

# LIQUID

Does It Better!



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Managing Editor: Albert Bancroft



## PLFP Field Crop Focus: Demonstration of Responsible Nutrient Management®



**By Stephanie M. Zelinko,**  
Field Agronomy  
Research  
Manager

With this spring's expansion of the North Central Research Station (NCRS) and the company's focus on Responsible Nutrient Management®, this year's Professional Liquid Fertilizer Program (PLFP) tour will take place between the new farms and focus on responsible nutrient programs for field crops.

During the event, an afternoon will be spent on the new Farm 8. Here, demonstration plots in corn and soybeans have been established looking at various aspects of fertility programs. Participants will be divided into groups.

The research and agronomy staff will lead hands-on activities and learning demonstrations at six different stops.

### Station 1 — Responsible Nitrogen Management

This comparison looks at different nitrogen sources and rates, along with rescue nitrogen application options for corn.

During the tour, Field Agronomy Research Manager Stephanie Zelinko will provide tips on how to best estimate yield in-season and participants will have the opportunity to do yield checks.

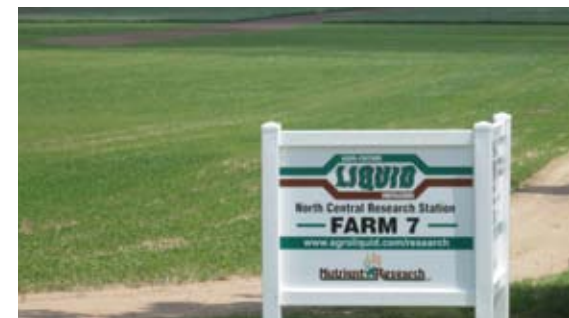
After estimating yield, comparisons amongst treatments will be made,

which will be summarized with the other groups and compared to actual harvest data this fall.

### Station 2 — Responsible Fertilizer Placement

There are a number of options when it comes to fertilizer placement. In this demonstration, participants will observe the differences in corn growth based on fertilizer placement.

Pro-Germinator™ and Pro-Germinator plus High NRG-N™ were placed either in-furrow; 2x2; tube (similar to the Totally Tubular system); or broadcast at planting.



**FIELD TRIP.** Hands-on activities in research plots highlight the annual PLFP meeting.

NCRS Manager Doug Summer will also display our six-row Monosem planter with two rows set up with each of the various planter placements.

### Station 3 — Responsible Corn Programs

Growers have many choices when it comes to fertility programs on corn. Many times, little difference is seen within the plants growing above-

*Continued on page 3*



# “The LIQUID Perspective”

By Galynn Beer,  
Senior Sales Manager

## Agro-Culture Liquid Fertilizers Showing Its Commitment to Growth

**A**s Agro-Culture Liquid Fertilizers looks to the future, we are committing resources to facilitate growth. When you look at increasing sales, one of the most important aspects are the people.

Strategic growth can somewhat use the same theory as the 4-R management theory of crop nutrition. The 4 Rs of nutrient management are right source; right rate; right place; and the right time.

### **The Right People**

In committing to sales growth, the right source becomes the “right person.” This is often a critical decision. In sales, a broad range of skill sets is needed.

The process of finding the right person is taken seriously. We evaluate what we feel is the primary skill needed to manage a specific area. This can vary depending on how products are sold and the primary crops involved.

In our growth initiative in the Corn Belt, we felt that focusing the efforts of one of our sales account managers, Adam Beck, to facilitate growth in Indiana, Illinois and Missouri was the best fit. We felt his experience and knowledge would best be utilized in that geography.

We also added Kurt Fisher to cover existing business, as well as foster growth in Michigan and Ohio. Benjy Conover was hired to handle the northeastern states.

In California, we selected Jim Mills to work the lower half of the state, as well as much of the Coast. Jim has worked in agriculture in these areas for much of his life and we felt he fit that market well.

We hired Armando Gutierrez to cover northern California and also to utilize his bilingual skills to help with our growth in Mexico.

So the “right source,” or person, was determined by looking at what was needed for the area.

### **The Right Rate**

The “right rate” can also be challenging. In the Corn Belt, it seemed pretty easy when we evaluated geography and skills, along with where the potential for growth lies. In California, it wasn’t as easy.

We were fortunate to have multiple candidates with skills that we felt we could utilize. California has a lot of diversity in crops and climates and we decided that two people would be the “right rate” to accommodate growth.

### **The Right Place**

The “right place” can also take much deliberation. You definitely don’t want to just hire the “best person” to sell fertilizer if they live in the desert and are unwilling to relocate. Maybe if you wanted to sell air conditioners or water, but definitely not fertilizer.

So the potential for growth is a factor, as well as the ability to deliver fertilizer, the growing season and diversity of crops. It does us no good to grow sales in areas of like climate and crops if the result is large sales, but a very narrow manufacturing and delivery window due to a lack of diversity that leaves us unable to meet the demands of that market.

### **The Right Time**

The “right time” is also important. Until a company grows to a level to be able to support growth initiatives, it really isn’t prudent to just randomly grow. Infrastructure and personnel take significant capital investments, and a company must be large enough to access the necessary capital to give a strategy time to succeed.

