

Issue 3 Volume 6

## INSIDE THIS ISSUE

|                                  |        |
|----------------------------------|--------|
| 2011 Year of Fungicides?         | Page 2 |
| Successful Weed Control          | Page 3 |
| Yield Contest Form               | Page 4 |
| Early Corn & Soybean Development | Page 5 |
| Answer Plot® Dates for 2011      | Page 6 |

Questions or comments regarding The WFS Agronomic Analyst can be forwarded to:

WFS  
233 W. Ciro Street  
Truman, MN 56088  
507-776-2831  
F 507-776-2871  
wfsinfo@wfsag.com  
www.wfsag.com



facebook.com/WFS.COOP

## MISSION STATEMENT

Continually work to grow member value and cooperative strength.



Chad Carlson  
Winnebago/Amboy Field Marketer

## What Plant Tissue Samples Tell Us

So you get your soil test results back and decide to apply the nutrients to the field based on the recommendation of the test. That should take care of all the crop nutrient needs during the growing season, right? This is not always entirely true. A soil test is the amount of nutrients in the soil at one point in time. What about the nutrient levels in the plant? We tend to overlook the idea of what is actually taking place in the plant and the nutrient deficiencies occurring that are unseen. A plant tissue sample can identify the deficiencies of macro and micro nutrients in the plant which will allow you to correct or improve the deficiency by foliar applying micronutrients over the top. Each element is essential to a healthy growing plant. One micronutrient deficiency can limit your crops yield potential. Having a plant tissue test along with your soil test results is one combination that is very valuable in managing your crop nutrient needs.

### What to Sample

A field can be sampled in an area of interest or grid sampled. If a specific spot is showing poor growth, abnormal coloration, or has poor yield year after year, tissue can be collected from that specific area. If desired, the entire field may be sampled through random collection of tissue throughout the field. To obtain a more accurate result, hills or low areas are avoided. Areas that tend to be more flat or areas that represent similar soil types should be the focus. The plant tissue is collected, packaged, and sent to a lab where it is analyzed to correlate the amount of nutrients that should be in the plant at its stage of development. The results are then generated into a report using the Nutrisolutions tool that will create a specific nutritional recommendation for your crop and field. Your field marketer will then share the results with you and adjustments can be made to your crop.

### MAX-IN Products

Agrisolutions plant nutrients provide micronutrients and high quality secondary nutrients. MAX-IN products increase the movement of micronutrients through your plants to promote nutrient uptake and overall plant growth for maximum results. The secondary and micronutrients are vital to a well-balanced fertility program. The MAX-IN technology brings the next generation of foliar nutrition to your crops.

### Products that are available to you for this growing season to be applied to your soybeans and corn are:

**MAX-IN for Beans** contains concentrations of five micronutrients boron (B), iron (Fe), manganese (Mn) molybdenum (Mo) and zinc (Zn) for increased soybean plant strength and production.

**MAX-IN Manganese** consists of manganese to help with the tie up of manganese that may be caused by your glyphosate applications.

**MAX-IN ZMB** consists of micronutrients zinc, manganese, and boron used mainly on corn. We have seen field averages of 3-4 bushel an acre greater when a MAX-IN product has been used.

These products include patented CornSorb technology which increases movement of micronutrients through the leaf cuticle to internal leaf structures. They can be tanked mixed with glyphosate-based herbicides and an ammonium sulfate source such as Class Act NG adjuvant which should always be used to help increase efficacy. Contact your local field marketer for more questions you may have on our MAX-IN products.

### Tank Mixing Micronutrients

1. Fill the tank ½ full of water and agitate. Add your adjuvant and AMS product (Class Act).
2. Allow your adjuvant to disperse throughout the water. If a dry AMS is being used allow time for the product to completely dissolve.
3. Add your MAX-IN product of choice and allow it to fully disperse in the water.
4. Fill the tank to 75% with water and agitate.
5. Add your glyphosate to the mix and allow the spray solutions to mix under agitation for a few minutes.

**\*\* It is very important not to mix your glyphosate and the MAX-IN products in a cone together at one time.**

### How to Get a Tissue Test

Consult your local WFS field marketer and schedule a tissue test to receive the NutriSolutions based nutrition recommendation for your crop. They will sample the field and within 2-3 days of the sample submission the test results will be ready. The field marketer will share with you the results of the tissue test using the Nutrisolutions Tool and will discuss the recommendations to fix the problem.



