AgRevival Research

YOUR GUIDE TO BETTER FARMING

2025

www.agrevival.com

Your guide to better farming.

We test so you don't have to guess.

Innovation is critical in agriculture. It's why the United States leads the world in agricultural productivity. But when it comes to identifying the best new products and practices for your farm, innovation can be costly—in time and money.

We're here to help. Over the past 15 years, AgRevival has conducted research in corn, silage corn, soybeans, and sugar beets. In 2025 AgRevival Research conducted 100 trials across more than 600 acres. These replicated trials are a combination of contracted research, Becks Practical Farm Research, and grower interest studies. You'll find examples of each research category in this year's publication. Use this guide as a starting point when you're looking into new products, practices, and management programs to bring the highest ROI for your farm.

Your Minnesota cooperator for Beck's Corn Silage and Forage Research.

Because Beck's Hybrids Practical Farm Research moved to Olivia, Minnesota, this growing season, we had the new opportunity of growing alfalfa and corn for silage at the research location in Gibbon. This year we conducted a total of 8 silage studies for Beck's Hybrids. We highlight one of those studies in this publication, and the rest of the data can be found at www.beckshybrids.com/research/practical-farm-research. We used this year to establish the alfalfa across 4.75 acres with 4 different varieties planted. Over this winter we will be finalizing the protocols for studies and are looking forward to being able to share data from this project with Beck's Hybrids.

2025 AgRevival Research

★ AgRevival Headquarters
• Research Locations

More studies. Greater accuracy.

The 2025 AgRevival Research book contains data from 32 studies. To be published in this book, all studies must contain multiple data points. We are committed to delivering accurate data, as this book is intended to be the starting point in your agronomic decision-making process.

Become a Project Partner

Project Partners are vital to providing the information found in this guide to growers across the United States. The Project Partners found across the bottom of these pages helped us in many ways including, but not limited to: equipment, crop inputs, and monetary investments to get this book into your hands. We thank all of our Project Partners who helped make the 2025 AgRevival Research book a success, and we look forward to serving you in the future.

Learn How We Do Our Research

HILLMANN MACHINE & TILING
LEAD | MARKETING & DESIGN
Max Systems LLC
NewFields Ag Innovations In Your Fields
Physagro BIOME
SUMMERS

2025 AgRevival Research

Corn Studies

Soybean Studies

Ask AgRevival

Have questions about the studies, products, or farming practices included in this book?

Get answers at **www.agrevival.com/contact**

Important Crop Development Stages

VE – V4

Root and plant establishment takes place.

V5 – V8

Yield potential is established.

V9 – VT

Vegetative growth takes place. The focus is on fulfilling the yield potential that was set earlier.

R1 – R3

Grain establishment takes place.

R4 – R6

Grain fill takes place.

VE – V3

Root and plant establishment takes place.

V3 – R1

Nodule development increases.

R2 – R3

Pod determination takes place. (Number of pods per node that can be filled.)

R4 – R5

Grain establishment takes place. (Number of beans per pod that can be filled.)

R6 – R8

Grain fill takes place.

Note:

Soybeans can have several functions occurring simultaneously during reproductive stages. This diagram is a generalization of the average function taking place.

Calculating Return-on-Investment

Pricing:

To calculate the 2025 commodity prices, we averaged the Friday Chicago Board of Trade closing future prices from September 1, 2024, through August 30, 2025. Recalculate your own return-per-acre using prices that you expect, should they differ significantly from the commodity and input prices used here.

Calculations:

We used commodity prices and product costs only in these ROI calculations. Feel free to factor in additional charges, such as application costs, to calculate your own return.

Test weight and bu./ac. were corrected to 15% moisture for corn and 13% moisture for soybeans.

Net Return =
Gross Income (Bushel Per Acre x Commodity Price Per Bushel) – Treatment Cost

Return-on-Investment =
Bushel Per Acre Difference x Commodity Price Per Bushel – Treatment Cost

Commodity Prices

4^{42}/Bu.

10^{33}/Bu.

18^{80}/CWT

Weather Summary

Planting started in early April this year and wrapped up in mid to late May. In mid May we experienced a big temperature dip of over 40 degrees. With that came a 3-inch rain event over the following few days. This temperature shock did result in some slowed growth and late emergence in some stands depending on planting date. Temperatures did not stay low for long and after they rebounded to normal, crops were able to get back on track rather quickly.

Most of the sidedress and herbicide applications happened during the first 2 weeks of June, which set the stage for clean fields and the fertility needed for above-average yields. In mid-June and July we did receive a few wind events. With saturated soils, the high winds did end up laying some corn down due to extended diapause on corn root worm and some later-planted corn not having the stalk strength compared to earlier-planted corn. Most of the blown-over corn did recover and was able to stand back up, so the wind did not impact harvestability.

In late July and early August we picked up more rain, which helped to fill grain but also brought disease pressure in corn. Corn fungicide paid for itself across acres with hybrids that were susceptible to disease. Southern rust was observed across many acres in southern Minnesota and across the corn belt. Multiple-mode-of-action fungicides provided the best ROI when it came to both corn and soybeans this year. With high temperatures and enough moisture, some corn was in a rapid growth stage that did cause some tassel wrap across certain hybrids. The hybrids that had some tassel wrap were able to push through before the silks were completely closed off, so we did not see any yield loss from this, but other areas did see a pollination issue.

Harvest started in mid-September for us this year as we began with the corn silage research studies. We wrapped up corn silage in late September and started the soybean harvest shortly after that. Soybeans were once again drier than we would have liked when we started, however the yield was above average with moistures in the 9–10% range. Dry weather throughout the fall, similar to last year, made for a steady harvest pace in soybeans. Corn harvest started with moistures also drier than expected in the 90-day hybrids but higher in the later hybrids. This resulted in us picking and choosing which fields to take; the forecast looked great for field drying. Yields were some of the highest experienced in the area versus the last few years. With high yields in corn came above average amounts of residue in the field. Taking certain steps to manage this residue will be crucial for spring planting and returning the nutrients in the residue back to the soil for the benefit of next year's crop. Fall tillage wrapped up in early November. Soil conditions were a good balance of moisture for deep tillage and making fall strips that should set up for a great start to the 2026 growing season.

Final Thoughts: The 2025 Growing Season

When we experience a growing season with ample moisture, average temperatures, and minimal stress throughout, we see a particular trend with some studies: yield increases are less than average. Why? Because the plants had everything they needed. This is one reason we run studies for multiple years. When reviewing the studies in this year's book, it's important to consider the multi-year data, which will give you clearer insights into how the various products and strategies tested may perform when mineralization and crop growth conditions aren't optimal.

