

LIQUID

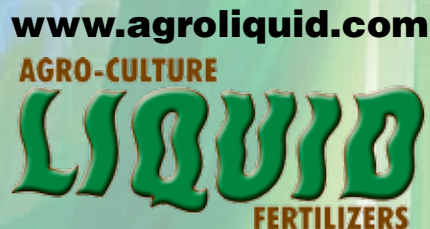
Does It Better!



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Managing Editor: Albert Bancroft



Planting Your Way To A Crop's Best Yield Potential



By **Dr. Jerry L. Wilhm**,
Senior Research
Manager

Growers are anxious to get started on the 2011 growing season since commodity prices for virtually all crops are at high levels. This is the time to go for maximum profitability by hitting high yields.

But with high prices and high yield potential, it's not a time to "go for broke" because with farming, that is always a literal possibility, even in good times. In other words, don't go overboard by spending foolishly on crop inputs.

Although commodity prices are high, so too are many of the production costs. Therefore, balance pertains to production costs as well as crop nutrition.

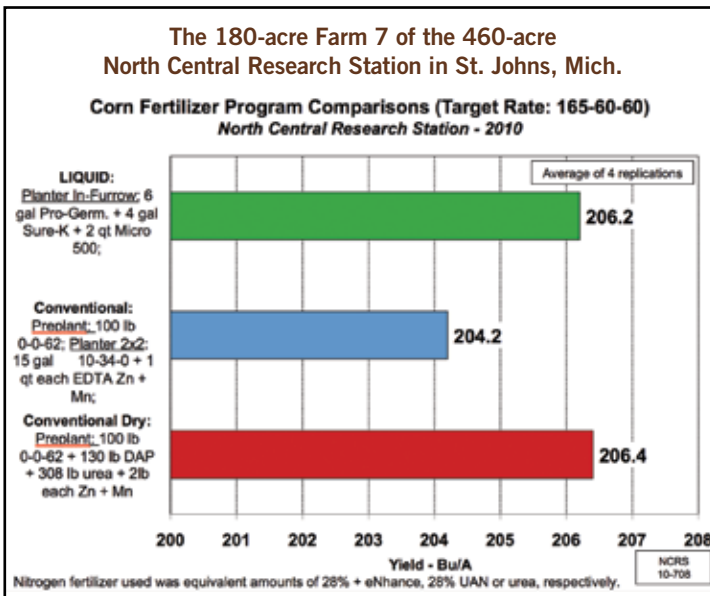
Just as in tough times, paying close attention to planter-time nutrient inputs like phosphate,

potassium, secondary and micronutrients is critical. Precision placement of crop nutrients will take your crop the farthest.

And just as important is the type of crop nutrient. For best utilization, nutrients should be placed in close proximity to the seed for early access. But then crop injury becomes a concern.

"Conventional" fertilizers are usually in an easily manufactured form, but they are not always in a form that's easily used by the crop. However, Agro-Culture Liquid Fertilizers has long been the leader in maximizing the

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Replicated plot research shows that planter placement of reduced-rate "usable" fertilizer is as good as or better than higher rates of "available" fertilizer.



“The LIQUID Perspective”

By Galynn Beer,
Senior Sales Manager

Our Growing Sales Department Shows A Commitment To Service

A strong commitment to growth has always been important to Agro-Culture Liquid Fertilizers and has resulted in continued investment in human capital to position this company for strong growth in the coming years.

Many things support and assist growth, such as various marketing initiatives.

However, nothing produces as well as quality Sales Account Managers (SAMs) making contact with current and potential sellers.

To facilitate growth in areas that hold unrealized potential, more team members have been hired to help provide high-quality sales and service in some key areas.

The expansion began with promoting Bob Baxter to Regional Sales Manager and adding Kurt Fisher and Benji Conover as Sales Account Managers under Baxter.

We also improved coverage in California with the additions of James Mills and Armando Gutierrez.