### Areas where response is likely to occur:

- Alkaline soils – pH >6.8
- Cool soil conditions
- Saturated soil conditions
- High P testing soils - > 75 lb/A
  - Sandy Soils
  - Drought conditions
- High OM – especially peat and muck soils
- Roundup Ready Soybeans



# Is 2011 a good year to use fungicides?



James Stromberg  
Blue Earth/Granada Area  
Field Marketer

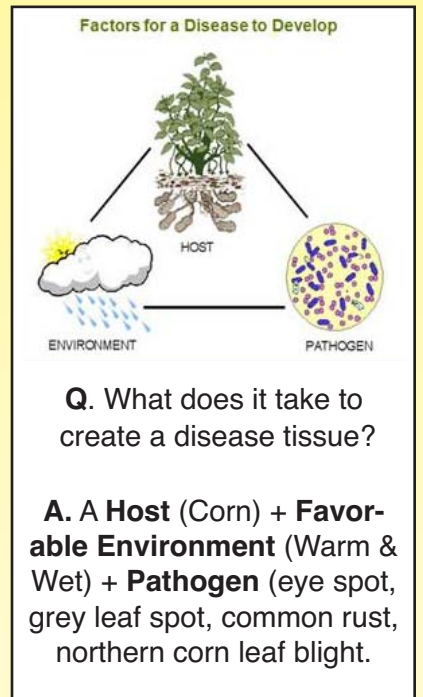
Fungicides for corn and soybeans have been offered by various manufacturers for a number of years now. However, it seems like many questions still remain. Crop diseases can be hard to avoid, but it's possible to slow them down or get rid of them by using the proper fungicides at the proper time. Without fungicides many plant diseases could go uncontrolled, causing crop production to become significantly lowered. Many companies are promoting fungicides for plant health as well as a curative product for the diseases that show up during the growing season. I would like to show you some reasons why fungicides are needed, why application timing is important, and which products are best for your farming operation.

It is important to remember that we are trying to protect 100% of the yield potential your seed has by using sustainable and economical practices. First, let's talk about application timing and why it is important. Fungicides are meant to be applied at major turning points in a plant's life cycle. The goal is to keep the plant out of stressed conditions in order to achieve optimum yield. In corn, fungicides can be applied at V5 and R1-2 stages. The reason for this is that at the V5 stage the maximum number of rows around the ear are being determined. Maximum number of kernels and test weight is being determined at the R1 stage. In soybeans, fungicides should be applied at R3 when the plant is flowering. If a soybean plant undergoes any stress at this point, 65-70% of the flowers could be aborted, which will greatly affect yield.

Along with the number of different fungicides available come different active ingredients that affect how a fungicide works. Strobilurins fungicides, such as Headline® and Quadris®, are a disease preventative. They are best suited for early applications before there is not heavy disease pressure out there. On the other hand, when a strobilurin fungicide is combined with a triazole fungicide you get the combination of a preventative plus a curative effect. Products like Quilt Xcel™, Stratego® YLD, and Headline® AMP are best suited for later applications where heavier disease pressure exists. The tassel should be fully emerged and silks starting to emerge (R1). While this is optimal timing, you still have 14-17 days before brown silk to harness the complete benefits of a fungicide treatment.

By using these products for protection tools in your operation you should be seeing visual benefits as well. You will have less lodging in stands, which will result in increased harvest efficiency. Another visual trait from fungicide use is that the plants tend to stay green longer. This could result in a heavier test weight in corn or a few additional pods late in the season.

With each year being different, and not knowing what Mother Nature will bring, hopefully I have provided you with some helpful facts on whether fungicides will help you protect your maximum yield potential in our upcoming crop year.



## What plant diseases are fungicides fighting off in our cropping systems?

### Some include:

#### Corn:

- Anthracnose
- Eyespot
- Gray Leaf Spot
- Northern Corn Leaf Blight
- Northern Corn Leaf Spot
- Physoderma Brown Spot
- Rust
- Yellow Leaf Blight

#### Soybeans:

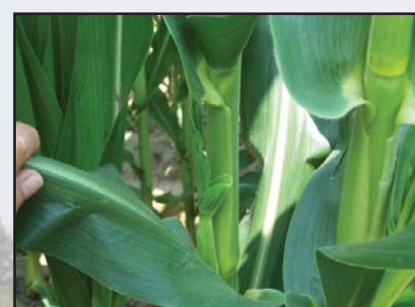
- Alternaria leaf spot
- Asian soybean rust
- Brown Spot
- Cercospora blight
- Frogeye leaf spot
- Pod and stem blight
- Rhizoctonia aerial blight
- Southern blight



**Optimum Application Timing (r1):** Apply Quilt® fungicide at 14 oz/A.



**R1 Silking:** critical time for yield protection, silks emerged from husk, pollination (capture of pollen by silks) and fertilization of ovules occurs.