Agro-Culture Liquid Fertilizers’ ownership has managed the company in a way that allows us to strategically look at the 4 Rs of sales growth and know that the resources will be there to allow the time to achieve success. As one success is achieved, then that allows another growth project to be undertaken.

While someone from the outside may not understand our decisions, we actually look at a lot of variables and try to plan for our growth. We owe it to our sellers and end users — the farmers — to manage our resources and build growth in a manner that allows us to continue to provide quality products and service to existing customers, while also introducing the company to new markets.

I hope you will continue to find that we are not only a great asset to your business, but that you will also sit back and, as our founder Mr. Cook says, “Watch us Grow!” 💧

Continued from page 1

ground, but greater visual differences between programs can be seen belowground.

Here participants will have the opportunity to dig up plants from different programs and observe their root systems. They will then try to match the root systems to the corresponding fertility programs. Senior Research Manager Dr. Jerry Wilhm will be on hand to point out the differences between the programs.

#### **Station 4 — Responsible Foliar Applications**

This stop contains a combination of soybean foliar programs and the use of ferti-Rain™ on corn, soybeans and pickling cucumbers.

The first part of this tour will be led by Phil Dush, a North Central Research Station assistant (and an Agro-Culture Liquid Fertilizers' user on his own farm). Comparisons of different combinations of fertilizer designed for foliar programs will be observed.

The second part will be led by Senior Agronomy Manager Cory Schurman. Participants will see

the benefits of foliar ferti-Rain applications on a wide range of field and vegetable crops and learn how ferti-Rain is working on many crops across the country and beyond.

#### **Station 5 — Responsible Nutrient Management Beyond the NCRS**

Making a special appearance on the tour this year will be Brian Hefty, cohost of Ag PhD.

Brian will discuss how Hefty Seed Co. has used Agro-Culture Liquid Fertilizers in their business and specifically on a new farm they call the "Blank Slate." This location has very low nutrient levels. As a test this year, they are comparing different rates of Pro-Germinator™ and Sure-K™ in this low-fertility situation.

#### **Station 6 — Taste the Responsible Difference**

The last stop will focus on specialty crops. You can learn more details in Dr. Brian Levene's article, entitled "Taste The Difference Of Vegetable Fertility," in the righthand column. 💧



## **Taste The Difference Of Vegetable Fertility**

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

**Y**ield is important to every grower, but to a vegetable grower, this is only part of what determines value. The basics of crop value are measurable factors, such as size, color and maturity date in order to be first to market.

Still, there remain quality factors like taste and shelf life that are harder to measure and quantify. Can a fertility program impact the way a vegetable tastes or stores, or is their value determined only by genetics and the environment?

This season, several combinations of conventional fertilizers and Agro-Culture Liquid Fertilizers' products have been researched on many

**"Can a fertility program impact the way a vegetable tastes or stores?"**

vegetables. The major objective for all trials is to learn the marketable yield from the use of Agro-Culture Liquid Fertilizers' products.

Still, when variety, growing season and equivalent nitrogen, phosphorus and potassium fertility levels are used, will the vegetables taste and/or store the same?

Several vegetable trials should be mature and available for tasting at our Professional Liquid Fertilizers Program. Will you be able to taste a difference between Sure-K™ and standard potash in tomatoes or cantaloupe? Can the use of LiberateCa™ or ferti-Rain™ produce a different flavor in green peppers or cause a more appealing look to various vegetables?

These are only a few of the types of comparisons that visitors to our research farm will be able to experience.

The actual vegetable plots will not be part of the main tour this year. However, there will be an opportunity at the end of the farm tour for a brief visit of the vegetable plots for anyone who is interested. Hands-on experience with the harvesting of vegetables will also be available if you're interested. 💧

### **The Rest Of The North Central Research Station!**

This year's Professional Liquid Fertilizer Program tour will focus on about 3 acres of one farm. So what else is going on around the rest of the farm?

As always, the NCRS has a wide range of experiments set up on different field crops. In fact, there are more than 2,300 replicated plots established this year. Most comparisons are done on the main crops grown in the area, such as corn and soybeans, but we also continue to test other Michigan-grown crops like black beans, navy beans, sugarbeets, alfalfa and winter wheat.

To better support our customers, we added plots of milo and sunflowers. We've grown both crops before, with little luck on getting reportable data due to bird damage. So far, the crops look great. Now we have to hope the birds stay away until harvest.

To keep up to date with the daily activities at the North Central Research Station, go to our blog at <http://ncrsresearch.blogspot.com>.





# What's Going On In Your Fields?

By Cory Schurman,  
Senior Agronomy Manager

During the growing season, growers drive past their fields and notice yellow or stunted spots, or notice how green or tall their crops appear. The weather has a tremendous effect on growers' crops, and growers have no control on this major factor in crop yield potential.

For a grower to be able to work with the stress and weather patterns that each year brings, a thorough understanding of the role of soil biology, soil balance and nutrient interaction is critical to making sure farmers are helping their soil provide the necessary nutrients to help their crops.