As we look back across our entire slate of 2025 studies, timing, input costs, and equipment settings had the largest impacts. This year's data reinforce the importance of application timing. In the case of fungicide, be sure to time applications to the crop's need or before stress occurs. In 2025, late applications didn't provide any return, whereas timely applications paid dividends. As input costs continue to rise, it's wise to dig into the data behind every product and practice you are considering. On your own farm you can leave check strips across your field by changing (or taking out) a product to try and confirm its effectiveness.

As we enter into the winter slow season, you have a great opportunity to look over every piece of equipment in your lineup and check that it is set correctly for its job. Also, it's important to replace any wear parts if needed. Over multiple seasons, addressing small problems on equipment can add up to big returns when properly identified and fixed. When spring does arrive and fieldwork begins, ground check these fixes. And take the time to get out of the cab during planting or in-season applications to be sure you are not creating accidental research studies across your fields.

We sincerely hope you find products or strategies in our 2025 Research Book that you can incorporate in your operation to help increase your bottom line. If you have any studies you'd like to see included in our future research, we would enjoy a conversation with you!

Figure 1: High Temperature recorded on May 11th

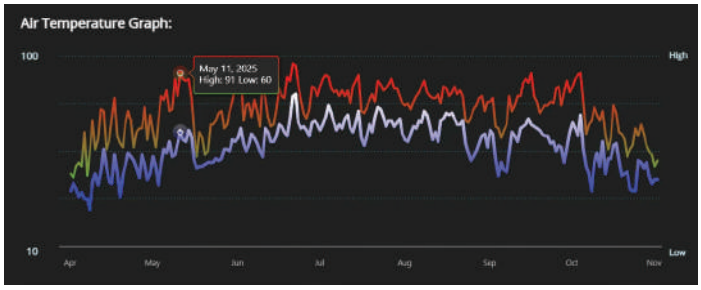


Figure 2: Low Temperature Recorded on May 17th

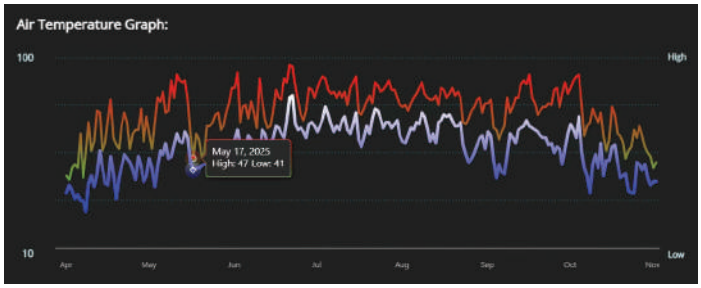


Figure 3: Rainfall Map from April 1st – November 1st. Total rainfall: 24.03"

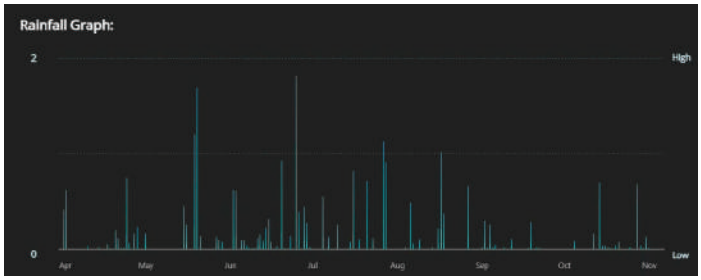
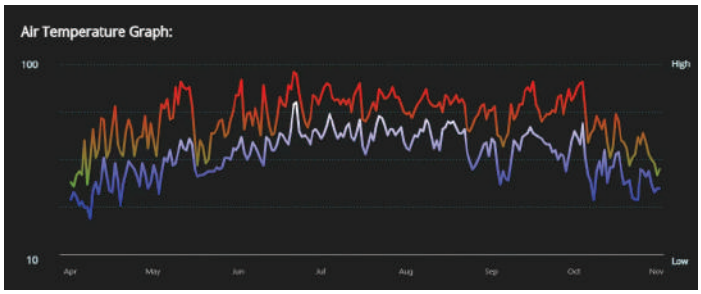
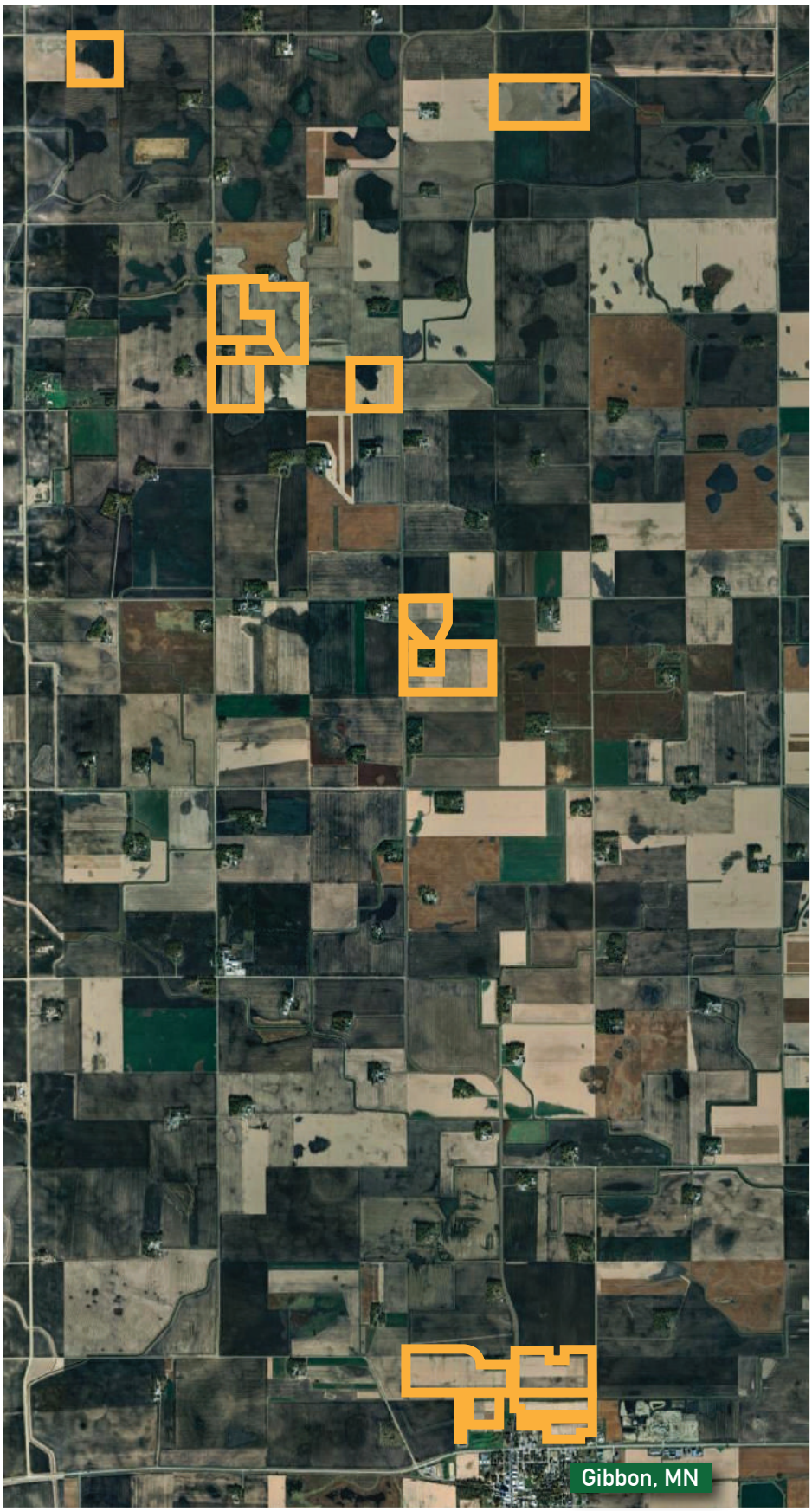


