

Regional Sales Managers

Chris Behl
behl.chris@gmail.com
Bloomington, IL 888-879-2297
Cell 309-826-8020

Ted Huber
thuber@consolidated.net
Oakland, IL 888-305-4411
Cell 217-259-8221

Jason Boerngen
jandjboerngen@mmtnet.com
Montrose, IL 888-732-2530
Cell 217-254-3038

Matt Schilling
marva74@live.com
Dahlgren, IL 618-643-4060
Cell 618-925-1566

Gary Frye
Hull, IL 217-656-3474
Cell 217-460-0001

Pro-Ag Consulting, LLC
PO Box 41
1503 Kentucky Ave.
Windsor, IL 61957

Visit us on the Web!

@

www.proagconsulting.com

Row Vs Broadcast for your Future

Are you one of the growing numbers of farmers who have added starter fertilizer on your planter? If not, you may want to do so. Results from those who have, have reported 8, 12, 17 and sometimes as much as 22 BU yield increases on corn.

WHY?

When broadcast applying a fertilizer that is a blend of Nitrogen, Phosphorus and Potassium (NPK), each element once it is placed on the soil surface has different movement characteristics. NITROGEN has the ability to move throughout the root zone. It can move sideways, upwards and downwards. Thus it is subject to Leaching and Runoff. PHOSPHORUS does not move at all. It will move less than 3 cm from where it is placed. Phosphate in the middle 12 inches between the rows is not used in its current year. POTASSIUM is more stable than Nitrogen but it can move downward until it fixes on a clay colloid, but moves very little sideways. The Potash placed in the middle of the rows will not be used this year.

SO WHY NOT USE LESS FERTILIZER AND PUT IT IN THE ROW

Placing fertilizer in the row concentrate the plant food in the root zone so when the plant needs the plant food, it is close to the roots for the plant to use. Using less than 1/3 of what is broadcast saves time and provides increased yields.

WHAT ARE THE YIELD INCREASES?

Five years of accumulated yield data has yield increases of 8-12 BU per acre when using only liquid Nitrogen or 10-34-0. When Sulfur was added to the starter, 12-18 BU increases were very common. When high Phosphate levels exist and the corn plant was under stress early, a pt. of Zinc with liquid N showed very favorable yield improvement.

SUMMARY

For 35 years I have said we will all eventually go back to putting our plant food in the row. Machinery costs and \$4 corn will cause us to look more and more for the most economical crop we can raise. Reducing the amount of broadcast plant food, putting more in row and getting more yields can reduce your input cost per bushel raised.

DON'T WANT THE EXTRA WEIGHT ON THE PLANTER?

Many farmers are putting saddle tanks on their tractors to carry the extra weight. Others are using nurse tanks pulled behind the planter. I saw a photo of a 32 row planter pulling two nurse tanks side-by-side.

WHY THE BIG INCREASES WE ARE SEEING

- ◆ Placing starter in the row has several advantages
- ◆ Reduced stress
- ◆ More vigorous growth first 30 days
- ◆ Better nutrient uptake
- ◆ Healthier plant when ear size is determined
- ◆ More disease-resistant plant

HOW MUCH SHOULD I PUT IN THE ROW?

A very popular application is 5-7 gal. of liquid Nitrogen, 2-4 qts. of Sulfur and if needed, 1 pt. of Zinc. On soils that are a little low on Phosphorus, 7-10 gal. of 10-34-0 is often substituted for the liquid N.

Pro-Ag Update

Pro-Ag Consulting, LLC

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To do a Simple task
Exceedingly well
Spells Success

Should we Test for Potash??

Three University of Illinois professors have said they find no use in soil testing for Potassium. They base their study namely on yield test data received around the Midwest. They found that in many cases the application of Potash (Potassium Chloride) did not increase yields and in some cases actually decreased yields.

They stated that availability of Potash varied from year-to-year and therefore they felt testing for its availability was of little value. Citing tests taken at the morrow plots at the University of Illinois, soil tests on one section where fertilizer had never been applied, Potash test taken in 1955 was 216 pounds per acre. Then in 2005, with no Potash applied for 50 years, the Potash test was 360 pounds.

