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## E.R.U. What is it?

Environmental Response Unit - will become a new buzz word in the near future.

In February, the University of Missouri, the US Department of Agriculture-Agricultural Research Service (USDA-ARS), and DuPont Pioneer announced an innovative collaboration to pool soil mapping resources, predictive technologies and expertise. The collaboration offers growers a step-change in sustainable crop production through better recommendations for nitrogen application management and other field input planning, which can help deliver improved crop yields.

"The study found that ERU maps provided better representation of corn yield environments than soil maps did in 80 percent of the fields," said Brent Myers, Ph.D., an agronomist with the College of Agriculture, Food and Natural Resources at the University of Missouri. "This indicates that Environmental Response Units provide growers with a better base on which to develop management programs, including nitrogen/fertility, water and seed."

## Meet our Employees - Tish Behl, Mapping Manager



Upon graduating from Eastern Illinois University, with a degree in Computer Information Systems, Tish started working for Pro-Ag in the spring of 2004. With her husband, Ryan and daughters, Ashlyn and Ava, they reside in Shelbyville, IL.

Tish's job is to enter and maintain all the maps of the fields that are in our computer system.

When fields are tested and delivered to our office, each map of the field must be entered into our system. If it is a new field, it must have the description of the field entered and then a map drawn with all the features of that field (waterways, roads, buildings, etc.). Sample points entered and then it is ready for our lab to test the soil.

It is a very hectic job during our sampling season and her ability to handle the work load and do it very accurately is so very vital to the success that Pro-Ag has enjoyed.

Starting her 12<sup>th</sup> year at Pro-Ag, she is a vital part of a group of Pro-Ag employees doing a very professional job for our clients.

We are Celebrating  
our 36th Year!

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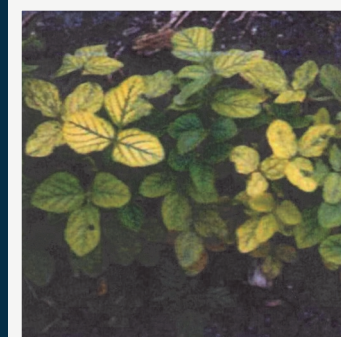
## Is it Manganese or Magnesium?

It is necessary to note the differences between magnesium and manganese. Some people tend to get them confused. While both magnesium (Mg) and manganese (Mn) are essential minerals, they have very different properties. Magnesium is a part of the chlorophyll molecule. Plants that are lacking in (Mg) will become pale green or yellow. A plant

with (Mg) deficiency will show signs of yellowing first on older leaves near the bottom of the plant.

(Mn) is not a part of chlorophyll. The symptoms of (Mn) deficiency are remarkably similar to (Mg) because manganese is involved in photosynthesis. Leaves become yellow and there is also interveinal

chlorosis. However, manganese is less mobile in a plant than magnesium so that the symptoms of deficiencies appear first on young leaves.



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## 300 Bu/Acre Corn? Almost

A client of Pro-Ag for over thirty years nearly reached his long time goal of producing 300 bu/Acre. The final number was 297.7 bu/Acre for the whole field. He credits a good balance of his P & K, ideal growing conditions, high population and his starter fertilizer which got the field off to a great start and a fast dry down. (More on starter fertilizer in this letter)

To do a Simple task  
Exceedingly well  
Spells Success

## Pro-Ag Scholarship

For the last eighteen years, Pro-Ag has awarded a \$2,000 scholarship to a high school senior who is planning a study related to Agriculture. This past year's winner was Brianna Voelker of Waterloo, IL.

To date, Pro-Ag has awarded \$37,000 in scholarships.

If you have a family member who is a senior in High School and plans to attend college this fall, an application for the scholarship can be obtained by contacting your Pro-Ag regional manager or by contacting our Windsor office at 1-800-879-2297.

Applications should be in our office by May 15<sup>th</sup>, 2015 to be considered for the scholarship.