Understanding the role of biology in soil helps a grower understand and prepare the crop's ability to withstand or perform in less-than-perfect growing conditions.

Usually, people think of microbes as agents of disease, but in truth they are the tiny workers and miracles of plant growth, soil aeration and nutrient availability to your crops. A microbiologist once remarked that a soil devoid of microorganisms is dead or incapable of growing healthy crops.

Fertile soil contains a wide variety of microbes, including bacteria, fungi, protozoa and algae. Mostly, these are found in the rhizosphere, or the region of soil around the crop's root systems, where they decompose organic matter into humus.

The 16 nutrient elements that are essential to healthy plant growth and seed production are listed in Table 1. It's apparent from the table that plants absorb most of the elements in the ionic forms of cation or anion, with a few being absorbed in the molecular ionic form.

Regardless of the source these nutrient elements begin from — whether organic forms present in the soil or inorganic forms that come from fertilizers — they must be broken down into simpler ionic forms before they can be absorbed by plant roots.

The conversion or breaking down of these nutrients that is carried out by the microorganisms, either directly or indirectly, is a process called mineralization.

**Mineralization** can be visualized as the preparation of food for a plant by the microorganisms. Imagine that the microorganisms are cooks working in a kitchen called the rhizosphere. Soil organic matter and fertilizers are the groceries, and the enzymes in the soil are the recipes.

The complex compounds from fertilizers and organic matter are broken down into simple ionic elements that the plants can then use.

There are several cycles that occur to make nutrients available. The first is the nitrogen cycle. The primary source of nitrogen for plants is from atmospheric nitrogen gas. The microbiology transform the nitrogen gas into plant food that plants can take up.

The **nitrogen fixation cycle** is where the cyanobacteria, actinomycetes and rhizobium bacteria fix nitrogen gas in the plant through aerobic actions.

The **ammonification cycle** is where the nitrogen-fixing bacteria from the nitrogen-fixing cycle above bring atmospheric nitrogen as ammonia into the biological world, where decomposition and bacterial processed ammonium is released.

During the **nitrification cycle**, ammonium from the two processes above is converted to nitrates with the help of microorganisms. The first step is oxidation of ammonium from inorganic nitrate and the second is to convert nitrite into nitrate.

The **denitrification cycle** is an anaerobic process that converts the nitrates back to atmospheric nitrogen. This cycle completes the nitrogen cycle.

**Phosphorus** is second to nitrogen as the food most needed by plants. It's found in both organic and inorganic forms in the soil.

The primary source for organic phosphorus comes from the breakdown of vegetation and residue. This form makes up approximately 15% to 25% of the total phosphorus in the soil, and is readily available to be released to the plants by the microorganisms through four processes of alteration,



**GOT GOOD SOILS?** The health of your crops and their roots depend upon the microbial activity in your soils, soil fertility balance and critical nutrient interaction.

mineralization, immobilization and oxidation.

Solubilization is how fertilizer is made available by the microorganisms in the soil. They produce organic acids that convert phosphorus salts into dibasic and monobasic phosphates that can be taken up by the plant.

**Sulfur** is the fourth major element required for healthy plant growth. Recent research shows this nutrient is increasingly needed due to low sulfur fuel and less sulfur dioxide coming from coal-burning plants, along with increasing yields from crops needing more sulfur.

Sulfur is an essential component of the amino acids, which are required for protein synthesis and are required in the nodule formation in legumes as well.

In the soil, sulfur is present, but at levels lower than crops need. It can only be released by microorganisms; thus, it ties in with the nitrogen cycles and can greatly increase nitrogen availability.

There are four main processes of sulfur metabolism in the soil — mineralization, immobilization, oxidation and reduction. All four are utilized in the biological sulfur cycle.

These bacteria work under anaerobic conditions, and this is one of the reasons sulfur becomes deficient in water-logged soils.

**Potassium** occurs in the ionic form (K<sup>+</sup>) in the soil and is taken up as such by plants; however, organic and inorganic acids produced by microorganisms help to solubilize potassium locked in the soil.

Potassium is required for sugar translocation and starch formation in plants, helps plant root growth and is toxic to fungal diseases in the soil. Potassium is noted for increasing the quality and size of fruits, grains, nuts and vegetables.

**Micronutrients** have been proven to be as important as the primary nutrients to healthy plant growth.

As crop yields increase, a grower needs to make sure the micronutrients that interact with other nutrients are available in the soil both for total nutrient uptake and plant micronutrient needs.

**Iron** is essential for chlorophyll formation in the plant, and organically, forms of iron will complex with sugars and simple organic acids in the soil working with the microbiology process.

**Manganese** is essential for chlorophyll formation and plant metabolism. The unavailable forms of manganese need to be transformed by the microflora in the soil.