**VT Tasseling:** tassel emerges from whorl, pollen shed (anthesis) begin shortly, few if any silks emerged from husk; plants at VT/R1 most vulnerable to drought stress and leaf loss.

## Syngenta Quilt® Application Timing for Corn

### Carrier Volumes

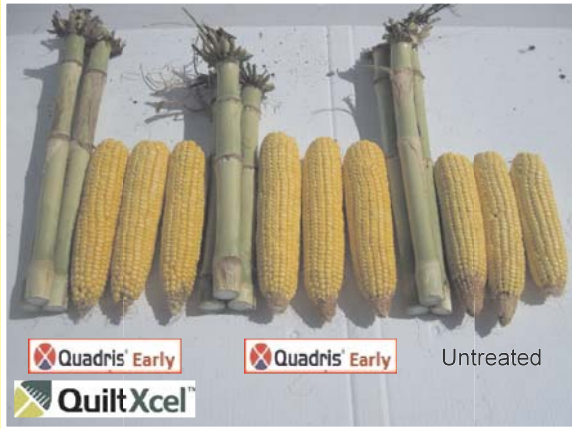
**Ground:** Apply 15-20 gallons of water/A

**Aerial:** Apply 2-5 gallons of water/A

NIS @ .25% v/v can also be added to aid with deposition

### Disease Controlled by Quilt®

- Gray Leaf Spot
- Common Rust
- Southern Rust
- Eye Spot
- Northern Corn Leaf Blight
- Northern Corn Leaf Spot
- Southern Corn Leaf Blight



Delevan, R1 Only



Fb R1 Hayfield, MN



Quadris® / Endigo®

## WFS Local Yield Data

| CORN      |                     |
|-----------|---------------------|
| Untreated | Treated w Fungicide |
| 177       | 196                 |
| 183.6     | 188.5               |
| 199       | 201                 |
| 191       | 192                 |
| 184       | 208                 |
| 188       | 194.7               |
| 195       | 213                 |
| 195       | 214                 |
| 173       | 188                 |

| SOYBEANS  |                     |
|-----------|---------------------|
| Untreated | Treated w Fungicide |
| 42.9      | 48.7                |
| 57.6      | 62.8                |



Tim Gehling  
Truman/Northrop Area Field Marketer

## Successful Weed Control

Weed control is a serious matter when it comes to producing top-end yields. How will I achieve my yield goals in both corn and soybeans? Weed control is one of the many answers that have to be combined to create such an opportunity for high-end yields.

One of the keys to weed control is to kill them early. Weeds can rob nutrition, water, and ultimately yield from crops. The larger the weeds grow, the more harm they cause to crops. An easy fix to help slow down the weed pressure is to use a pre-emergent herbicide. With the use of a pre-emerge herbicide, you can kill and/or slow down the large pressure of weed competition in fields for 4-6 weeks. This enables the crops to get off to a good start with unnecessary pressure and enables them to achieve maximum sunlight and root exposure. This added time also allows a producer to hit it with a post application if uncooperative weather takes place and they can't get back into the field for an extended period of time. Research shows that catching weeds early and keeping fields clean increases crop yields' potential significantly.

Products that are a great choice for corn production would be: TripleFLEX™, Harness®, or Verdict™.

Products that are a great choice for soybean production would be: Optill™, Valor®, or Authority® brands.

After a pre-emerge herbicide, 95% of soybeans and 80% of corn acres in the United States are sprayed with a glyphosate herbicide. Glyphosate has been used for many years and has been very effective up until resistant/tolerant weeds have been popping up the last several years. Since weeds are evolving, it is critical that we apply herbicides properly to get the best performance out of the chemicals applied.

There are a couple products that can be a key to successful weed control. One would be a product called Class Act® NG®. Class Act® NG® is an adjuvant that offers an easy-to-use formulation that combines a crop based adjuvant system, anti-foaming agent, and ammonium sulfate (AMS) source in a convenient liquid premix. Class Act® NG® is not only simple and easy to use, it also improves uptake and speeds herbicide movement for quicker performance and faster weed control.