Figure 4: Temperature Map from April 1st-November 1st. GDUS accumulated: 2,995



Research Plots Map



Our research plots stretch 9 miles north and 11 miles west from Gibbon, Minnesota. The distance between research farms allows for testing across multiple soil types and crop rotations while still maintaining similar growing conditions. We continue to expand our acres north, which opens up more opportunities for larger field-scale trials to increase our datasets. The established grassways on our research farm in Gibbon allow access for cooperators and farmers who want an up-close look at the products and practices we're testing each year. As AgRevival continues to grow, we'll have additional opportunities to test products and practices across different tillage programs, fertility programs, and crop rotations.

AgRevival Behind the Scenes

Want a sneak peek at the work that goes into planting, conducting, and harvesting our research studies each year? Check out our series of videos that give you a glimpse of life on a real working research farm.

SCAN TO WATCH VIDEO
How We Plant Our Research Fields

SCAN TO WATCH VIDEO
Our Corn Sidedress Setup

SCAN TO WATCH VIDEO
The Tiniest Research Sprayer?

SCAN TO WATCH VIDEO
Harvesting Data at AgRevival Research

RESEARCH HIGHLIGHT

Corn Silage Studies for Beck's PFR

In cooperation with Beck's Hybrids Practical Farm Research (PFR), we have brought corn silage research to Gibbon, Minnesota. Over the last 2 years, we have been designing and coordinating corn silage research on our farm. Our goal is to accurately collect the necessary data in an efficient manner, but also to be sure that none of the chopped silage goes to waste. We have partnered with a local dairy to this end. Other researchers will take measurements and then spread the silage back on the ground, which results in spoiled land for future research projects.

As with any new project on the farm, we learned on the go and were able to chop 7 silage studies for Beck's PFR and 1 other contracted fungicide study this year. On page 10 you will see one of those studies pulled from Beck's PFR silage book. (The other 6 studies are available in the book.)

Our Future of Silage and Forage Testing

We will continue corn silage research for 2026, evaluating various products and practices, including silage ground management and crop rotations. We will also be finalizing Forage Research trials; this growing season we established 4 varieties of alfalfa across 4.75 acres. As we continue to expand our silage and forage research capabilities, we want to hear from you on what information and trials you want to see in the future that may benefit your operation.

To learn more about our process for conducting replicated silage research, scan the QR code below.

SCAN TO WATCH VIDEO
PFR Silage Harvesting Process

THIN STAND STUDY
SILAGE VS. GRAIN

PURPOSE

To evaluate various thin stand populations and their impact on grain yield vs. tonnage and quality for silage.

2025 RESULTS: SILAGE

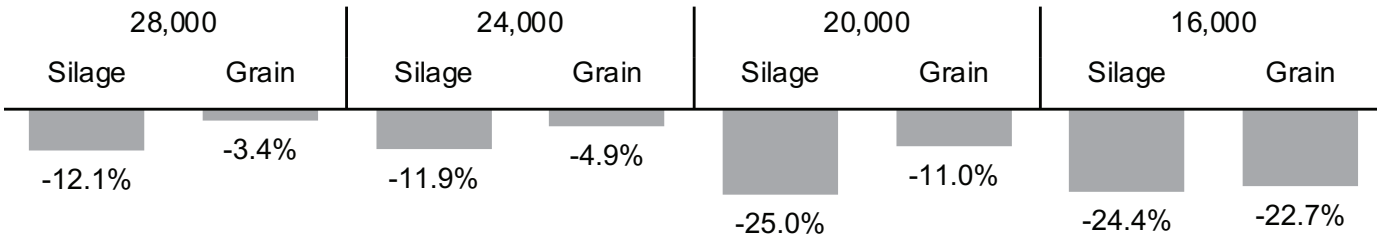
SILAGE PLANTED POPULATION (SEEDS/A.)	% MOISTURE	YIELD (TONS) @ 65% MOISTURE/A.	DRY MATTER YIELD/A.	% NDF	NDFD 30 HR. % OF NDF	% STARCH	MILK/TON (LB.) (MILK 2006)	MILK/A. (LB./A.)	BEEF/TON (LB.)	BEEF/A. (LB./A.)	NET RETURN ($/A.)
34,000 Normal Spacing	**59.94**	**28.04**	**9.81**	**35.38**	**56.50**	**39.86**	**3,164**	**31,054**	**280.96**	**2,758**	**$5,838.15**
28,000 Sporadic Spacing	63.18	24.37	8.53	33.63	55.93	39.76	3,200	27,289	285.19	2,432	$5,130.33
24,000 Sporadic Spacing	62.11	24.58	8.60	34.36	55.14	39.70	3,182	27,370	283.31	2,437	$5,145.56
20,000 Sporadic Spacing	63.66	21.77	7.62	37.50	55.40	35.11	3,059	23,306	264.25	2,013	$4,381.53
16,000 Sporadic Spacing	61.53	21.21	7.43	33.54	54.20	38.27	3,162	23,479	276.88	2,056	$4,414.05

2025 RESULTS: GRAIN

GRAIN PLANTED POPULATION (SEEDS/A.)	% MOISTURE	BU./A.	BU./A. DIFFERENCE	NET RETURN ($/A.)
34,000 Normal Spacing	**21.0**	**232.6**	**--**	**$1,028.09**
28,000 Sporadic Spacing	21.2	224.6	-8.0	$992.73
24,000 Sporadic Spacing	21.3	221.3	-11.3	$978.15
20,000 Sporadic Spacing	21.2	206.9	-25.7	$914.50
16,000 Sporadic Spacing	21.2	179.9	-52.7	$795.16

Net return was calculated using the average USDA Class III milk price per hundredweight from September 2024 to August 2025 ($18.80). Corn $4.42/Bu. These results are based on the disclosed study parameters and participating sites.