California has diverse crops and soil challenges that make LIQUID products a great fit. We felt that adding SAMs would help us gain sales in these high-value crop markets.

The diversity of crops will require support from our Agronomic Sciences department, but we feel we have two SAMs that will greatly increase our exposure and service.

We also felt stepping up efforts in the Northwest Region — Washington, Oregon, Montana, Wyoming, Idaho, Nebraska, North Dakota and South Dakota — could produce increased sales in that area.

The first step taken was to promote Stuart Schilling to Regional Sales Manager. Then we added Paulino Gutierrez (no relation to Armando) to cover Oregon and Washington, increasing our presence in that diverse cropping region.

The variable climate of Oregon and Washington allows several different crops to be grown. From blueberries in the very northwest corner of Washington to dryland wheat in the eastern areas of these states, opportunities abound.

Irrigation in the valleys provides water to many high-input crops, such as apples and grapes.

North and South Dakota are states where we’ve seen excellent product growth. We felt we needed to focus more attention on Nebraska, so Joshua Mosier was added to cover this area.

The two most recent additions of Paulino and Joshua complete our current openings for SAMs.

Paulino has extensive experience in agriculture in the Northwest. His familiarity with the crops and climate, as well as the sales culture of that area, will be an asset to LIQUID.

Joshua also has an agricultural background, having

grown up on a family farm in Nebraska. He has experience designing irrigation systems for Reinke Irrigation.

During an expansion of the Agronomic Sciences department, Sales Account Manager Jay Castleman made a move

to benefit that department. This left a void to be filled in the Southeast.

Fortunately, there was a qualified replacement available in Jason Garcia. As a recent seller, he had the skill set the company was looking for, as well as the desire to move to a management position with Agro-Culture Liquid Fertilizers. He understands the crops and soil challenges of the Southeast.

The company is fortunate to have found people that are a great fit for each of the situations we needed to address. Each of the new SAMs brings unique skills that will produce results with the given challenges in their areas.

It’s exciting to see the growth of the sales department. Adding quality people to fill these roles will help secure future growth.

Agro-Culture Liquid Fertilizers’ commitment to excellence means finding people who align with our desire to provide positive results to the end user — the farmer — by recruiting and assisting sellers who have a like-minded philosophy. 💧

“The company is fortunate to have found people that are a great fit for each of the situations we needed to address...”

New Ashley Facility Taking Shape, Already Functioning

By Dale Ruff,
Sr. Production Manager

The last few months — and even weeks — have brought much change to the Ashley, Mich., site. It surprises me how much work can be done in below-freezing temperatures and how welcome winter hats and gloves (from the LIQUID store, of course) are in those conditions.

The rail loadout and outside tank storage have been completed. Not all metering systems are installed, but I'm happy to report that the system design is more than meeting our expectations.

Trucks can be loaded in less than 10 minutes and railcars in about 30 minutes. We have been hauling product between St. Johns and Ashley to load rail and have enjoyed the additional tanks that have effectively

doubled our Michigan storage.

The building is nearly complete on the outside with the final trim, windows and doors being installed. The office is framed and being roughed for mechanical and electrical installation. The truck loadout and plant office are also roughed in and look like they will serve us well.

The plant is being assembled. The tanks, reactor and other systems are coming together and being integrated. Warehousing of some raw materials has begun in anticipation of late spring operations.

The installation of communications towers to talk between the corporate office, the North Central Research Station and Ashley is nearly done.

This facility has the capability to



TAKING SHAPE. The new Ashley, Mich., facility is being assembled, and already some warehousing of raw materials is taking place.

produce our complete product line and is the only plant that produces micronutrients and specialty products. In addition, this plant will produce some critical ingredients used in products manufactured by our company.

The plant will support growth well past our 2020 goals. Capacity will only be limited by our ability to manage inbound and outbound materials.

We are eagerly anticipating full operations yet this year. 💧

D.W. Cook: 1934-2010

By James Peterson,
Sr. Sales & Marketing Manager

On December 12, 2010, Agro-Culture Liquid Fertilizers bade farewell to its founder, Mr. Douglas W. Cook, who succumbed to cancer after a long, difficult illness. He was 76.