Another product that can increase weed control efficiency is InterLock™. InterLock™ is a product that aids in deposition, canopy penetration, and drift-reduction. These factors are all vital so that the herbicide can land on and enter the weeds. Herbicides are not useful if they don't come in contact with their target. InterLock™ is a great adjuvant that can aid in reducing fines and off-target application areas by helping the herbicides hit their target so they can do their job.

Now with the proper application methods and products in place, we can minimize escapes. However, it is very important to keep in mind to rotate chemistries and modes of actions frequently within a given field. There are more resistant and "tolerant" weeds showing up every year and the problem is only growing. By changing modes of actions and staying with the labeled rates of the herbicide being used, we can slow down the growth of such a problematic issue. There are new chemistries entering the marketplace every season which can be used to change the method of application. Weed scientists at Ohio State University and Purdue University generally want to see a mix of herbicides used along with glyphosate in Roundup Ready® corn fields. By using other herbicides with glyphosate, it will improve the control and help delay glyphosate resistant weeds.

Herbicides that would be a great match to use as a tank partner with glyphosate in corn would include: Callisto®, Status®, Laudis™, or Cadet®. Tank partners that would work with soybeans would include: Cadet®, FlexStar® GT, Synchrony® XP, Cobra®, or Harmony®. Every herbicide has its advantages and disadvantages. The goal is to stop weeds before they hurt the yield potential of a crop. There is now a vast amount of different herbicide programs that can be successful in assuring great weed control. Talk to your local Field Marketer about any products or questions regarding weed control.



Untreated



The straight glyphosate application missed the glyphosate-resistant Palmer Amaranth weed.



Glyphosate with Flexstar® GT

Volunteer corn can impact soybean yield potential. According to research compiled through the WeedSOFT® program, offered by University of Nebraska-Lincoln, 2.4 volunteer corn plants per 100 feet of row can cause 10 percent yield loss. A soybean field with a 40 bushel yield potential could lose four bushels or \$42.00/acre if soybeans were priced at \$10.50 per bushel (price as of 11/07) – a potential loss of \$21,000 on 500 acres!

| Weed Species 2       | 2% Yield Loss | 10% Yield Loss |
|----------------------|---------------|----------------|
| Giant ragweed        | 0.2*          | 1.0            |
| Pigweed spp.         | 1.6           | 8.0            |
| Common cocklebur     | 0.8           | 4.0            |
| Common lambsquarters | 1.6           | 8.0            |
| Velvetleaf           | 6.4           | 20             |
| Volunteer corn       | 0.8           | 2.4            |

\*Number of Weeds per 100 ft2

Giant ragweed 0.2\* 1.0  
Common cocklebur 0.8 4.0  
Velvetleaf 6.4 20

Pigweed spp. 1.6 8.0  
Common lambsquarters 1.6 8.0  
Volunteer corn 0.8 2.4

Data compiled from trials: U of MN, Lamberton '03, '04; Syngenta Crop Protection '04; Treatments applied in combination with glyphosate. WeedSOFT® program developed by University of Nebraska-Lincoln provides state-specific yield loss estimates for selected states can be found at <http://driftwood.unl.edu/weedsoft/YieldLossCalc/YieldLossOne.php>

This year WFS is holding a Yield Contest. If you are interested in participating please fill out the form below and send to Andrew Wolff in the WFS Truman Agronomy Office. For any questions regarding participation, please contact Andrew (contact info on form) or your WFS Field Marketer.



# YIELD CONTEST

## 2011 WFS Yield Contest Entry Form

Name: \_\_\_\_\_  
 Farm Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Email: \_\_\_\_\_

**Soybean Information:**

County of Field Location: \_\_\_\_\_  
 Total Acres in Contest Field: \_\_\_\_\_  
 Soybean Variety Name and/or Number: \_\_\_\_\_  
 Planting Date: \_\_\_\_\_  
 Seeds Planted Per Acre: \_\_\_\_\_ Row Spacing: \_\_\_\_\_ Soil Type: \_\_\_\_\_  
 Pre-Emergence Weed Control: \_\_\_\_\_  
 Post-Emergence Weed Control: \_\_\_\_\_