2025 THIN STAND - GRAIN VS. SILAGE NET RETURN PERCENT LOSS (COMPARED TO 34,000 SEEDS/A.)



Scan the QR Code to watch a video about this study!

STUDY INFORMATION | **Planted** 4/30/2025 | **Harvested** 9/13/2025 | **Population** Various | **Row Width** 30 in. | **Previous Crop** Corn | **Tillage Fall:** Disk-Rip, **Spring:** Field Cultivation | **Herbicides Post:** 28 oz. Roundup PowerMAX 3®, 3 oz. Stinger®, 3 oz. Laudis® | **Insecticides** Escalate® | **Starter** 20 gal. 28-0-0 2x2x2 | **Total Nitrogen** 215 units as UAN | **Brand** XL® 5413Q* | **Soil Type** Harps (Clay Loam)

Tillage Program Study

PURPOSE

To evaluate a variety of tillage programs and how each program impacts plant health and overall yield.

OBSERVATION

Our third and final year of the tillage study has once again given us a lot to consider. Each tool and program can work well for many environments, but there are a lot of factors to consider when choosing your approach. For example, we have no control over the weather, but it should influence your tillage strategy. And individual field variables matter, too. In areas prone to holding water, deep tillage works better—open the soil and your ground will dry faster in the spring. When it comes to higher elevations (or tiled fields), less tillage can be more beneficial. In a season with average rainfall, strip tillage and vertical tillage are good options for creating a good seedbed and soil structure for early-season root growth. In the fall, the Case 530B and Great Plains Max-Chisel® have proven to be effective for incorporating residue, removing compaction, and providing a "dark" surface for earlier spring soil temps. To summarize: tillage is a complex topic each growing season. Each tool and program can work great for many environments. Be sure to set your tillage tool properly for what you want to accomplish.

Tillage Program	Moisture	Yield	Yield Change	3-Year Avg. Yield
No Till	18.6	216.5	N/A	189.9
Spring Strip Till	18.2	230.6	+ 14.1	208.1
AgRevival Conventional Tillage Program (Fall Disc Rip, Spring Field Cultivator)	18.1	219.0	+ 2.5	211.2
Great Plains Vertical Tillage Program (Fall Max-Chisel®, Spring Turbo-Max®)	18.0	224.5	+ 8.0	208.1
Summers MFG Vertical Tillage Program (Fall and Spring VRT Renegade®)	18.1	226.3	+ 9.8	205.1

Average Yield by Elevation

NO TILL	223.4	216.5	207.2
SPRING STRIP TILL	233.2	227.7	230.2
AGREVIVAL CONVENTIONAL TILLAGE PROGRAM	218.5	221.2	217.2
GREAT PLAINS VERTICAL TILLAGE PROGRAM	219.9	226.5	226.3
SUMMERS MFG VERTICAL TILLAGE PROGRAM	216.4	228	234.5

LOW ELEVATION — HIGH ELEVATION

Planting Date Study

PURPOSE

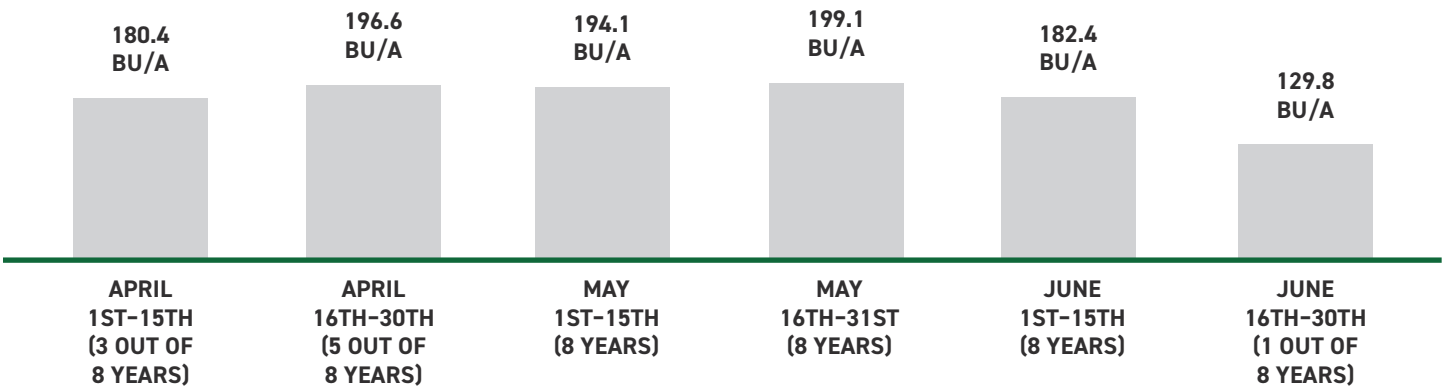
To evaluate the optimal planting date for highest yield.

OBSERVATION

For the past 8 years, each spring has given us a different opportunity to plant at earlier or later than "ideal" dates. This year, we were able to plant first on April 16th, which turned out to be one of the higher-yielding dates in this study. When we review multiyear data, our best corn planting window is April 20–May 20. Three factors influence the best planting date for corn: planting conditions—soil temperature and furrow moisture—and warm weather in the days following planting.