Mr. Cook, along with son-in-law Troy Bancroft, incorporated Agro-Culture Liquid Fertilizers in 1983, culminating Cook's work with liquid fertilizers that began in the 1960s. His first products were designed for specialty crops grown in his home state of Michigan. By 1983, experimentation had produced a full product line now marketed across the U.S. and in three foreign countries.

"D.W.," as many knew him, was first and foremost an innovator. His passion was crop fertility, and he successfully challenged the prevailing notion that fertilizer is merely a commodity. In creating the nation's largest fertilizer research facility to define his ideas, he successfully demonstrated that all fertility is not created equal.

He relentlessly advocated for high-quality fertilizer. Forward progress was uneven at times and there were some setbacks, but his belief in the concept of highly efficient fertilizers was eventually vindicated.

The universal skepticism of the 1960s and 1970s has been gradually replaced by understanding, and today's

growers know they are entitled to more than a weight and a price. The idea that fertilizer can be made at a quality level that allows crops to utilize a high percentage of the product is now readily accepted, even by many academics.

Our industry has come to believe it can offer significant value with highly efficient fertilizers because Mr. Cook experimented, demonstrated and persisted. It's not too much to say we are in his debt for making us better.

Mr. Cook will be greatly missed by many who became his close associates during the earlier years of Agro-Culture Liquid Fertilizers. He solved agronomic problems that baffled others, and his legendary sales ability was a key factor in the early growth of the company he founded, as well as the early success of its area managers.

But in addition to his scientific and business capability, many also considered him a personal friend. His ready wit and kindly, open demeanor made him easy to like and created valued relationships. As we all mourn the loss of our founder, many have lost a valued friend as well.

Mr. Cook is survived by his wife, Eloise; a son; three daughters, including Jill Bancroft, whose husband, Troy, and sons Nick, Albert and Gerrit now own and operate Agro-Culture Liquid Fertilizers. 💧



D.W. Cook



2010 Vegetable Trials Reveal Some Profitable Fertility Practices

By Dr. Brian C. Levene,
Specialty Crops Research Manager

The 2010 research reports have just recently been finished and they are now available at www.agroliquid.com under the Research Tab.

The 2010 season began with a bang due to the addition of new acreage at the research farm. This allowed me to expand the number of treatments in nearly every trial (crop) from what I had originally planned. Seed orders were increased and many new ideas were evaluated this past year. Still, the basic comparisons of Agro-Culture Liquid Fertilizers and conventional

materials were maintained in all trials.

Additionally, in the new reports, I have tried to focus the information toward key findings this past season and not attempt to discuss every single treatment I evaluated. It's my hope that you will find this new information useful and of value in your cropping systems.

Applications of one of our newest products, ferti-Rain®, showed very good improvement in the yield and value of vine crops treated with this product. The benefit from using ferti-Rain is not just limited to vine crops.

The benefits of using this foliar fertilizer were also seen on crops like broccoli. Previous research has shown benefits from ferti-Rain on peppers and tomatoes, too. The future looks very good for this product.

Nitrogen comparisons were a common theme in many of the 2010 research trials. The report contains information comparing 28% UAN nitrogen, eNhanse™ 28% UAN and High NRG-N™, as well as various application timings for these products.