**Zinc** is essential for metabolism in the plant and is tied to phosphorus efficiency within the plant and soil.

**Table 1. Essential Elements Required By Plants**

Element Name	Chemical Symbol	Form Available To Plants: Ionic	Form Available To Plants Common Name	% Concentration In Dry Tissue
Nitrogen	N	NO <sub>3</sub> <sup>-</sup> , NH <sub>4</sub> <sup>+</sup>	Nitrate, Ammonium	1.5%
Potassium	K	K <sup>+</sup>	Potash	1.0%
Phosphorus	P	H <sub>2</sub> PO <sub>4</sub> <sup>-</sup> , HPO <sub>4</sub> <sup>2-</sup>	Phosphoric Acid	0.2%
Calcium	Ca	Ca <sup>2+</sup>	Calcium	0.5%
Magnesium	Mg	Mg <sup>2+</sup>	Magnesium	0.2%
Sulfur	S	SO <sub>4</sub> <sup>2-</sup>	Sulfate	0.1%
Zinc	Zn	Zn <sup>2+</sup>	Zinc	0.002%
Iron	Fe	Fe <sup>2+</sup> , Fe <sup>3+</sup>	Ferrous	0.01%
Manganese	Mn	Mn <sup>2+</sup>	Manganese	0.005%
Copper	Cu	Cu <sup>2+</sup> , Cu <sup>+</sup>	Copper	0.0006%
Boron	B	H <sup>3</sup> BO <sup>3</sup>	Boric Acid	0.002%
Molybdenum	Mo	MoO <sub>4</sub> <sup>2-</sup>	Molybdate	0.00001%
Chlorine	Cl	Cl <sup>-</sup>	Chloride	0.01%
Oxygen	O	O <sub>2</sub> , H <sub>2</sub> O	Oxygen	45.0%
Carbon	C	CO <sub>2</sub>	Carbon Dioxide	45.0%
Hydrogen	H	H <sub>2</sub> O	Water	6.0%

**Boron** is essential in metabolism and helps plants to set and hold reproductive sites.

**Copper** is helpful in plant growth and works in plant metabolism.

**Magnesium** is a key ingredient in chlorophyll and is the element to which nitrogen attaches to gain that deep, green color growers like to see in their crop.

When a grower understands how soil microbiology systems work, he can till and prepare soil for optimum aeration; apply the right ratio of nutrients the soil needs for optimum nutrient uptake and soil balance; and create an environment where fields have the maximum level of microbiology needed for high crop yields, even in adverse conditions.

Microbiology is critical to nutrient uptake and availability in the soil, but it cannot carry the nutrient load by itself. Nutrients from applied fertilizer are needed. Therefore, it's equally important to use high-grade or more usable fertilizers that cause little or no damage to soil microbiology. It's high-salt-index materials or heavy metals that damage soils.

If the fertility program a grower uses is microbiologically compatible, the nutrient availability from fertilizer sources and soil organic forms can be increased many times over.

This is one of the key reasons the Agro-Culture Liquid Fertilizers' line of products work so well. With low-salt indexes and microbiologically compatible formulations, the nutrient availability has been proven to be higher, supplying the high levels of nutrients that high-yielding or stressed growing conditions require.

To understand the microbiology-promoting characteristics and more-available nutrients that come in fertilizers from Agro-Culture Liquid Fertilizers, contact one of our sales members today. 💧



## A Fertile Blueprint For Success

L.A. Hearne Co. has roots as deep as the underground aquifers that nourish the Salinas Valley.

**By James Mills**  
Sales Account Manager

**A**griculture, perhaps more than any other industry, has a strong tradition of family business involvement. Many never make it through the difficulties of generational transition, while a few not only make it, but continue to expand and flourish through the vision and dedication of the next generation of family leaders.

The L.A. Hearne Co. was founded in 1938 at King City, Calif., by Larry Hearne. The company that bears his name continues to build on the solid foundation he established: grow as a result of the integrity of ownership and employees, provide exceptional customer service and consistently offer the highest-quality products day in and day out.

The first commodities L.A. Hearne Co. handled were dry beans and grains grown locally in the southern end of the Salinas Valley. Processing and marketing these commodities continue to be an important division today.

In fact, the company is a leading lima bean processor and marketer to both domestic and international markets.

### Diverse Product Offering

Over the years, the company expanded its operations in response to the needs of its growing customer

**“Agro-Culture Liquid Fertilizers’ low-salt index and high-efficiency plant uptake fit perfectly with what we are trying to accomplish with our growers...”**

base. A feed division was established, providing high-quality feeds for both commercial livestock and pet markets. Even California Fair Grand Champion market beef have flourished on a King Feed diet!

L.A. Hearne Co. is also a California Certified Seed Producer offering cover

crop and grain seeds to the state’s growers.

With more than 200,000 square feet of indoor warehouse space, the company offers a variety of storage and distribution services. These services are complemented by a diverse trucking company also based at the company’s headquarters in King City. Its modern fleet of trucks

handles all types of bulk and packaged goods, both liquid and dry.

In addition to serving commercial growers and ranchers, local residents have the opportunity to shop at two retail stores, one at each end of the Salinas Valley. The stores are known as “The Country

Store with More.”

Top-quality, brand-name Western wear, livestock and pet food, supplies, equipment and fencing materials, and a variety of fun stuff that highlight the farm and agricultural heritage of the area are offered.