Planting Date	Moisture	Yield
April 16th	14.9	195.1
April 23rd	15.0	192.4
May 6th	15.6	192.3
May 31st	**19.9**	**196.4**
June 10th	28.3	196.3

8-Year Average Yield by Planting Date



Planting Time after Spring Tillage Study

PURPOSE

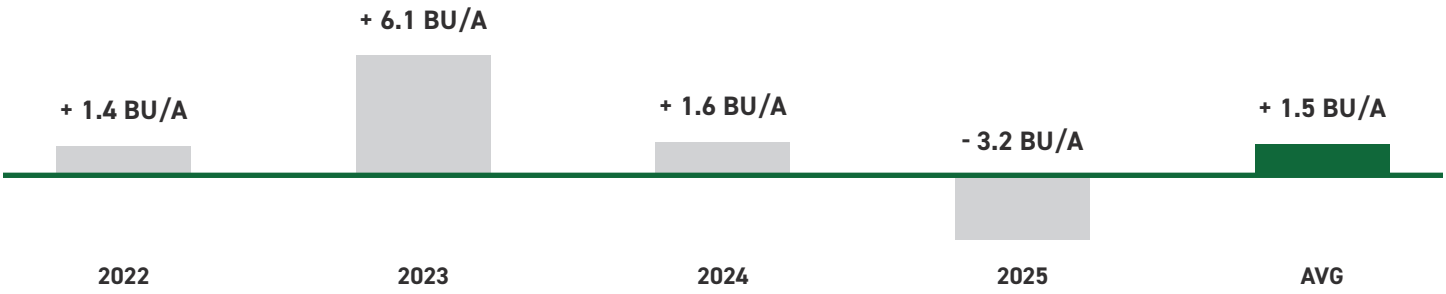
To evaluate yield impacts on planting directly after spring tillage or waiting for the soil to dry and warm one day before planting.

OBSERVATION

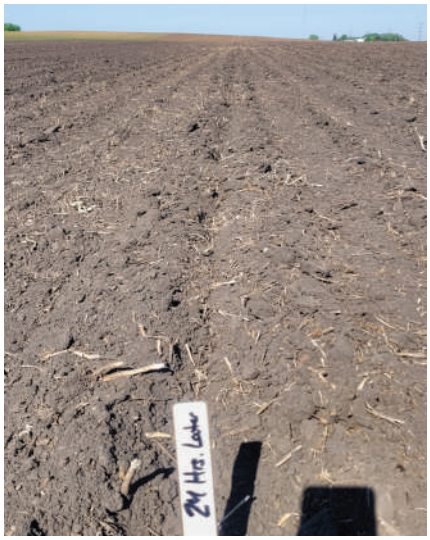
For 2025 we performed this study on a drier area of the farm—a sandy hilltop—to see if this would impact the data. It did. For the past 3 years, we've conducted the study on heavier ground that holds on to moisture. Planting right after tillage would result in seed trench smearing and poor seed trench closure. On that ground, we noticed a yield bump when waiting a day to plant after tillage. Depending on your field conditions and soil type, you may lose valuable yield when you try to push the planter too close behind your tillage pass.

Planting Date (Field was worked on May 4th)	Moisture	Yield	Yield Change
May 4th	**18.1**	**215.2**	**N/A**
May 5th	19.1	212.0	- 3.2

4-Year Average Yield Difference from Waiting a Day



SAME DAY



24 HRS. LATER

In-Furrow Study by Nitrogen Program

Max Systems LLC

PURPOSE

To evaluate the use of a carbon product in-furrow and its yield impacts in different nitrogen programs.

OBSERVATION

This study stemmed from a conversation with a farmer who wanted to use a carbon product in his operation because of the benefits he noticed when incorporating it with a nitrogen source. Some co-ops don't want to blend products they don't sell when applying nitrogen. So, would we see the same benefit if we applied the product in-furrow when planting? Results show that applying the carbon product in-furrow in an all-urea program provided good ROI. However, in an all-liquid program, it didn't provide any benefit. Another study takeaway is the benefit of a split application: an early, partially plant-available source of nitrogen paid off this year with an 8-bushel increase.

In-Furrow Treatment	Moisture	Yield	Yield Change	Net Return
Control 1: 190 Units N Urea Pre-Plant Incorporated	17.4	212.9	N/A	$836.52
Control 1 + 16 oz. Humika™ In-Furrow	16.8	216.9	+ 4.0	$846.57
Control 1 + 16 oz. Humika™ + 16 oz. eXceed™ Nano Brown Sugar In-Furrow	17.3	216.8	+ 3.9	$841.63
Control 2: 190 Units N UAN (60 Units 2x2x2 + 130 Units Coulter @ V3)	17.2	223.4	N/A	$877.23
Control 2 + 16 oz. Humika™ In-Furrow	17.2	223.4	+ 0.0	$869.60
Control 2 + 16 oz. Humika™ + 16 oz. eXceed™ Nano Brown Sugar In-Furrow	16.8	224.0	+ 0.6	$867.75

Conventional Corn Program Study

PURPOSE

To evaluate the differences in a conventional corn program versus a traited corn program.

OBSERVATION

With rising input costs and variable cash prices for grain, is conventional corn a viable option to increase profits? We believe conventional corn could be a way for operations to reduce input costs and achieve good profitability. However, this depends on the weed and insect pressures in a field. We are conducting this study to gain a deeper understanding into when it pays to plant conventional corn on a percentage of your acres to mitigate risk.

Treatment	Moisture	Yield	Net ROI
Conventional Corn - $180.90/Unit $76.88/acre			
In-Furrow	19.0	224.0	$894.39
In-Furrow + Foliar @ V4	18.7	222.0	$872.30
In-Furrow + Foliar @ V4 + Foliar @ R1	18.2	221.4	$845.57
VT Double PRO® - $311.90/Unit $132.56/acre			
In-Furrow	18.8	224.1	$839.15
In-Furrow + Foliar @ V4	18.6	223.0	$821.04
In-Furrow + Foliar @ V4 + Foliar @ R1	19.2	229.9	$827.45

High Management Program	Costs Per Acre
In-Furrow- 24 oz. RSTC 17® + 32 oz. MicroBoost™	$18.81
Foliar @ V4- 32 oz. Xylem Plus	$13.25
Foliar @ R1- 7 oz. Veltyma®™ + 3.2 oz. Regulator 3.0 + 16 oz. eXceed™ Nano Brown Sugar	$24.08

Population Study

PURPOSE

To evaluate the impacts of a 50% reduction in population and whether it pays to stay the course with a high management plan.

OBSERVATION

We are trying to answer three questions with this study: What would be the impact of cutting the population in half; would the lower seed cost balance out with final yield to provide positive ROI? Could we achieve similar yields with plant populations around 20,000, similar to what farmers on dry land in Nebraska and South Dakota see when using a hybrid with horizontal roots and good ear flex? And last—if we experience a 50% stand loss on a hybrid with horizontal roots and good ear flex, should we continue with a high-management program? As we thought, 17,000 was just too low on our high OM and productivity soils. However, we were surprised how well it still performed in both hybrids. Our other main takeaway was that extra applications in a reduced population did not increase yield enough to result in positive ROI. Ultimately, this study shows that it's important to understand the population each hybrid prefers and then focus on achieving that target with correct planter setup.