On the full-season vegetables, the



Getting The Most From Your Soybeans

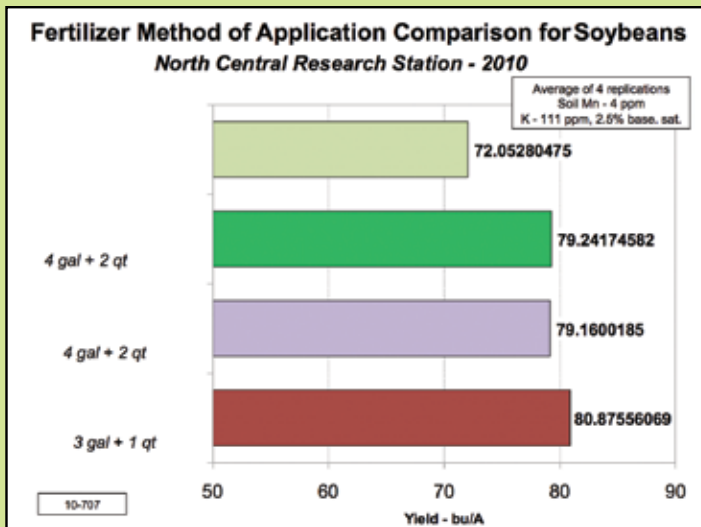
Stephanie M. Zelinko,
Field Agronomy Research Manager

Often, fertility is forgotten with soybeans. Many times, a fertilizer program is developed for another crop in the rotation; the leftovers go to soybeans.

With soybean values increasing, there needs to be a focus on achieving the highest possible yield. By looking at a soil test, a complete fertilizer program, including micro-nutrients, can be developed to fit any soybean production system. The flexibility of Agro-Culture Liquid Fertilizers' products allows for many different methods of applications, all proven to produce yield.

The North Central Research Station has low soil potassium and manganese levels, nutrients essential for optimum soybean yields. According to soil test and yield goal, we apply

POST FERTILITY. A foliar application of Sure-K® and Micro 500™ is just one of several ways to feed soybeans the nutrients they need to hit high yields.



4 gallons of Sure-K® with 2 quarts of Micro 500™ per acre.

We can place product through the drill or planter or make a soil broadcast application, which can be done with a pre-emergence herbicide.

Foliar application is an option by mixing it with a post-emergence glyphosate spray. Agro-Culture Liquid Fertilizers' research and field performance has shown that a foliar application of 3 gallons Sure-K works as well as higher rates of Sure-K applied at planting.

In 2010, a comparison of application methods showed that all methods resulted in at least a 7-bushel-per-acre yield increase. No matter which method was used, similar yield was achieved, leaving growers with options.

These results show that soybean fertility should not be ignored. Agro-Culture Liquid Fertilizers has a program that will match your fertility system and help your soybeans reach their best yield potential. 💧



use of High NRG-N continues to shine in terms of promoting high-quality vegetables and, most often, the greatest yields. UAN solutions containing eNhanse have generally followed very closely to the performance of High NRG-N on the full-season crops.

When working with shorter-season vegetables like cole crops, the eNhanse UAN solutions have outperformed High NRG-N. Controlled-release nitrogen works best if the crop growth is long enough to utilize all the nitrogen.

Injection of these nitrogen products into drip irrigation water clearly benefited crop yields when compared to placing 100% of the nitrogen in the beds prior to planting.

This year in the potato trials, the use of Sure-K® was compared to a couple different potassium programs. Sure-K

again was a top performer in these trials. This was even when one of the clear advantages for Sure-K — foliar applications — wasn't utilized. Placing 100% of Sure-K in the soil at planting yielded more marketable potatoes than the use of potash.

In the potato trials, virtually all sulfur additions produced greater yields. When an appropriate amount of sulfur was combined with Sure-K, its performance was slightly better than potassium sulfate (0-0-50-18S).

Several old questions were confirmed from the trials this year. However, many new questions were generated from the results obtained. Discussion with many producers has occurred over the winter months so far.

Now, it's back to the planning process for the 2011 season. I always



FOLIAR SUCCESS. Trial work has shown that foliar applications of ferti-Rain™ have proven to give vine crops a nutritional boost.

welcome new ideas and questions for expanded research trials from Agro-Culture Liquid Fertilizers. 💧

"I have not failed. I've just found 10,000 ways that won't work."

—Thomas Edison

Continued from page 1

performance of crop nutrients.

Through the utilization of unique formulation processes, nutrient usability is increased many times over that of the "conventional" fertilizers. It's the difference between "usability" and "availability."