The L.A. Hearne Co. has a lot going on and we haven’t even mentioned their fertilizer division yet!

While it looks like a pretty ambitious agenda, bear in mind that the third generation of leaders has at least eight family members who have decided to make a career in helping the company grow and prosper.

### Low-Salt Fertilizer Value

Having your name on the door brings the added responsibility of remaining true to long-held company values while maintaining the flexibility to adjust to changing industry and market conditions to ensure continued success.

One key effort of L.A. Hearne Co. is ensuring the success, development and growth of the liquid and dry fertilizer di-



**FERTILE VINEYARDS.** L.A. Hearne agronomist Michel Hardoy examines vineyards where Agro-Culture Liquid Fertilizers’ products are a major component of high-quality grapes.

vision — both conventional and organic.

The fertilizer division is overseen by company president Francis Giudici, with the assistance of respected industry veteran and long-time employee Michel Hardoy. Agro-Culture Liquid Fertilizers' association with the L.A. Hearne Co. dates back to 2002.

"The entire Salinas Valley is irrigated with water pumped from huge underground aquifers," Hardoy says. "The past 10 years have brought increasing concerns about both the availability and quality of the water supply. Salt-water intrusion and potential nitrate contamination are issues that we face.

"Agro-Culture Liquid Fertilizers' low-salt index and high-efficiency plant uptake fit perfectly with what we are trying to accomplish for our growers. I also appreciate the company's commitment to Responsible Nutrient Management®. This is a key focus for California producers, and helps us differentiate ourselves from our competition."

Monterey County agriculture had a production value of more than \$4 billion, according to the 2009 Monterey County Crop Report. Eleven crops had a value of over \$100 million. The county ranks in the top-four agricultural counties in the state.

One crop that continues to flourish, particularly in the warmer southern end of the valley where Hearne is located, is wine grapes. Of the 34 California counties that grow wine grapes commercially, Monterey County ranks sixth in harvested acreage with just over 40,000 acres of grapes harvested annually. That's roughly the same size as the Napa Valley.

Over 20 different varieties are grown and produced here, with Chardonnay and Pinot Noir leading the way.

Hardoy continues to see great results in wine grapes using a combination of all three Agro-Culture Liquid Fertilizers' benchmark products — High NRG-N™ with slow-release nitrogen for feeding throughout the growing season; Pro-Germinator™ to provide multiform phosphorus to produce strong, healthy fruit; and Sure-K™ to provide the high-quality potassium that grapes require.

The success of these high-efficiency products is complemented by



**DIVERSE OFFERING.** L.A. Hearne's retail store, located next to the company's headquarters in King City, Calif., provides customers a wide array of products and services.

Micro500™ and custom blends of micronutrients to create a total nutritional program.

"Our blending facility has more than 300,000 gallons of covered liquid fertilizer storage," Hardoy says. "We also have significant tank storage on farms and vineyards throughout the valley where we can deliver blended products or direct shipments from the company's production facilities."

### High-Value Crop Fertility

In addition to wine grapes, Hardoy also trusts Agro-Culture Liquid Fertilizers' products to satisfy the fertility requirements of tomatoes, peppers and strawberries.

"Sustainability in agriculture is extremely important," Hardoy adds. "Agro-Culture Liquid Fertilizers' products are cleaner, with a much higher percentage of nutrients actually available for uptake by the plant.

"This means lower applied rates, and the results are seen where they are supposed to — in the quality of the fruit produced and on the grower's bottom line.

"I look forward to visiting the company's research farm to see

what's new, particularly for our crop base here in California."

The L.A. Hearne Co. continues to grow and prosper. Its focus is on the success of its growers and customers.

And when you live, work and conduct business in your local community for 72 years, isn't that the way it should be?

Agro-Culture Liquid Fertilizers is proud of our association with L.A. Hearne Co. and looks forward to "Prospering the Farmer" together in the years and generations to come. 💧



**TOP-NOTCH FACILITY.** L.A. Hearne has invested in a state-of-the-art liquid fertilizer facility to ensure easy access and high-quality Agro-Culture Liquid Fertilizers' products to its producers.



# Rademacher Receives Cook Ag Leadership Award

By Lonny Smith,  
Senior Marketing Manager

Agro-Culture Liquid Fertilizers presents the Douglas Cook Ag Leadership Award to one returning college student pursuing either an undergraduate or graduate degree in agriculture or an agribusiness-related field.

This individual must be in good academic standing and have demonstrated exceptional leadership in the promotion of agriculture at the state, national or international level.

The Douglas Cook Ag Leadership Award winner is not required to have any previous relationship to Agro-Culture Liquid Fertilizers, but is required to have had previous involvement in either production agriculture or agribusiness prior to beginning his or her postsecondary education. The recipient of this award is selected for the merit of his or her application and also the content of their essay submission.

The 2010 recipient of the \$3,500 Douglas Cook Ag Leadership Award is Ryan Rademacher of Eagle, Mich.

