

Ag Concepts® Circular



Success Stories: Program on Dry Beans

We hear many stories from our dealers and growers about the success Ag Concepts products have in the field. We enjoy hearing about the positive effects of our products on different crops in locations all over the country and would like to share them with you. The following story is about the effects observed after applying **AgZyme** combined with **Super Hume** to dry beans. This story comes from one of our dealers located in Amarillo Texas. The dealer was working with a grower on his dry bean field located in Southeast Colorado. The dealer applied **AgZyme** with **Super Hume** because he had enjoyed previous success with that program on dry beans. **AgZyme** was applied at 12.8 ounces per acre and **Super Hume** was applied at 1 gallon per acre in a 2x2. Prior to harvest the grower noticed the treated side of the field had more plants and more bean pods per plant than the untreated side of the field. The dealer was not surprised at the increase in the number of plants and bean pods because he was familiar with how well the program worked on dry beans. Both the grower and the dealer were very surprised however by the visual difference in the health of the beans due to the **AgZyme** plus **Super Hume** treatment. The bean plants from the treated side had much longer and healthier roots and the pods were much larger and fuller than the pods from the untreated side. The grower not only had more bean pods but they were of better quality as well. Poor weather conditions prevented the grower from harvesting as early as usual so we do not have the total yield data at this time. If you are interested in learning more about the products featured in this story please contact Ag Concepts at (208) 388-1131 or e-mail us at agc@agconcepts.com



Photo of dry bean field with treated side on the left side of photo and untreated side on right. Notice the difference in thickness of foliage.



Photo of dry bean plants, the plants on the left are treated and the plants on the right are untreated. Notice the difference in root health and length.



Photo of bean pods, pile on the left is treated and the pile on the right is untreated pile. Notice the difference in number and size of the bean pods.

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Mel "Says"



*"Dream Big. Work Hard.
Learn Every Day.
Enjoy Life.
Be True to Yourself."*

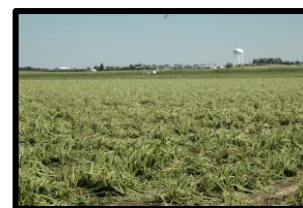
Program Trial on Sugar Beets

Irrigation Research Foundation is a private testing facility located in Yuma, Colorado. Ag Concepts has tested their products with Irrigation Research Foundation (IRF) for several years and continues to test with them due to their unbiased and controlled testing environment. Last year Ag Concepts contracted two trials with IRF, one trial with our micronutrient spray and biological growth catalyst, **AgZyme**, on sugar beets. The second trial was **Super Hume**, our 6% humic acid with added seaweed and bios, combined with **Pervaide**, our soil penetrant, also on sugar beets. Fertilizer treatment included 15 gallons of 21-36-0 at pre-plant, 12.5 gallons of 10-34-0 starter applied at planting, and 10 gallons of 32-0-0 applied three times throughout the growing season. **AgZyme** was applied at 12.8 ounces per acre with 90% (11.25 gallons) starter at planting. **Pervaide** at 1 quart per acre combined with **Super Hume** at 3 quarts per acre was applied three times, three weeks apart, starting at planting. Each **Pervaide** plus **Super Hume** application was applied 24 hours prior to irrigation. The results of the trial are listed in the table below:

Variety	% of Emergence	Yield in Tons per Acre	Sugar %	Lbs. of Sugar per acre
Control	0.6896875	18.85	14.23	5365
AgZyme	0.6715555	20.63	14.40	5947
Pervaide + Super Hume	0.7985972	20.36	14.94	6083

The **AgZyme** treatment yielded 1.78 tons more per acre than the control with 582 more pounds of sugar for an increase of approximately \$80 per acre. The **Pervaide** with **Super Hume** treatment yielded 1.75 more tons per acre with 718 more pounds of sugar for an increase of \$71 per acre. (Dollar amounts were figured on price per ton while taking sugar percentage into account.) We also tracked the percentage of emergence to see the effect that the **Pervaide** with **Super Hume** treatment would have and were pleased to see the 11% increase. If you have any questions about this test or would like more information about any of the products used in this trial please contact your local dealer or call our corporate office at (208) 388-1131.

The photos to the right are of the sugar beets at IRF, taken just after a hail storm in July. It is amazing the sugar beets came back!