Three weeks later, another University of Illinois professor challenged the findings of the three professors. He said that Midwest soils do provide considerable amounts of Potassium while it is producing grain and when the grain is removed at harvest, only part of the Potassium is removed. The remainder stays in the stover and is returned to the soil. If crops remove more than what is made available for the next year crop, soil test levels will decrease.

In reference to the soil tests taken in the morrow plot, he said K test taken more frequently from 1967 through 2008 did not show the same trend.

He also stated that today a corn/soybean rotation with good yields will remove as much as 100 pounds of K over a two year period. Most Illinois soils can supply no-where near that amount so K levels drop.

Is the K Soil Test Useful?

He stated that measuring plant available K in soils is difficult and that soil test values vary over time. He went on to say that part of this is a sampling issue. Soil test K levels often change in short distances, soil moisture affects K tied up in clay minerals and even the way soil is dried before testing can affect soil test levels.

Despite all this, low test values are often predictive of crop deficiencies. Yield increases from adding K fertilizer are much more common when soil test K levels are low than when they are high. Little response can be expected if test value is 250 pounds or higher.

In summary, he did not agree with these authors who asserted K fertilization was unnecessary.

In our 50 years of testing Illinois soils, at times we have been frustrated with the variability we see in K tests. We have seen tests done in Champaign County (where top soil is 8 ½ft deep) shows high test value and then the next times we test they are much lower than what the crops have removed, but not all Illinois soils are like Champaign County.

We have tested soils in almost every county in Illinois and some of the oldest soils do not have the capacity to supply all the K that crops need. So we see low yields and test values in the low 100's or lower.

Applying Potash at the correct time of the year increases yield and test weight. Side-by-side field tests have seen bean yields double when Potash is applied at the correct amount based on soil test values.

At PRO-AG we take a quality sample, dry it correctly, and then run accredited tests for K values. We also establish a history of where and when we took previous samples. This information helps us in making the correct recommendation when fluctuations occur.

Yes, we do think a soil test for K is essential and the application of K is economical if the soil tests indicate.

This year PRO-AG awarded two Jim Koester Memorial Scholarships. Both will receive \$2000 to be used for their tuition and books at a college of their choice.

Each year PRO-AG Consulting LLC awards a scholarship to an immediate family member of one of our clients. The individual should be intending to enroll in an Agriculture related curriculum.



Matthew graduated from Red Hill High School in Bridgeport, IL. Matthew is the son of Donnie Paddick and Danette Smith. He is enrolled at Lake Land College in Mattoon, IL majoring in Agriculture Education.

When asked what his plans are for 5 years from now, he replied “I want to be an Ag Teacher because I want to help everyone to the best of my ability.”

Tyler Smith

His civic duties included volunteer at the Vermillion County Fair Board where he collected and donated items for Park/Vermillion Humane shelter and served as a volunteer at the Vermillion Convalescent Center.

Becky Holbert, Extension Educator said, “three words describe Tyler – dedicated, hard working and responsible.”

We wish both of these fine young men the very best life has to offer as they further their education. Scholarship applications are available by seeing your Regional Manager or by calling our Windsor office at 1-800-879-2297

If you live in Southern Illinois (South of Route 16) you may want to apply K-Mag. The results have been very positive and it is a “money maker” for your operation.

All Southern Illinois soils are now deficient in Sulfur and Magnesium and many are short on Potash. K-Mag contains all three in a readily available form. It has Potassium **22%**, Magnesium **11%**, Sulfur **22%**.

Work with your PRO-AG Agronomist and let him work out the best recommendation for your farm.

- ◆ Do not apply Phosphate fertilizer over frozen ground. Phosphate will lay on top of the frozen ground and if a heavy rain should occur, you may lose a great amount in the water run-off.
- ◆ Potash can be applied. The salts in Potash will melt into the frozen surface and not run-off.
- ◆ Do not apply Potash in the fall or early spring if you have silty loam soils.
 - ◆ Example: (Cisne Silt Loam) Silt loam soils do not have enough clay colloids to fix large amounts of Potash. Potash will leech downward and out of the root zone. Wait and apply as close to planting as possible since Potash will stay available to the plant for a longer period of growing season.

We have added a new service to our lab in Windsor.
We now do Nitrate Testing in house instead of sending it out.