Agro-Culture Liquid Fertilizers' founder Mr. Douglas Cook first differentiated these terms many years ago. Many fertilizer manufacturers promote nutrient products placed near the growing plant as being "available" to the crop. But Mr. Cook said just because it's available, or in close placement, it's not necessarily "usable." The nutrient must actually get inside of the plant to be of use.

There are many factors that make "available" nutrition not be "usable." These include high-salt content, not being in an absorbable form, becoming "fixed" by other elements in the soil, competing with other nutrients for uptake, and so on.

So what makes a nutrient "usable?" First, the nutrient should be in a form that is not harmful to the growing seedling. Agro-Culture Liquid Fertilizers' planter-applied Pro-Germinator™, Sure-K® and Micro 500™ use organic-based chemistry for chelation or nutrient attachment. This enables safe delivery of nutrition into the roots.

Another factor that increases usability is keeping the nutrient from becoming inactivated through fixation or tie-up as mentioned above. Certain soil elements like aluminum and calcium can turn up to 90% of fertilizer phosphate into an unusable nutrient.

The phosphate in Pro-Germinator is surrounded by an organic compound, called a flavonol, that repels these soil elements from the phosphate and avoids any tie-up loss. Then this organic compound degrades and releases the phosphate to the roots growing throughout the fertilizer band.

These factors enable crop-nutrient programs to be planter applied. Why broadcast fertilizers if it's going to be outside the root zone? It makes better sense to band-apply LIQUID in the seed zone where it will be used by the crop. Let the fertilizer that you pay precious money to acquire actually do the job you expect it to do rather than stay unused.

All plant nutrients have a critical function. If any one of the critical elements is in minimal supply during growth, the plant will not reach its maximum yield potential, even though all of the other nutrients are in ample supply. This is the principle *Liebig's Law of the Minimum*. Fortunately,

Micro 500 provides superior micronutrient usability.

Research at the 462-acre North Central Research Station has proven that the synergistic effects of nutrient balance are better for corn yield than the application of individual micronutrients, even when applied at higher rates.

What does this mean? It means that all LIQUID nutritional products can be combined into a single planter-applied fertilizer program that's as good as or better than much higher rates of conventional fertilizers. In addition, research has proven that seed-zone applications of phosphate, potassium and micronutrients in strip-tillage systems have been as effective as planter applications, while enabling faster planting.

Agro-Culture Liquid Fertilizers has proven these principles over and over for many years at the North Central Research Station, as have the many growers that rely on LIQUID for total crop nutrition. Visit www.agroliquid.com to see the 2010 Research Report, as well as previous years' replicated plot results.

Remember, you don't have to spend your way to high yields. Save time and applications with "usable" LIQUID nutrition from Agro-Culture Liquid Fertilizers. 💧

Who's Who at Agro-Culture

By Albert Bancroft,
LIQUID Managing Editor

Parkinson Meets Company's Increased Agronomy Needs

A new hire to Agro-Culture Liquid Fertilizers, Alan Parkinson started Jan. 3 in his role as field agronomy manager and already has seen many changes. There was a recent expansion in his Agronomic Sciences department, and he says he is enjoying every minute of his new role. Alan will be working coast to coast with our sales staff to meet increased agronomy needs.



Alan Parkinson

Alan was raised on a potato and grain operation near Rexburg, Idaho, located at Egin Bench. His dad farmed all of his life, along with building a fertilizer and chemical business. Alan's mother was raised on a farm, too. He has two brothers, including one that manages the family farm, and four sisters. Alan and his wife, Michele (Greenhalgh), celebrated their 29th anniversary in December.

The Parkinsons have three children — Dustin, 27, who is married to Brittini (Hjelm); Tana, 24, who is married to Brandon Bennett with two daughters, Taylor, 2, and Brylee, 3 months; and Nicholas, 21. He loves being a father and especially a grandfather.

"It's the best thing in the world," he says.