Ryan, the son of Thomas and Ann Rademacher, will be a senior this fall at Michigan State University, where he is studying for a career in production

agriculture. He is currently working as an intern for Dow AgroSciences in central Michigan.

The following is his essay.

### **Impacting Agriculture** by Ryan Rademacher

*As many new technologies emerge within agriculture and with food production becoming a value-added process, it has never been more of an exciting time to enter production agriculture.*

*I have been raised on a family farm and have learned production practices from both my father and grandfather. Being able to experience production agriculture practices has led me to pursue a higher education, which will aid my transition to become the third generation of our family farm.*

*To prepare myself for a role in agriculture, I have majored in agribusiness management and minored in agronomy at Michigan State University.*

*While attending school, I have taken two summer internships with Wilbur-Ellis Co. and will be taking a third internship with Dow AgroSciences during the summer of 2010. The experience that I have gained has defined the desire I*

*have to make an impact in production agriculture.*

*Working heavily in agronomy, it has become my passion to utilize research through field trials and test plots to increase crop yields. I have been fascinated by breeding and plant genetics that have reduced our dependence on herbicide and insecticide use.*

*Not only have plant genetics been improving, but the use of fertilizers has also become very interesting to me.*

*While working for Wilbur-Ellis Co., I was able to take on a project conducting foliar feeding of alfalfa and soybeans. The boost in production was evident, which has led me to begin incorporating foliar feeds into our nutrient management program on our family farm.*

*My desire to increase crop yields and productivity has developed from previous work experience and research that I have been able to help with. As our world population continues to increase,*



Ryan Rademacher

## 'LIQUID Does It Better' Scholarship Winners Announced

By Lonny Smith,  
Senior Marketing Manager

The "LIQUID Does It Better" scholarship is awarded annually to two individuals who are either high school seniors or continuing college students at the time of application. They must be pursuing a degree in agriculture or an agribusiness-related field.

These individuals must have maintained an average or above academic record and be either a customer or associate of Agro-Culture Liquid Fertilizers or an immediate family member of a customer or associate.

The recipients of the "LIQUID Does It Better" scholarship are awarded \$2,500 to help defray their academic expenses.

The 2010 "LIQUID Does It Better" scholarship winners are Ryan Mathewson of Axtell, Kan., and Brent Sexton of

Rockwell City, Iowa.

Mathewson is the son of Robert and Lisa Mathewson. Ryan will be returning to Kansas State University as a senior pursuing a degree in agricultural sales.



Ryan Mathewson



Brent Sexton

Sexton is the son of Keith and Barb Sexton. Brent graduated from Rockwell City Lytton High School and will be attending Iowa State University to study animal science as his pre-veterinary medicine emphasis.

Congratulations and best wishes to both Ryan and Brent.

the need for efficient food production must increase as well. It has been my passion to work at the production level and try to meet the efficiencies that will be required in the future to meet our global needs.

Due to our family farm's size, I will not be returning home to be a full-time farmer immediately upon graduating from Michigan State University. My work experience and college education has prepared me to gain a career with an agricultural input supplier.

I will be working within the fertilizer, crop protection and seed business while continuing to build our family farm to an economical size that can support another individual.

It is one of my career goals to help bridge the gap producers have with setting a desired yield goal, but not

getting the results. Being involved in retail sales upon graduation will allow me to continue with some of my research experience and continue using test plots to test various qualities. It is my goal to take "High Performance" fertilizers and introduce such products to maximize grower's yields and return on investments.


Many technologies exist today that an older-generation producer may not be taking full advantage of. Technologies, such as guidance systems, variable-rate technology and grid sampling, are some of the few emerging efficiencies that need to be utilized by nearly all producers.

I would like to make it my goal to assist those that may be lagging in the adoption process and begin to incorporate possible variable-rate technology into their farm to increase efficiencies in agriculture.

My passion for agriculture remains at the production level. It is my dream to one day return back home to our family farm as a full-time farmer after working within the agricultural industry.

By continuing to use modern advancements in seed, fertilizer and good agronomic practices, I can increase producer's efficiencies to help provide food for our growing world population.

Ryan, we thank you for your commitment to the future of agriculture. Individuals like yourself, who will define and carry agriculture forward, are crucial to the future of our country and it's gratifying to participate in your academic pursuits.

For more information on these scholarships, please visit [www.agroliquid.com/scholarship](http://www.agroliquid.com/scholarship). 

## Sharing The Faith In East Africa

By **Tim Brussel**,  
North Central Research Station Assistant

In June, the privilege was given to my wife, Pauline, and I to travel to Tanzania in eastern Africa for a very special purpose. We spent 2 weeks in the city of Arusha teaching the word of God in a Bible school totally free for the African students.

We partnered with Faith Tech International Ministry, which has been conducting Bible schools since 1979 here in the United States and abroad.

This no-frills ministry is completely focused on setting up and staffing free Bible schools that equip the students with the fundamentals of God's doctrines for a twofold purpose — that they can live in right relationship with God, and be prepared to teach the lessons to others.

The Faith Tech lessons are the most thorough teachings from the Bible I have found. They are simple, yet not incomplete.