**Corn Information:**

County of Field Location: \_\_\_\_\_  
 Total Acres in Contest Field: \_\_\_\_\_  
 Soybean Variety Name and/or Number: \_\_\_\_\_  
 Planting Date: \_\_\_\_\_  
 Seeds Planted Per Acre: \_\_\_\_\_ Row Spacing: \_\_\_\_\_ Soil Type: \_\_\_\_\_  
 Pre-Emergence Weed Control: \_\_\_\_\_  
 Post-Emergence Weed Control: \_\_\_\_\_

Entry Deadline July 1, 2011  
 Submit this form to Andrew Wolff  
 PO Box 68 | Truman, MN 56088  
 awolff@wfsag.com | Fax: 507-776-1298

--In order to qualify, the acres entered must be planted with seed purchased from WFS. Upon receipt of your entry, a complete set of Management Information Form, a Harvest Report Form and a copy of your Entry Form will be mailed to you.

*I hereby certify the above information given on this entry form to be accurate to the best of my knowledge and believe and agree that all contest information provided by me pursuant to this CORN AND SOYBEAN YIELD contest shall be the property of Watonwan Farm Service Co. and may be used and distributed at the sole discretion of Watonwan Farm Service Co.*

Signature of Contestant: \_\_\_\_\_ Date Signed: \_\_\_\_\_



Tony Sommer  
Bricelyn Area Field Marketer

# What to look for in early corn and soybean development

Early seedling development starts with a good quality seedbed that is prepared essentially from the time fall tillage is done, but this time of year let's start with the planter. As we all should know, the ideal planting depth is 1.5 – 2 inches for corn and 1-1.5 inches for soybeans according to Iowa State University. Along with planting depth comes seed placement, by this I am thinking seed spacing. This is where calibrating your row units pays off on seed cost and yield. We have the capabilities and equipment at WFS to help calibrate your row units.

As for soybean planting, ideal ground temperature for germination is 77-86 degrees at the 4 inch level. However, soybean seeds will start to germinate at 50 degrees. This is where a seed treatment containing a fungicide, plus an insecticide helps keep that seed from going out of condition in less than ideal soil conditions. We treat with CruiserMaxx® for beans or ApronMaxx®. These can be used alone, or we also have the option of adding a seed inoculant. A seed inoculant is a living bacteria that helps aid in root formation, earlier nodulation for nitrogen fixation, and also adds seedling vigor. Earlier nodulation has shown to be very beneficial, since soybeans are poor at nitrogen utilization on a per bushel basis, and has also seen results in those high alkaline areas.

## Nutrient uptake/day for various growth periods of 308 bu/a corn

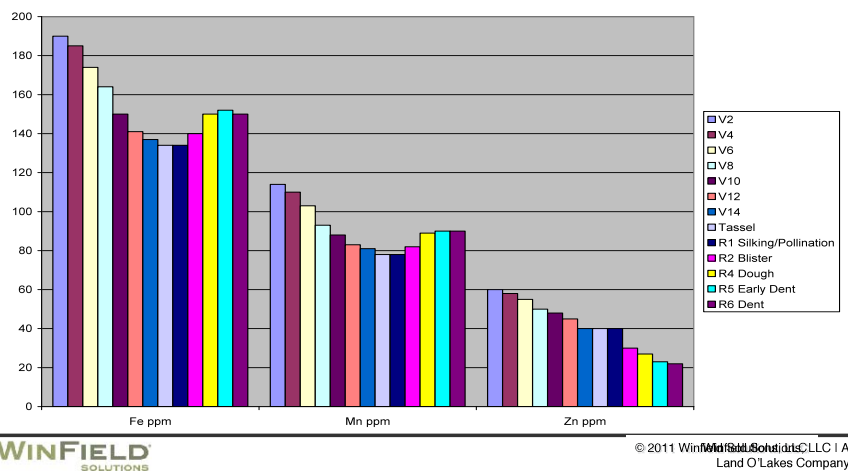
| Sampling Stage | Days in Period | Nutrient Uptake per Day (lb/A) |                               |                  | Total Uptake (lb/A) |                               |                  |
|----------------|----------------|--------------------------------|-------------------------------|------------------|---------------------|-------------------------------|------------------|
|                |                | N                              | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O | N                   | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O |
| 4-leaf         | 32             | 0.38                           | 0.08                          | 0.58             | 12                  | 3                             | 19               |
| 8-leaf         | 12             | 1.63                           | 0.35                          |                  | 20                  | 4                             | 40               |
| 12-leaf        | 15             |                                | 0.90                          |                  | 51                  | 14                            | 51               |
| Early Tassel   | 13             |                                |                               |                  | 144                 | 37                            | 199              |
| Silk           | 12             | -1.43                          | 0.88                          | 2.63             | -17                 | 11                            | 32               |
| Blister        | 18             |                                | 0.70                          | 0.68             |                     | 13                            | 12               |
| Early dent     | 31             |                                |                               |                  | 45                  |                               | 44               |
| Mature         | 13             | 0.16                           | 1.16                          | -1.65            | 2                   | 15                            | -21              |
| TOTAL (lb/A)   | 146            |                                |                               |                  | 345                 | 140                           | 375              |
|                |                |                                |                               | lb/bu            | 1.12                | 0.46                          | 1.22             |