Alan was born to be outdoors. He loves to camp, ride four-wheelers, landscape a 2-acre yard, garden, woodwork, metalwork, read and learn new things. He has a passion for old World War II airplanes and history about the Civil War, World War II and Vietnam, as well as good, ol' John Wayne movies.

Alan explains that his job entails conducting research and providing tech support for the sales force and Agro-Culture's customers by providing up-to-date data and information.

"I am now working with the Product Field Experiences group, soil sampling and traveling to get exposure to our markets," Alan says. "I'll be looking into ways to provide educational opportunities for all company employees, too."

Alan says the new opportunities this job has provided include traveling and meeting with people who are interested in bringing the best possible solutions to their business, farms, people and communities. He says he likes to visit with people and learn about the interesting things that happen in their world.

"Agro-Culture Liquid Fertilizers is committed to providing the best products and service in the industry today," Alan says. "We are a company that you can trust to keep your interests in mind when prescribing nutrient usage for you situation." 🌱

Avelar Keeps Trucking LIQUID On Time

Alfonso Avelar was hired 4 months ago to deliver premium crop nutrition to Agro-Culture Liquid Fertilizers' customers from the Goodland, Kan., plant. He has heard many stories about the demands of a driver come spring, but he says he is ready to accept the challenge.



Alfonso Avelar

Ponch, as his friends and colleagues call him, has been married to his wife Tara for nearly 16 years. They have three great children — Austin, 17; Aaron, 14; and Adison, 11. They also have two Dachshunds and one Whippet as a part of the family.

"My hobbies are my kids," Avelar says. "I am there to support them in whatever they do or don't decide to do."

He is the president and head coach of their Kansas Kids Wrestling Program in Goodland.

Ponch looks forward to the different challenges this company brings. Getting to interact with customers is an enjoyable part of his job.

"Being a part of Agro-Culture Liquid Fertilizers is like another family," he says.

While he has been busy in his first 4 months, he says he constantly hears, "You haven't seen busy yet!" and he is up for the challenge.

"Our cold weather this winter has made it difficult to deliver product on demand, but I realize that it's important to get product to our customers as quickly as they need it. I'm anxious to meet other growers and be the eyes and ears for this company." 🌱

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www.farmamerican.com



The Benefits of Early Phosphorus and Potassium Applications

By **Cory Schurman**,
Sr. Agronomy Manager

Research has shown that early banded applications of phosphorus and potassium, combined with micronutrients, are beneficial all across the U.S. When the crop is supplied with available, usable forms of the needed nutrients, plant potential can be better developed and early rooting capacity can be increased.

Total phosphorus content of most surface soils in the U.S. averages just 0.6% phosphorus, which compares to an average soil content for nitrogen at 0.14% and potassium at 0.83%.

Making sure we apply usable forms of phosphorus and potassium where and when it can be available is beneficial to early plant growth. The soil reserves can supply only a small fraction of needed nutrients early in the season. Corn will absorb 31 pounds of phosphorus and 126 pounds of potassium.

Phosphorus and potassium are vital components for general health and vigor of all plants. Some of the specific, early response factors associated with phosphorus and potassium include:

- Early root development
- Increased stalk and stem strength
- Improved flower formation
- Seed production
- More uniformity and earlier crop maturity
- Increased nitrogen fixing ability for legume crops
- Improvements in crop quality
- Increased resistance to disease
- Better drought resistance.

The next thing to consider is nutrient placement. Figure 1 shows the nutrient concentration for a grower who applies 100 pounds of nitrogen and 40 pounds of phosphorus; and different types of application methods. Crops in fields where nutrients were applied in a root zone or at-planting band can be 80 times more likely to absorb nutrients.

Early applications of phosphorus and potassium have long been associated with early root development.

It's difficult to estimate, but most agronomists agree that low-salt-index, plant-nutrition products banded in the root zone increase root development both laterally and vertically by 10% to 30%. This gives the crop a much better chance to utilize nutrients both from the soil and the mineral forms found in applied fertilizer.