This trip to Arusha was the fifth time I have been to Africa to teach in a Faith Tech Bible school. So far, my mission travels include Kampala, Uganda; Lagos, Nigeria; Freetown, Sierra Leone; Dar Es Salaam, Tanzania; and Arusha, Tanzania. Each trip has been very different, and has challenged me in my faith in Jesus Christ and has helped me to grow in that faith.

On a mission trip like this one, we have to completely trust The Lord to watch over and protect us in everything we do.

Africa is long way from the USA, and God is absolutely faithful to us as we follow and serve Him and others.

It's not uncommon for the instructors of these Bible schools to come back with the sense that they have learned more than the students because of the insight gained in

working hand in hand with God. This is definitely true for Pauline and me, too.


The beauty of the country of Tanzania and the hospitality of the African people made our trip enjoyable and memorable.

It would really be a mistake if I did not comment about the Christian people of Arusha. They are truly wonderful, gracious and generous people. They arranged very good housing for us, and charged us half the normal rate, calling it their missionary rate.

To show their love and appreciation for our coming to teach there, they fed us authentic African food (we had banana stew!) and honored us as special guests. Their favorite greeting is, "You are welcome," and we know they meant it.

The best compliment I can pay them is they show the love of Christ in a very sincere way. They sacrificed their time and energy to study the Bible 3 hours a day, 5 days a week for 8 weeks.

Their love for The Lord is clearly seen by all who volunteered to teach in this school.

We are blessed for having gone, and The Lord willing, we will return to share with them again. 



**GODLY LESSONS.** Tim Brussel (left) provides a Bible lesson with the help of a Tanzanian interpreter during a 2-week mission trip to East Africa.



# Join Us At The 2011 National No-Tillage Conference

Three no-tillers will be honored by Agro-Culture Liquid Fertilizers with the Responsible Nutrient Management Practitioner's award at the January event in Cincinnati.

Agro-Culture Liquid Fertilizers is pleased to once again participate in the premier no-till educational event in the nation as a Title Sponsor of the 2011 National No-Tillage Conference.

Featuring more than 40 speakers with top-notch practical no-till tips and techniques, this 4-day event will be held from Jan. 12 to 15, 2011, in Cincinnati, Ohio, at the Hilton Hotel.

This is the fifth consecutive year that Agro-Culture has sponsored this highly informative event, featuring 20 general session speakers, 20 no-till classrooms and 60 no-till roundtables with nearly 100 hours of networking.

Agro-Culture takes a high view of responsible nutrient use and has teamed with *No-Till Farmer*, the organizers of this 19th annual event, to cosponsor the 3rd annual Responsible Nutrient

Management Practitioners Program. Three no-tillers will be honored at a special luncheon.


We are currently accepting nominations of respected no-tillers practicing efficient, effective nutrient use (including self-nominations) at [www.ResponsibleNutrients.com](http://www.ResponsibleNutrients.com). Learn more about the program and view past winners at that site. Recipients of the award will receive free registration to the conference from *No-Till Farmer*, while Agro-Culture Liquid Fertilizers will provide free transportation and lodging.

Here are some of the speakers signed on to present at this annual gathering of the no-till nation.

- University of Maryland soil scientist Ray Weil will present on "Dealing With Dirt: What You Need To Know About Soil Quality," and "Practical Steps To Make Plants

Work For You And Your Soils."

- University of Nebraska ag engineer Paul Jasa will highlight how no-tillers can manage variables to get a uniform crop stand.
- Western Illinois University soils specialist Joel Gruver will discuss alternative ways to get cover crops planted on time and how to manage the undermanaged nutrients.
- Renowned no-till consultant Joe Nester of Bryan, Ohio, will tackle how to overcome the troubles seen with glyphosate and how to use variable-rate technology to tailor a cost-effective nutrient program.

You can get more information about the conference or see the complete program online at [www.NoTillConference.com](http://www.NoTillConference.com). You can register online, download a registration form or call (866) 839-8455 for more information. 

## CALENDAR OF EVENTS

- **Farm Progress Show**  
Boone, IA • Aug. 31-Sept. 2
- **Clay County Fair**  
Spencer, IA • Sept. 11-19
- **Big Iron Farm Show & Expo**  
West Fargo, ND • Sept. 14-16
- **Farm Science Review**  
London, OH • Sept. 21-23
- **Sunbelt Ag Expo**  
Moultrie, GA • Oct. 19-21
- **Pacific Northwest Vegetable Conference**  
Kennewick, WA • Nov. 17-18
- **Amarillo Farm & Ranch Show**  
Amarillo, TX • Nov. 30-Dec. 2
- **Hermiston Farm Fair & Trade Show**  
Hermiston, OR • Dec. 1-3
- **Great Lakes Fruit, Vegetable & Farm Market Expo**  
Grand Rapids, MI • Dec. 7-9
- **Nebraska Power Farming Show**  
Lincoln, NE • Dec. 8-10
- **Ag & Construction Expo**  
Billings, MT • Jan. 6-8, 2011
- **National No-Tillage Conference**  
Cincinnati, OH • Jan. 12-15, 2011
- **MAGIE Ag & Industrial Expo**  
Great Falls, MT • Jan. 21-23, 2011
- **Iowa Power Farming Show**  
Des Moines, Iowa • Feb. 1-3, 2011
- **Mid-Atlantic Fruit & Vegetable Conference**  
Hershey, PA • Feb. 1-3, 2011
- **Spokane Ag Expo**  
Spokane, WA • Feb. 1-3, 2011
- **Mid-Tex Farm & Ranch Show**  
Waco, TX • Feb. 8-9, 2011
- **World Ag Expo**  
Tulare, CA • Feb. 8-10, 2011
- **Northwest Iowa Ag Outlook**  
Spencer, IA • Feb. 16, 2011