Treatment	Moisture	Yield	Yield Change	Net Return
4239V2P 34,000	17.7	209.4	N/A	$790.53
4239V2P 17,000	18.6	169.6	- 39.8	$683.41
4239V2P High Management 34,000	18.7	221.2	+ 11.8	$786.45
4239V2P High Management 17,000	20.8	170.0	- 39.4	$627.71
5608AM 34,000	23.9	276.4	N/A	$1,077.23
5608AM 17,000	25.1	233.3	- 43.1	$958.96
5608AM High Management 34,000	24.3	282.7	+ 6.3	$1,048.93
5608AM High Management 17,000	24.3	236.3	- 40.1	$916.08

5608 17,000 | **5608 34,000** | **4239 17,000 (2 ears/plant)** | **4239 34,000**

High Management Program	Cost/Acre
In-Furrow- 24 oz. RSTC 17® + 32 oz. MicroBoost™	$18.81
Foliar @ V4 32 oz. Xylem Plus	$13.25
Foliar @ R1 7 oz. Veltyma®™ + 3.2 oz. Regulator 3.0 + 16 oz. eXceed™ Nano Brown Sugar	$24.08
Total High Management Program Cost	**$56.14**

Seed	Cost/Acre
4239V2P 34,000	$135.11
4239V2P 17,000	$67.55
5608AM 34,000	$144.46
5608AM 17,000	$72.23

Zinc Study

PURPOSE

To evaluate the impacts of adding zinc to an in-furrow program.

OBSERVATION

Every few years it's beneficial to do a quick check of products you've become accustomed to applying on every acre. This reveals possible benefits you may have forgotten and also gives an updated understanding of ROI with the ever-changing input and grain prices. Zinc continues to be a beneficial nutrient added in-furrow at planting.

Treatment	Moisture	Yield	Yield Change	ROI
Control	19.8	188.6	N/A	N/A
16 oz. NanoZn® 9%	**20.3**	**190.1**	**+ 1.5**	**+ $3.48**

Corn After Corn Xylem Plus Study

PURPOSE

To evaluate timing and rates of Xylem Plus in a corn-on-corn rotation.

OBSERVATION

Xylem Plus on corn-after-corn ground has been average the last 3 years. We've achieved a better response in corn after soybeans. Veltyma® at R1 this year was a win across multiple fields as it helped with late-season disease pressure.

Treatment	Moisture	Yield	Yield Change	ROI
Control	23.5	223.6	N/A	N/A
32 oz. Xylem Plus In-Furrow	23.5	224.0	+ 0.4	- $11.48
32 oz. Xylem Plus In-Furrow + 7 oz. Veltyma® @ R1	24.2	232.0	+ 8.4	+ 6.54
24 oz. Xylem Plus In-Furrow	23.5	221.0	- 2.6	- $21.43
24 oz. Xylem Plus In-Furrow + 24 oz. Xylem Plus @ V3	23.3	222.2	- 1.4	- $26.07
32 oz. Xylem Plus @ V3	23.2	216.7	- 6.9	- $43.75
32 oz. Xylem Plus @ V3 + 7 oz. Veltyma® @ R1	**23.6**	**233.8**	**+ 10.2**	**+ $14.49**
7 oz. Veltyma® @ R1	23.7	228.0	+ 4.4	+ $2.11

In-Furrow Placement Study

PURPOSE

To evaluate the placement of a starter solution in relation to the seed and how this impacts germination, yield, and ROI

OBSERVATION

Although none of the products provided a positive ROI, they did increase yields; some placements were better than others. We can confidently recommend these best-management practices: Place fertilizer starter products under the seed. Because of fertilizers' salt loads, it's helpful to have a thin layer of soil to buffer the space between the fertilizer band and seed. Place biologicals/bio stimulants on top of the seed in the trench. Biologicals/biostimulants work best when in direct contact with the seed.

Treatment	Moisture	Yield	Yield Change	ROI	2- or 3-year Avg. Yield
Control	16.1	202	N/A	N/A	N/A
16 oz. Frenzy applied in-furrow under the seed	16.2	203.2	+ 1.2	- $6.74	193.8 (2)
16 oz. Frenzy applied in-furrow on top of seed	16.3	203.8	+ 1.8	- $4.08	**196.7 (2)**
16 oz. RSTC 17® + 16 oz. MicroBoost™ + 16 oz. BioGreen applied in-furrow under the seed	16.1	202.9	+ 0.9	- $11.90	**188.6 (3)**
16 oz.RSTC 17® + 16 oz. MicroBoost™ + 16 oz. BioGreen applied in-furrow on top of seed	16.3	204.4	+ 2.4	- $5.27	186.2 (3)
5 gal. 10-34-0 + 16 oz. eXceed™ NBS applied in-furrow under the seed	16.1	206.9	+ 4.9	- $1.05	**191.1 (3)**
5 gal. 10-34-0 + 16 oz. eXceed™ NBS applied in-furrow on top of seed	16.4	206.8	+ 4.8	- $1.49	188.6 (3)

PREFERRED PLACEMENT FOR BIOLOGICALS/BIOSTIMULANTS (ABOVE SEED)

PREFERRED PLACEMENT FOR FERTILIZERS (BENEATH SEED)

In-Furrow Study by Hybrid

PURPOSE

To evaluate hybrid response to common in-furrow programs and the impacts on yield and ROI.

OBSERVATION

Becks' Root Reveal™ program has opened our eyes to what we can't see below ground—root architecture. This study explores the response to in-furrow solutions and whether there are any synergies to root architecture. From 2 years of research, we are seeing a higher response from in-furrow solutions applied to horizontal-rooted hybrids.

Treatment	Moisture	Yield	Yield Change	ROI
Hybrid A Vertical Root Structure				
Control	16.0	195.2	N/A	N/A
16 oz. RSTC 17® + 16 oz. MicroBoost™ + 16 oz. BioGreen	16.1	197.4	+ 2.2	- $6.16
5 gal. 10-34-0 + 16 oz. eXceed™ Nano Brown Sugar	16.0	198.6	+ 3.4	- $7.68
Hybrid B Horizontal Root Structure				
Control	15.9	185.4	N/A	N/A
16 oz. RSTC 17® + 16 oz. MicroBoost™ + 16 oz. BioGreen	16.0	189.6	+ 4.2	+ $2.68
5 gal. 10-34-0 + 16 oz. eXceed™ Nano Brown Sugar	16.1	191.0	+ 5.6	+ $2.04

2-Year Average Yield Response

In-Furrow Study

PURPOSE

To evaluate a variety of in-furrow mixes and their impacts on yield and ROI.