## Talking with Don

One of my first jobs as a very young boy was working for my uncle on his farm. Back then the government paid farmers to spread rock phosphate on their fields. My job was to scoop the phosphate out of a box wagon into an Ezy-Flo 8' Spreader. Rock phosphate was one of the dirtiest products known to man.

Soon after my uncle bought a new 2-row corn planter using "check wire" and with a fertilizer attachment. Fertilizer was an analysis of 2-6-6, made from tobacco byproducts. Yields increased but I believe the nicotine killed enough insects to increase yield, not the 2-6-6.

Fertilizer came in 80# bags. Farmers complained about the weight and then came 50# bags. It wasn't long before fertilizer companies came out with bulk "pull type" spreaders. As a result fertilizer attachments were taken off planters and most all fertilizer were broadcast. Much less efficient, but easier on the back.

Now, new technology is providing us with new concepts of applying fertilizer. Using soil test maps, starter fertilizer is being applied on more and more farms. Using variable rates based on information created from those maps we are seeing more efficient use of our fertilizer dollars as well as seeing increased yields from these technologies. By combining variable seeding rates and variable nitrogen rates, corn yields are increasing and giving us a better ROI.

And yes, that old spreader is still there backed up to the trees never to be used again.



### Continuing Education

Constantly trying to improve our service to you, our customer, our employees are attending seminars, College courses and attending continuing education classes required by the Certified Crop Advisor (CCA) Association. Each year the CCA program offers classes for credit on various subjects pertaining to farm operation. Obtaining credit hours is necessary to keep their license up to date. Ted Huber was in the 1<sup>st</sup> class to get their CCA certification. Matt Schilling and Jason Boerngen have been certified and have their CCA's since joining Pro-Ag right out of college. Also, each are members of the National Alliance of Independent Crop Consultants (NAICC). Soil Techs David Boling and Dustin Parker continue to further their education at Lake Land College Agriculture School in Mattoon, IL. All of this is part of Pro-Ag's continuing effort to provide quality service to customers.



### Cover Crops

By Mark Coots, Owner of TEVA Corp.

In life things seem to go in cycles. That is true in farming also. If you read publications from early days of farming, you would find that they were worried about the same issues that are coming up in farming today. One of those is the fact that our Organic Matter (OM) is lower now than it was back then. If you do some research, you would find many articles that address this issue, stating we were going to lower our OM if we kept farming the way we were. They were right, so now you are hearing about Cover Crops.

Something that several of our grandfathers may have used, but we got away from the practice because of all the modern fertilizers etc. We are seeing the importance of them again. You can really build your OM back quicker, and capture nutrients that will leach away. There are several kinds of cover crops that a farmer can plant, and many different ways to plant and terminate them. You have Clovers, Vetch and other legumes for Nitrogen fixation, you have Turnips for loosening the soil and capturing nutrients like P and Ca, and you have grasses like Rye, Wheat, Oats and others to help with weed control and to add a green manure back in the soil. A farmer needs to decide why he wants to plant the cover, and then pick the right cover to do that job. There are several covers that you can blend together to accomplish multiple things at once. Your TEVA CORP. representative can help you choose what you want to plant and make a game plan to accomplish those goals.

For more information, contact Charles Haubold at (573) 579-7779



## Starter Fertilizer; Salvation for Cost Squeezed Corn Growers?

From swings in the economy to unpredictable weather, farmers historically are "fighting the odds." For example, as today's price per bushel goes down, the cost to produce it continues to go up. Growers are taking a closer look at options that can, with reasonable certainty, increase yields and boost ROI.

The use of starter fertilizers in corn is not new. In a 10 state area from Ohio to Nebraska, Minnesota to Missouri, the percentage of corn acreage planted with starters each year has hung close to 50%. It's also no secret that cold soils and shorter growing seasons have been prime factors influencing starters use.