With Nitrate Testing we will be able to give you results for the amount of Nitrate that is available in the root zone where the sample was taken. Since Nitrogen readily moves, the results will vary depending on the time of year and could vary from day-to-day.

Soil pH

Whenever we look through the soil test's results for a given field, the first item we look at is the soil pH results. If the soil pH is out of line, correcting it should be the first order of business. Not only does soil pH impact plant growth and root development, it also impacts a host of other things in the soil. This includes nutrient availability and soil microbial life.

Soil pH is a measure of the relative acidity or alkalinity in the soil. The scale runs from 0 up to 14. A pH reading of 7 is neutral. So if the number is below 7 we have an acid soil and if above a 7 we have an alkaline soil. As a general rule in Midwest corn, beans and wheat, fields you should consider corrective measures if the soil pH is above a 7.3 or below a 6.3. We consider 6.8 as ideal.

Another point to be aware of is that soil pH is measured on a logarithmic scale. A pH of 7 is neutral. A pH of 6 is ten times more acid than a 7. A pH of 5 is ten times more acid than a 6. So, then a pH of 5 is 100 times more acid than a 7. You can see why we don't want your pH to get too low.

If a soil is too acid, applying CaCO_3 (Calcium Carbonate) will correct the acidity. Most common source of CaCO_3 is Lime. Another source is egg shells. Near a hatchery in southern Indiana, several farmers are having the egg shells applied instead of Lime. Egg shells have a very high content of CaCO_3 .

If your soil is acid, it has too high a content of Hydrogen. Removing the Hydrogen raises your pH level.

CaCO₃ reacts with the Hydrogen (H⁺) to form water (H₂O) and Carbon Dioxide (CO₂) leaving free Calcium (Ca⁺⁺). Hydrogen is removed leaving more storage space in the soil for Cation Nutrients – Potash, Magnesium, Nitrate, etc. completing the cycle. Applying Nitrogen products containing Hydrogen Ammonia (NH₃) reverses the process and makes soil more acid again.

In 1980 Professional Agricultural Services in Beardstown, IL and Evansville, IN was formed and our first samples were processed. As we added new customers, our sample count has grown every year as well as the number of acres sampled.

This year for the first time, we processed over 100,000 samples through our lab. Since January 1, 2013, PRO-AG employees have sampled over 330,000 acres in the states of Illinois, Indiana, Missouri, Iowa, Kentucky and Tennessee.

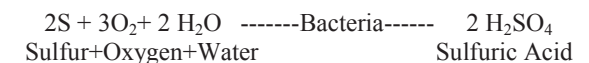
We thank all of you for your continued patronage to our program.

There is no quick fix for correcting a high pH soil. It did not happen overnight and it won't go away overnight. But we have options to lower the pH and release the nutrients (Boron, Zinc, Manganese, Copper) that are tied up in high pH soils.

Most high PH areas have a drainage problem. Getting the water away should be first priority. Either surface drain or tile it to get rid of water and loosen the soil. If you cannot drain the area, it can be treated with a short term fix using Elemental Sulfur (flowers of Sulfur). This will lower the pH in the root zone for a short period of time.

Elemental Sulfur is converted to Sulfuric Acid by soil bacteria. Therefore in order for Sulfur to work the following must be satisfied:

- ◆ Sulfur must be mixed with the soil to provide contact
- ◆ The soil must be moist
- ◆ The soil must be aerated (bacteria needs Oxygen)
- ◆ The soil must be warm for rapid bacteria growth
- ◆ Time is required for the reaction to go to completion.



	<u>Desired pH</u>	
<u>Current pH</u>	<u>6.5</u>	<u>6.0</u>
	Amount to Apply	

8.0	1300#/A	1750#/A
7.5	875#/A	1306#/A
7.0	435#/A	875#/A

FOR SANDY SOILS REDUCE AMOUNT BY 1/3
FOR CLAY SOILS INCREASE AMOUNT BY 50%

If you have any questions, contact your PRO-AG Agronomist and he will be glad to assist you.

Look for us
at the
Gordyville
Farm Show!

Again this year,
we will have a
booth at
Gordyville, IL.

Stop by and see us.
We will try to answer
any questions
you may have.

Dates are
January 29th & 30th.