OBSERVATION

This year, eXceed™ performed better than MicroBoost™ across the 3 different mixes. Last year, MicroBoost™ performed better in-furrow. Both sugar products provided a boost for soil biology and were beneficial for in-furrow solutions.

Treatment	Moisture	Yield	Net Return	2- or 3-Year Avg. Yield
2.5 oz. Accelerate Pro + 16 oz. MicroBoost™ + 16 oz. BioGreen	17.1	213.0	$934.00	N/A
16 oz. RSTC 17® + 16 oz. eXceed™ NBS + 16 oz. BioGreen	17.3	211.9	$918.16	199.3 (3)
16 oz. RSTC 17® + 16 oz. MicroBoost™ + 16 oz. BioGreen	17.1	211.5	$918.95	**202.1 (3)**
8 oz. Regulator 3.0 + 16 oz. eXceed™ NBS + 16 oz. BioGreen	16.9	215.5	$938.51	192.6 (2)
8 oz. Regulator 3.0 + 16 oz. MicroBoost™ + 16 oz. BioGreen	17.2	213.0	$930.02	193.8 (2)
3 gal. 10-34-0 + 16 oz. eXceed™ NBS + 16 oz. BioGreen	**16.9**	**220.7**	**$956.04**	201.3 (2)
3 gal. 10-34-0 + 16 oz. MicroBoost™ + 16 oz. BioGreen	17.1	217.4	$944.02	199.2 (2)

NO IN-FURROW **IN-FURROW**

Stream Bar Strategies Study

PURPOSE

To evaluate the use of stream bars as a method of applying starter nitrogen on corn.

OBSERVATION

We know that the most agronomically beneficial practice for applying nitrogen to corn is with the planter using a 2x2x2 system, which helps incorporate the UAN and limit atmospheric loss. However, which method and timing should you use if you don't have that system on your planter? For years, the steam bar has proved to be a useful tool to band fertilizer over the row; it can limit loss to the air due to the droplet size. The addition of CetaiN® reduces the "burn" on the corn leaves when applied to V1 or V2 vegetation and creates a catalyst between your fertilizer and soil, which holds the fertilizer for a period of time. This strategy is a new concept with a lot of early adopters across the corn belt.

Treatment	Moisture	Yield	Yield Change	ROI for CetaiN® @ V2
Flat Fan Pre-Emerge	16.7	216.0	N/A	N/A
Stream Bar Pre-Emerge	**16.8**	**218.6**	**+ 2.6**	**N/A**
Stream Bar @ V2	17.0	214.3	- 1.7	N/A
Stream Bar @ V2 w/ 5 oz. CarbonWorks CetaiN®	17.0	215.8	- 0.2	+ $3.66

Nitrogen Placement Study

PURPOSE

To evaluate the placement of nitrogen on different root structures and how it impacts nitrogen efficiency and yield.

OBSERVATION

This study is an example of how we can achieve a yield gain when we match the correct hybrid with the correct placement of nitrogen. Root architecture is something you should look at when selecting hybrids. It pays to select hybrids, in part, based on the form of nitrogen and application methods you use.

Treatment	Moisture	Yield	Yield Change	ROI
Vertical Root Beck's Hybrids 5231AM				
60 Units UAN 2x2x2 + 130 Units UAN @ V5 Y-Drop	20.0	219.4	N/A	N/A
60 Units UAN 2x2x2 + 130 Units UAN @ V5 Coulter	**20.2**	**220.7**	**+ 1.3**	**+ $5.75**
Balanced Root Beck's Hybrids 4501V2P				
Control - 110 Units Urea	19.2	187.5	N/A	N/A
Control + 80 Units UAN @ V5 Y-Drop	**19.3**	**206.0**	**+ 18.5**	**+ $34.57**
Control + 80 Units UAN @ V5 Coulter	19.3	201.0	+ 13.5	+ $12.47

Vertical Roots

60° - 80° ROOT ANGLE

Balanced Roots

40° - 60° ROOT ANGLE

Images courtesy of Beck's Hybrids.

Foliar Nozzle Spacing Study

PURPOSE

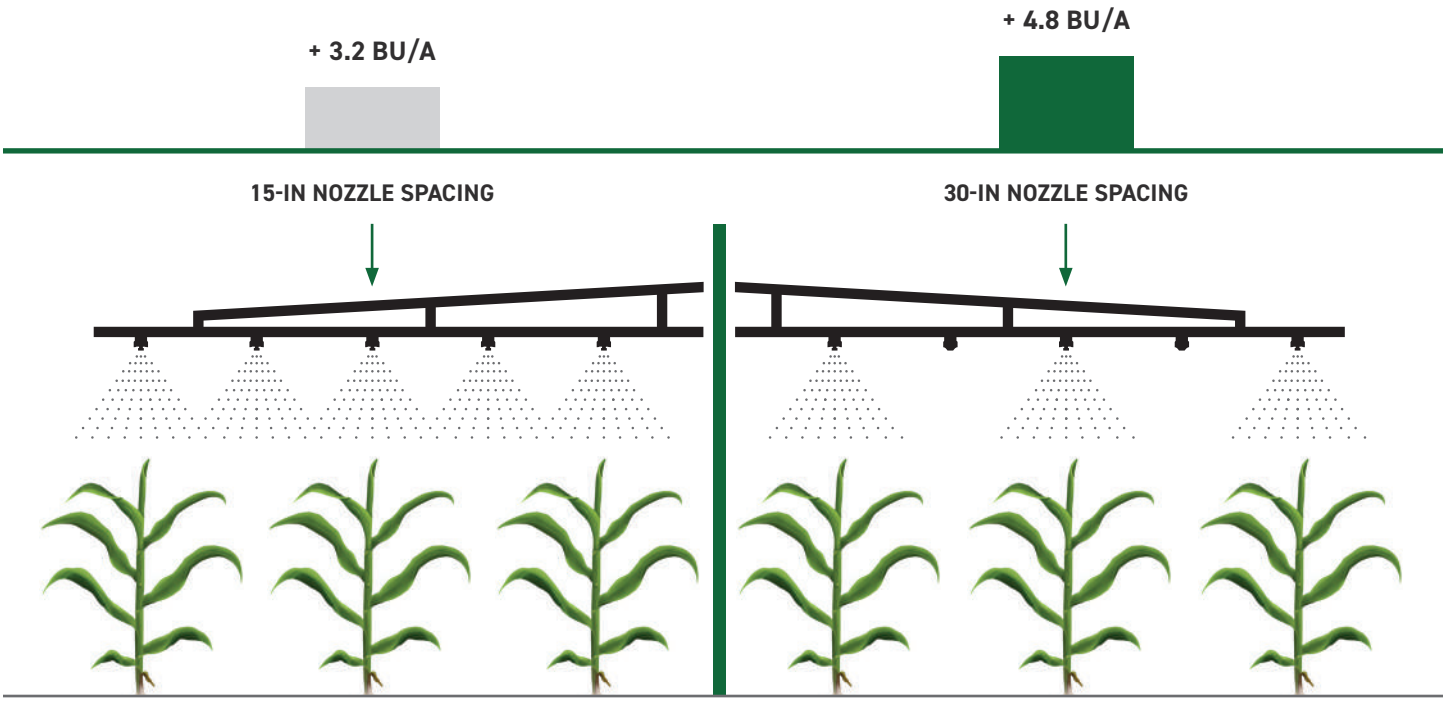
To evaluate the placement of a foliar application and its impact on yield and ROI.