## Soybean Nutrition Needs per Day

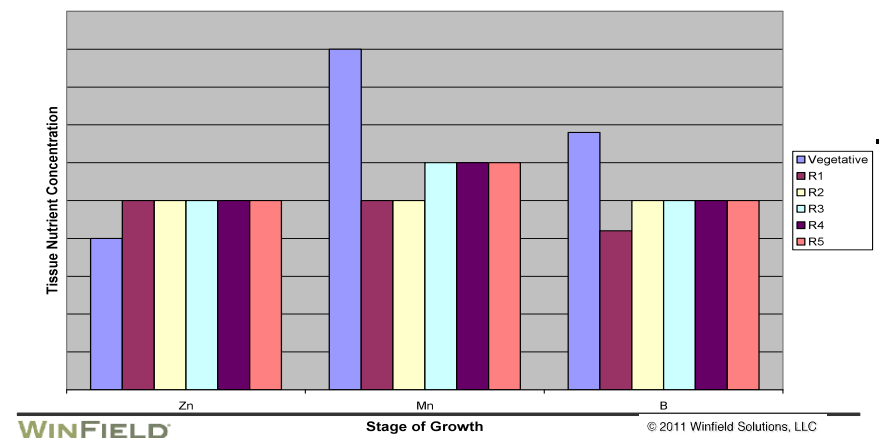
| Sampling Stage   | Days in Period | Nutrient Uptake per Day (lb/A) |                               |                  | Total Uptake (lb/A) |                               |                  |
|------------------|----------------|--------------------------------|-------------------------------|------------------|---------------------|-------------------------------|------------------|
|                  |                | N                              | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O | N                   | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O |
| 3rd Trifoliolate | 40             | 0.75                           | 0.25                          | 0.68             | 30                  | 10                            | 27               |
| 6th Trifoliolate | 11             | 1.45                           | 0.55                          | 2.72             | 16                  | 6                             | 30               |
| Full Bloom       | 16             |                                |                               |                  | 125                 | 28                            | 92               |
| Early pod        | 15             |                                |                               |                  | 137                 | 34                            | 144              |
| Soft seed        | 21             |                                |                               |                  | 240                 | 58                            | 51               |
| Near mature      | 16             |                                |                               |                  | -54                 | -20                           | -36              |
| TOTAL (lb/A)     | 119            |                                |                               |                  | 494                 | 116                           | 308              |
|                  |                |                                |                               | lb/bu            | 4.89                | 1.15                          | 3.05             |

References:  
Flannery, Roy. 1986 Better Crops with Plant Food, 6-7  
Tisdale, et al. 1993. Soil Fertility and Fertilizers, Chapter 7