- **Montana Agri-Trade Expo**  
Billings, MT • Feb. 17-19, 2011
- **Mid-South Farm & Gin Show**  
Memphis, TN • Feb. 25-26, 2011
- **Eau Claire Farm Show**  
Eau Claire, WI • Mar. 1-2, 2011
- **North American Farm & Power Show**  
Owatonna, MN • Mar. 17-19, 2011

### "Hippie" Wears LIQUID Into The Rodeo Ring

Follow Dave Engelkes as he carries the LIQUID logo into the rodeo ring to protect bull riders at the following events:

- Sept. 3-4... Owatonna, MN
- Sept. 15-18... Nimrod, MN
- Sept. 25-26... Oxford, MN



## Who's Who at Agro-Culture

By Albert Bancroft,  
LIQUID Managing Editor

### Thoms Keeps Iowa Production Site Running Smooth

Clint Thoms started his career with Agro-Culture Liquid Fertilizers 6½ years ago. The plant in Williams, Iowa, where he serves as site supervisor was nothing then like it is today, Clint says. His start with the company began with loading trucks. Then he moved into the products side of the plant.

"There was a small containment and an old mobile home for an office. Tasks have changed a lot from then to now," Clint adds.

Even the new plant that was built after his arrival has been expanded with a second rail spur and the addition of another building for inventory storage, Clint explains.

Clint, who is single, has a brother and sister. He enjoys hunting and fishing and raises cow-calf pairs.

In his current position as Iowa Site Supervisor, Clint says the most enjoyable part of his job is the diversity of different tasks he completes throughout the day.

Looking into the future, Clint looks forward to meeting the demands of Agro-Culture Liquid Fertilizers' customers as the business continues to grow. ♪



Clint Thoms

### Hines Crunches The Numbers For ACLF

In 1994, Dave Hines hired on at Agro-Culture Liquid Fertilizers and split his time between the St. Johns, Mich., plant and the research farm. After a couple of years, the capacity of the plant had increased to the point he took on a full-time role.



Dave Hines

"As plant supervisor, I learned how the entire manufacturing system works, as well as loading and unloading trucks and rail cars," he says.

Most recently, Dave's duties have changed to that of Inventory Systems Manager, working alongside production and utilizing the computerized system. He maintains inventory records for all production sites, assists with forecasting and the purchase of raw materials, keeps state licenses and registrations current, and reports tonnage.

Dave has been married to Rosemary for 33 years. They have two daughters — the oldest, Cassandra, resides in Spring Lake, Mich., with her husband, Matt Anderson; the youngest, Susan, is a history teacher in Columbus, Ohio.

The most enjoyable part of his job, Dave says, is working with details and making sure the numbers add up correctly. From his point of view, opportunities are endless with the company, adding "the numbers don't lie."

"A program was laid out to grow 20% for 20 years. We're 10 years into this plan and ahead of schedule," Dave says.

Dave adds the growth of the company means one person's decision affects more people and is more complicated than it used to be. ♪

## Customer Q & A

### Why Does LIQUID Work For You?

Tom and Jeff Thompson,  
Harmony, MN

"We've been using Agro-Culture Liquid Fertilizers on our farm for around 15 years, and it has proven to us again and again to be a great decision. It has improved our yields year after year. It has provided us the ability to purchase our fertilizer early, as well as the opportunity to price our fertilizer, know our cost and secure a profit when marketing our grain.

"Onfarm storage means our fertilizer is here when we are ready to start planting. Also, having the total package is a big deal for us.

"Applying all of our Pro-Germinator™, Sure-K™ and all of our micro-nutrient needs on the seed, as well as applying all of our High NRG-N™ in a 4-by-2 placement at planting, saves us time. We feel Agro-Culture Liquid Fertilizers does what is best for the customer and takes pride in the crops just as much as the producer does.

"We are now looking at how we can make the company's fertilizers work even more efficiently. We have incorporated variable-rate technology when applying Pro-Germinator



**TIME SAVINGS.** Applying liquid fertilizer with the planter is efficient and effective.

and Sure-K. We feel this will save us money, but more importantly, make the fertilizer work to its highest potential and increase our average yields significantly.

"These guys are very innovative and we look forward to any new products Agro-Culture may come out with to help advance farming." ♪

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## 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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**Bob Baxter**

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