Starter fertilizers have consistently boosted yields in comparative studies in Iowa, Indiana, Wisconsin and Illinois with different hybrids, under a variety of conditions and in no-till to conventional tillage operations. The probability of a profitable starter program also increased significantly with later planting dates, linked with the relative maturity of hybrids. And, while it can still be said that "the worse the spring (cold, wet, late planting), the more you need a starter program," nowadays deciding to go with a starter—and getting the most out of it—brings additional considerations into play.

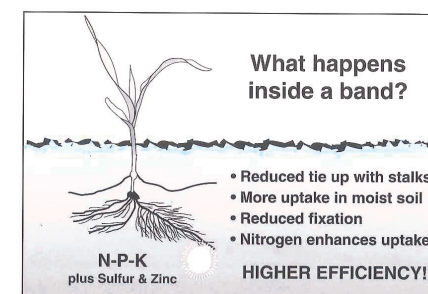
**Every balance sheet has two sides.** And when margins get tighter, the first instinct is to look for ways to "cut costs." Although you may find some application efficiencies or other ways to trim, all are necessary expenses for producing your crop.

And fertilizer—specifically, starter fertilizer—could directly help both sides of your balance sheet...by increasing yield and resulting income, while also reducing some other production costs. Results documented in Wisconsin provide eye-opening insights. Across all years, tillage systems and planting dates, corn yields with starter fertilizers averaged 158.0 bu/acre vs. 148.1 without—an increase of 9.9 bu/acre. With \$4 corn, that adds an average of \$39.60 in gross income for every acre planted. Grain moisture at harvest in the high-yielding "starter corn," was a full percentage point lower than the non-starter corn. Whether increasing yield or reducing cost, however, the benefits of starter fertilizer don't happen by accident. Understanding how, when, where and why they work, can help you increase profitability.

**Up-to-date soil samples help point the way** toward ideal NPK starter blends, as well as a cost-effective total crop nutrients program. While results with starters are likely to be greater when NPK runs lean, studies have shown that they also can pay when P and K test levels are considered high. Banding starter in the furrow or 2x2 at planting time positions the starter for fast, maximum impact when seeds germinate.

### Your starter's now in perfect position to do its thing!

- ♦ Zero-to-five: Stimulated growth means a quicker two-to-three-week trip from emergence to the five leaf stage for corn. Even more importantly, your corn arrives with enough vital phosphorus for fuller ears with more kernels on every plant (See Figure 1).
- ♦ "Vital" Phosphorus? You bet! Because now is when the die is cast. Now, at the five-leaf stage, your corn must have at least 0.5% of phosphorus in the plant tissue in order to deliver its bred-in hybrid best. If it doesn't, your ears will likely initiate fewer kernels.
- ♦ Weather or Not: What's more, the worse the weather gets, the more your starter functions as a "stress management" tool...boosting plants' ability to shrug off inclemency and grow to maturity with less yield loss.
- ♦ Reproductive Stage: Starter fertilizers help shorten the trip to silking, too, so that your crop arrives when temperatures and humidity are more likely to be "summertime cool" and moist—perfect for pollination.
- ♦ Grain Fill Period: Starters also help corn make the most of warm days and cool nights...so that kernels grow bigger and fuller. Every kernel. Every ear and stalk. Every row.



♦ Tip Fill: Stalks can grow truly full ears, with fewer "nubs" and heftier kernels all the way to the top-end. Ensuring delivery of the plant nutrients that help make this happen begins with starters, too. If you wind up with, say, 14 more kernels per ear, what's the difference? Well, how many ears and stalks per acre in your fields? How many acres; 100? 500? 1000? It's simple math. Better yet, it's addition...to yield, to income. That's how "little things" like these with starter fertilizers help you stack the odds for a greater payback on your side.



**The maximum number of kernels-per-ear harvested is determined during the five-leaf growth stage and is directly impacted by the percentage of phosphorus in plant tissue at that time.**

**A starter fertilizer can ensure adequate amounts of phosphorus in plant tissue for fuller ears.**

Figure 1