g/a	20 lb/a	.65 inches
30"	7.50 g/a	30 lb/a	.43 inches

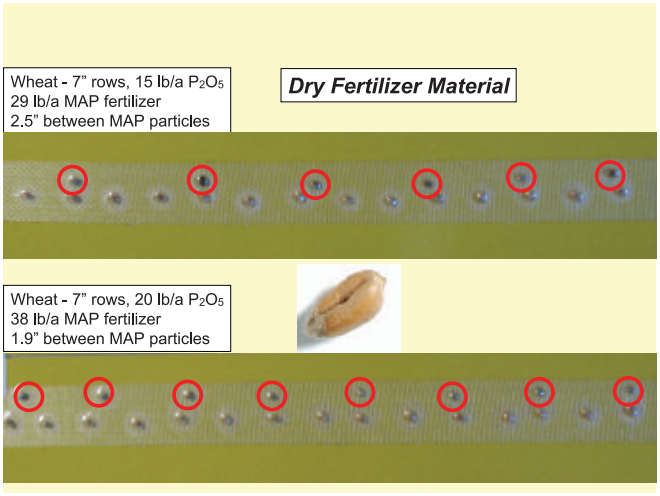
Seed Placed "Dry" Fertilizer Distance Between "Granules" (Narrow Rows)

Row Spacing	MAP (11-52-0)	P_2O_5	Distance between Fertilizer particles
7"	10 lb/a	5 lb/a	7.6 inches
7	19 lb/a	10 lb/a	3.8 inches
7	29 lb/a	15 lb/a	2.5 inches
7	38 lb/a	20 lb/a	1.9 inches
7	57 lb/a	30 lb/a	1.3 inches

Seed Placed "Liquid" Fertilizer Distance Between "Drops" (Narrow Rows)

Row Spacing	APP (10-34-0)	P_2O_5	Distance between Fertilizer drops
7"	1.25 g/a	5 lb/a	11.2 inches
7	2.50 g/a	10 lb/a	5.9 inches
7	3.75 g/a	15 lb/a	3.7 inches
7	5.00 g/a	20 lb/a	2.8 inches
7	7.50 g/a	30 lb/a	1.9 inches





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BOB DEUTSCH
PRESIDENT
SOIL SCIENTIST/CCA

AGVISE is always searching for new soil analysis methods which will increase our efficiency and give our customers more value. This winter we have been developing alternative methods for two testing methods that are very time consuming and expensive. Our hope is to be able to offer these two new methods at a much lower cost to our customers.

Last year, I told you AGVISE purchased an instrument called a Near Infrared Analyzer (NIR). This is the same type of NIR instrument used at your local elevator to determine grain protein. NIR instruments are also used in the feed industry for testing hay, silage and pet food.

NIR instruments have not been used routinely for soil analysis in the past, although scientific research has shown that NIR could be used for some routine analysis. Our scientists, along with scientists from the NIR Manufacturer, are in the process of developing a method to use NIR instrumentation to test for soil texture (% Sand, % Silt, % Clay). We recently scanned hundreds of soil samples with the NIR technology and compared the NIR values to the test results from the traditional method. The initial correlations look very promising and we hope that by fall we will are able to offer soil texture by NIR analysis at a much lower price.

The second procedure we are working on is an alternative method for testing soil biomass. A biomass test indicates the total microbial life in the soil. We have received a number of calls regarding our capability to test soil biomass. This seems to be a soil parameter of interest by the NRCS. Our current biomass method takes one technician 2 days to test 6 samples. This makes the biomass test very expensive, so currently only research samples are tested for biomass. Hopefully the alternative method will be more efficient and cost less to run.

AGVISE has been a leader in the Agricultural Testing industry for over 35 years. We know that adopting new technology will help us serve our customers well into the future. Thanks to our loyal customers, AGVISE will continue to be a leader for a long time to come.

NORTHERN NOTES

JOHN LEE
SOIL SCIENTIST/CCA

Spring is coming fast and most agronomists are busy helping growers put the finishing touches on their fertilizer plan for 2011. Many growers have aggressive fertilizer plans in place as crop prices remain strong. On the other hand, the price of fertilizer has increased as well, so agronomists are also helping growers watch their expenses.

There are a multitude of fertilizer products on the market right now and the list is growing each day. Many of these fertilizer products have little or no university research evaluating them. Trying these "new" products on a small acreage is the first step. Many growers have yield monitors that will help them determine if each of these products lives up to their claims. Remember to set up multiple strips within each field to evaluate each product. Remember that simply splitting a field will not give you the information you need.

The window for soil testing is always small in the spring, so make sure you are ready. If you need any sampling equipment (hydraulic or hand) or soil testing supplies, please give us a call. We are ready to give you great service and technical support this spring.