## Elemental Prominence in Corn



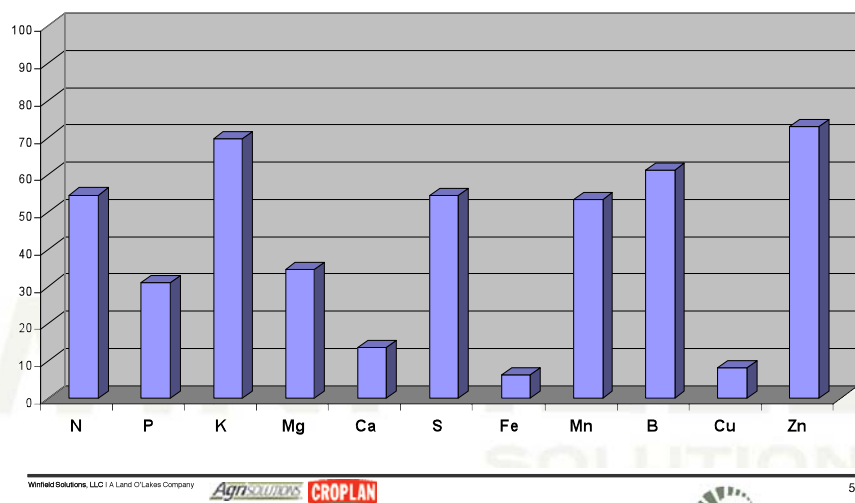
## Elemental Prominence in Soybeans



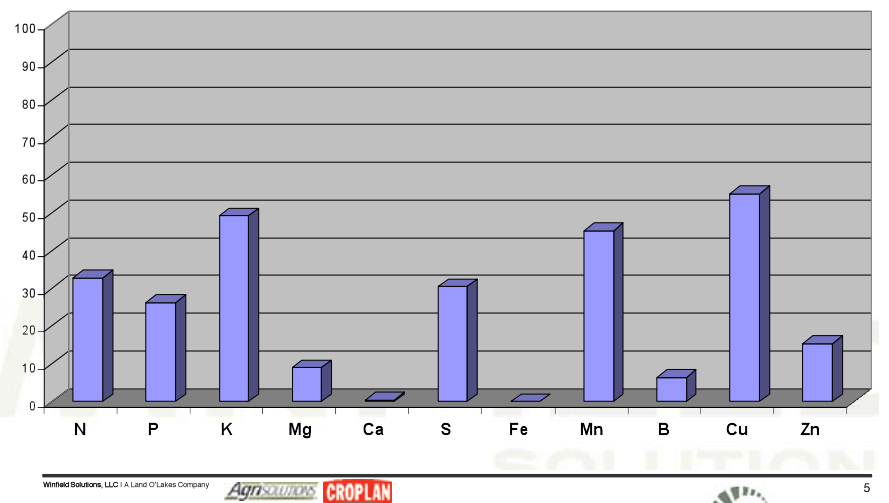
Now let's turn to starter for that "pop-up effect" on corn to get those plants up and growing. Some data I saw just this past winter was showing 8 bushel response versus not using a starter. Along with starter, has been the addition of zinc. Zinc is needed most by a corn plant early in its vegetative growth stages. This may be true even if soil tests show adequate levels. At a PH of 5.8 and above, zinc can be easily tied up in the soil and become unavailable to the plant. Depending on what kind of spring weather we have, we may or may not have some, or many nutrient deficiencies that show up.

Even once your crops are up and growing and visually looking well, nutrient requirements don't stop. The corn plant is determining ear length at V6-V8 stages and girth from V12-silk. In beans, early plant health stress mitigation is crucial in order to hopefully get the most flowers and retain them to get that yield potential. Last year was the first year for tissue sampling on a large scale. It is crucial to get enough data back in order to analyze and help manage soil and crop fertility even more closely as we strive for that 300 bushel mile mark that will be needed to feed the world. Although tissue sampling is not new to the ag industry, it probably will become more significantly used for a management tool as Precision Ag keeps progressing. As sample results are observed, there are more options being created to help with deficiencies and help maintain that yield potential.

## 2010 NutriSolutions Corn 16083 samples V3-CR Staging % samples deficient or low



## 2010 NutriSolutions Soybeans 2678 samples V2-SR1 Staging % samples deficient or low



Your WFS agronomy staff is able to help answer any questions, so I hope this might spark some interest in learning about early plant health. The more data that is observed, the more we all will be able to learn how to keep meeting those increased yield goals. Shown in the graphs above are the results from last year's tissue sampling. These results were collected nationwide, but of the 16,083 corn samples I would like you to know that around 6,000 of those were from our northern corn belt.

# SAVE THE DATE



## 2011 Answer Plot Knowledge Event Dates

- Session I: June 7th, 9 a.m.
- Session II: July 20th, 3 p.m.
- Session III: August 24th, 3 p.m.

Our WFS Answer Plot is located 2.5 miles north of Truman, MN on Hwy 15

With 20 Acres of Show & Tell the Truman site is your source for local agronomics, practically in your own back yard.

Attend an Answer Plot® Grower Knowledge Event to learn about some of the key topics listed below:

- Genetic Families
  - Emergence
- Seed Treatments
  - Pest Control
- Nutrient Management
- Disease Tolerance
  - Weed Control
- Disease Management
  - Roots
- Nitrogen Studies