Following is an article discussing fertilizer placement. A growing trend in the agriculture industry is using banded applications of fertilizer instead of broadcast. The belief is that banded applications are more efficient than broadcast applications. In the hopes of helping our growers make the best decision about fertilizer placement for their crops, we are sharing this article.

Key Points

- Tillage system and the form of **nitrogen** used influences whether or not nitrogen should be band applied or broadcast
- Band injection of fertilizer **phosphorus** can decrease fixation improving availability
- **Potassium** is an immobile nutrient and band applications can benefit nutrient use efficiency and yield

Broadcast versus Banded Applications of Fertilizer – Which is the Best?

By Robert Mullen, Peter Thomison, Edwin Lentz

This question often arises – am I better off to band all my nutrients or should I make a broadcast application? Like most extension questions, the answer is 'it depends'. The factors to consider when deciding how to supply crop nutrients are: 1) what nutrients am I considering, 2) what is my current soil test level, and 3) am I planning on growing row crops or solid seeded crops. Band or broadcast applications of fertilizer have their place; you just need to know when to use which methodology.

Consider the Nutrient Immobile nutrients and mobile nutrients behave differently in soils (obviously) and this impacts application methodology. Immobile nutrients do not move across great distances within a soil system, so banding immobile nutrients can improve positional availability. Banding supplies a nutrient in a high concentration zone and decreases soil-nutrient interaction. For nutrients that are subject to fixation (phosphorus being our best example), banding can improve efficiency and result in increased yield. For other soils banding immobile nutrients may not result in higher yields when compared to broadcast applications.

Mobile nutrients move with soil water, so application in a band is only short term, eventually the nutrient will diffuse away from the concentration zone. Is there sound agronomic evidence showing that banding is better, more efficient than broadcast? Yes and no, it depends upon the situation and the nutrient.

Nitrogen Tillage system and the form of nitrogen used influences whether or not nitrogen should be band applied or broadcast. Minimum tillage systems that maintain a large amount of surface residue should not receive broadcast applications of dry or liquid urea-based products due to the risk of volatilization. Clean-till corn production systems are less susceptible to volatilization losses of nitrogen but they can and have been documented to occur. For liquid urea fertilizers, band injection and surface banding are more efficient than surface broadcast applications. Non-urea nitrogen fertilizers can be applied by either method with similar results.

Phosphorus As mentioned above, band injection of fertilizer phosphorus can decrease fixation improving availability. Improved efficiency and yields have been documented with banded applications of phosphorus especially in soils that have high fixation capacities. Soils that have high fixation capacities are highly weathered soils that have a large amount of free aluminum, iron, or calcium (soils with low or high pHs). Yield benefits from banded phosphorus are also more common in soils with low soil test levels and soils that are cool and wet. Warm soils that receive adequate moisture are less likely to benefit from band fertilizer applications.

Potassium Like phosphorus, potassium is an immobile nutrient and band applications can benefit nutrient use efficiency and yield. The benefit is most noticeable for cool, wet soil conditions. There is also some research that shows that sub-surface band injection can be beneficial to production under minimum tillage production systems, but not with chisel plow tillage.

Current Soil Test Levels This is a major consideration when determining which application method will provide the greatest benefit. Soils rich in plant available nutrients are productive with either methodology, but broadcast applications of nutrients can help maintain adequate soil test levels. Crop production on deficient soils can be improved with nutrient banding, but it is difficult to track soil test levels when all nutrients are banded. This is because it is difficult to locate the banding seam when it is time to conduct soil analysis.

Cropping Considerations Row crop production or solid seeded production is another consideration. Row crops can be grown with banded fertilization that matches row width, but production of solid-seeded crops (or crops with very narrow row spacing – wheat, alfalfa, barley, soybeans, etc.) may be such that nutrients supplied in the band for previous row crop production are not accessible by all plants. This is exclusive to immobile nutrients (phosphorus and potassium).

Other Topics Related to Fertilizer Placement Does deep banding promote deeper root exploration? This is an interesting question that often comes up. Deeper placement does not promote deeper root growth, but deeper band placement may be more beneficial when surface moisture is running low and the deeper roots are exploring for water and nutrients. In no-till production systems, nutrients are stratified near the soil surface and as long as surface moisture is adequate crops can find adequate nutrients in the upper layer of soil.