Another advantage is the crop is much better equipped to grow and produce in the difficult growing conditions that can develop.

Agro-Culture Liquid Fertilizers has multiple years of research developed from soil analysis showing the benefit of at-planting applications of both Pro-Germinator™ and Sure-K®.

Figure 2 reveals a plot last year at a Iowa research station showing more than a 20-bushel yield increase in response to an at-planting application of Pro-Germinator and Sure-K, as well as a greater increase

when the necessary micronutrients are added to the nutrient blend.

Developing a band-applied nutrient program can show benefits to the yield and bottom line of your operation.

Our sales staff is skilled at helping growers develop nutrient programs for their cropping systems to maximize nutrient efficiency, availability and absorption. Have them show you the benefits of early applications of Pro-Germinator and Sure-K, as well as microLink™ programs for your farm. 💧

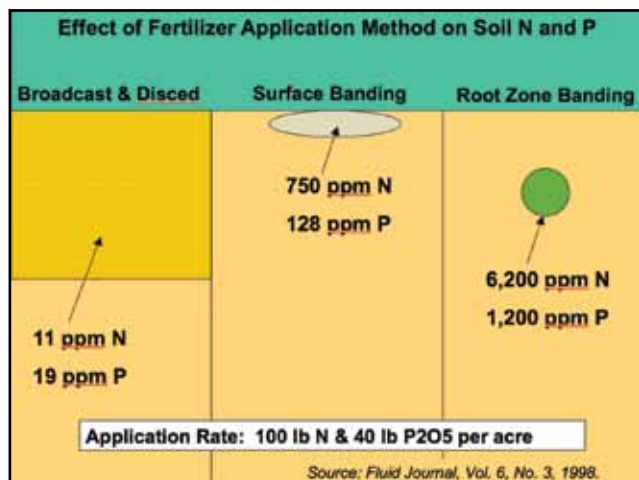


Figure 1.

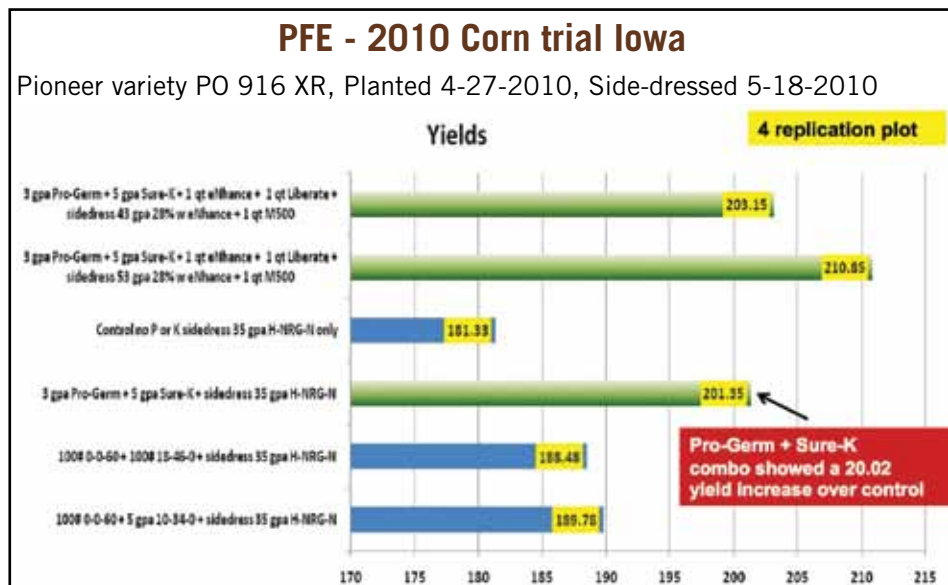


Figure 2.

Your Information Source For Agro-Culture Liquid Fertilizers!

If you'd like to learn more about high-quality Agro-Culture Liquid Fertilizers, contact the sales account manager in your region:



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