Can row crops find broadcast nutrients even though they are planted in wider rows? Absolutely. For example, corn roots can have a diameter as wide as 24 inches and that is more than enough to explore much of the soil. All agronomic evidence to date shows that broadcast applications of immobile fertilizers can be just as effective as band applications under most situations. The plant usually has an extensive root system capable of adequately exploring the soil. Wet, cool soil conditions (or conditions that limit root development) are more likely to benefit from banded fertilizers.

2009 Testing with Ag Concepts®

Each year Ag Concepts contracts several tests with private testing facilities and universities to measure the efficacy of our products on various crops. We have shared the results of one of those trials earlier in this publication. There are more test results that we have yet to receive that will be available later this year. All test results will be publicized on the website at www.agconcepts.com and a few of the trials will be reviewed in upcoming newsletters. The testing facilities we have contracted trials with in 2009 are Irrigation Research Foundation (Colorado), Arise Research & Discovery (Illinois), University of Idaho, Liberty Ag Research (Southeast Idaho), University of Wisconsin, North Dakota State University, Agriculture Advisors Inc. (Northern California), and University of Arizona. The products and the crops they were tested on are:

- **AgZyme** (*micronutrient spray and biological growth catalyst*) on corn, alfalfa, wheat, apples, potatoes, and sugar beets
- **Enhance** (*7-28-4 foliar fertilizer*) on alfalfa and apples
- **Super Hume** (*6% humic acid with added seaweed & bios*) on corn and potatoes
- **Pervaide** (*soil penetrant*) on sugar beets, corn, potatoes, and nitrate leaching
- **Fulvi-Cal Plus** (*7-0-3 foliar fertilizer with 8% calcium and added biostimulants*) on apples and potatoes

We are excited to share these results with you as soon as they are finished being analyzed. If there is a certain product or crop not listed here that you would like to see tested next year please contact your dealer. Ag Concepts will continue to test their products each year and would like to sponsor tests that are important to you. We are always looking for new ideas for trials and since Ag Concepts products are not crop specific there is no limit to what we can test on or where we can test.

Fruit Pizza Recipe

- ½ cup butter, softened
- 1 ¼ cup white sugar, divided
- 1 egg
- 1 ¼ cups all-purpose flour
- 1 teaspoon cream of tartar
- ½ teaspoon baking soda
- ¼ teaspoon salt
- 1 (8 ounce) package cream cheese
- 2 teaspoons vanilla extract
- Fresh or canned fruits of your choice

Directions:

- Preheat oven to 350 degrees F (175 degrees C).
- In a large bowl, cream together the butter and ¾ cup sugar until smooth. Mix in egg. Combine the flour, cream of tartar, baking soda and salt; stir into the creamed mixture until just blended. Press dough into an ungreased pizza pan.
- Bake in preheated oven for 8 to 10 minutes, or until lightly browned. Cool.
- In a large bowl, beat cream cheese with ½ cup sugar and vanilla until light. Spread on cooled crust.
- Arrange desired fruit on top of filling, and chill.

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Get to Know the Ag Concepts® Team!



We would like to take this opportunity to share a little bit about a member of the Ag Concepts team. This month we are featuring our newest Outside Salesman, Andy Mack. Andy comes to Ag Concepts from Dallas, Texas with a bachelor's degree in Social Studies and Secondary Education from St. Johns University, and a master's in Educational Administration from Lamar University. Prior to settling down in Dallas, Andy lived in Minnesota, Dominican Republic, and London, England. He had been teaching Economics for a high school in Dallas, TX before discovering the opportunity to join the Ag Concepts team. Ag Concepts was looking to hire a new salesman and Andy was ready for a career change. He spoke with Mel and after hearing about the company and the products he was ready to take a chance. Andy packed up his family and moved to Idaho in September of 2009. After several weeks of extensive product training and meeting with growers, Andy knew he had made the right decision. What he likes most about working at Ag Concepts is working with products that truly help the grower make the most of their programs. Outside of work, Andy loves spending time with his wife, Selena, son, Elias, and their two boxers, Roxy and Churchill. He also enjoys golf and reading, but has little time for either now that Elias has learned to walk and likes to have daddy chase him around the house, yard, neighborhood, and city. His passion for learning and positive attitude makes him a bright new member of the Ag Concepts family, everyone is eager to watch him grow with the company. He is looking forward to getting on the road and meeting more of our dealers as the season approaches.

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