OBSERVATION

A new treatment for this study in 2025 explores a reduction in the carrier rate along with focusing the solution only on the plants. The data suggests keeping your application carrier rate the same to maximize coverage on the plants.

Treatment @ V4 16 oz. Frenzy	Moisture	Yield	Yield Change	ROI
Control	16.8	221.9	N/A	N/A
Foliar sprayed through all nozzles (15-in. Spacing) (20 GPA)	16.8	225.0	+ 3.1	+ $1.66
Foliar sprayed through every other nozzle (30-in. Spacing) (20 GPA)	**16.7**	**226.7**	**+ 4.8**	**+ $9.18**
Foliar sprayed through every other nozzle (30-in. Spacing) (10 GPA)	16.5	224.8	+ 2.9	+ $0.78

3-Year Average Yield Increase



Foliar Study

PURPOSE

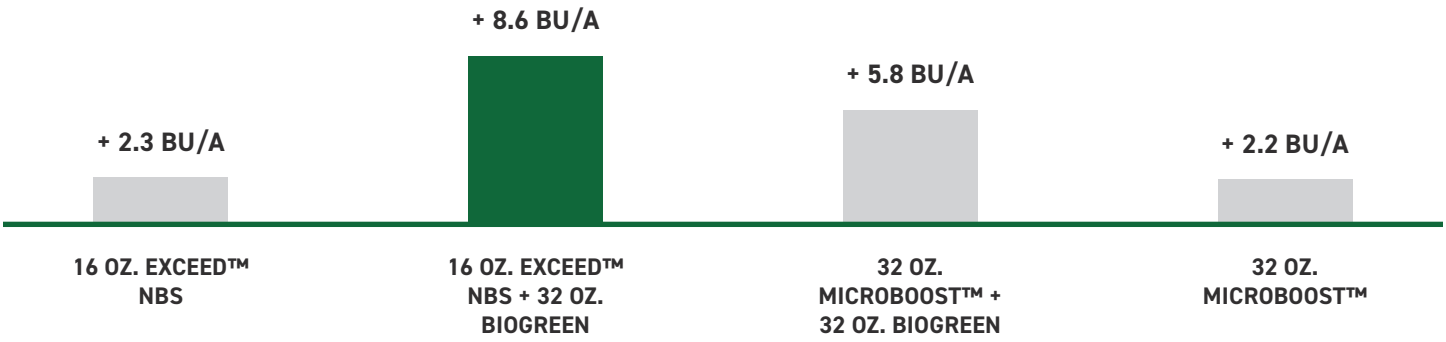
To evaluate the impacts of foliar products on plant health, yield, and ROI.

OBSERVATION

The 3rd year of this foliar sugar and biological study showed only breakeven results as the plants didn't undergo any major stress events this growing season. The 3-year data suggests good returns on all 4 products as well as a higher return when having both sugar and biological products in the mix.

Treatment @ V4	Moisture	Yield	Yield Change	ROI
Control	15.5	199.2	N/A	N/A
16 oz. eXceed™ Nano Brown Sugar	15.6	200.2	+ 1.0	- $0.14
16 oz. eXceed™ Nano Brown Sugar + 32 oz. BioGreen	**15.5**	**206.1**	**+ 6.9**	**+ $17.94**
32 oz. MicroBoost™ + 32 oz. BioGreen	15.5	202.0	+ 2.8	+ $0.38
32 oz. MicroBoost™	15.7	200.3	+ 1.1	+ $0.86

3-Year Average Yield Increase



Fungicide and Plant Health Study

PURPOSE

To evaluate a variety of products marketed for plant health and disease control applied at different times throughout the growing season.

OBSERVATION

For the highest ROI opportunity, always choose a fungicide that targets the disease present in the field. However, in this study, we used some of the treatments as a preventative measure for stronger plant health when disease strikes. Be sure to monitor plant health all the way to the end to ensure that you aren't losing valuable yield to controllable disease pressure.

Treatment	Moisture	Yield	Yield Change	ROI
Control	17.9	215.0	N/A	N/A
8 oz. Revytek® @ R1	18.1	221.3	+ 6.3	+ $3.80
10 oz. Headline AMP® @ R1	18.3	218.8	+ 3.8	+ $5.99
32 oz. Xylem Plus @ V8	18.1	219.3	+ 4.3	+ $5.76
6 oz. Generic Azoxy @ V8	17.9	216.1	+ 1.1	- $0.91
32 oz. MicroBoost™ + 32 oz. BioGreen @ V10–V12	18.0	211.7	- 3.2	- $26.14
7 oz. Veltyma® @ R1	**18.3**	**222.3**	**+ 7.3**	**+ $14.93**

Tillage Program Study

PURPOSE

To evaluate a variety of tillage programs and how each program impacts plant health and overall yield.

SCAN TO WATCH VIDEO
Summers VRT Renegade® Review

OBSERVATION

Soybeans are strong and can push through adverse soil conditions. When looking at the past 3 years of study data on tillage programs there was no clear winner year in and year out. With fall tillage on corn residue, we feel it's important to be able to chop it finely and get it incorporated into the soil profile for better breakdown. Considering new chopping heads and corn head attachments, we believe some of this residue will even benefit from no till systems, as the residue is more likely to stay on the soil surface and not blow away. In Minnesota we also benefit from having a darker surface in spring, which allows the soil to warm and dry quicker for early planting. (Our planting date research shows that early planting results in the best opportunity for high yields in soybeans.) In running our tillage passes on the same areas for three years in a row, we did see that no-till topped other tillage methods for yield, which we attribute to the improvements in soil structure and less disturbance to the soil profile. (No till was worse than any tillage program by 2.8 bushels in 2023 and 0.6 bushels in 2024. In 2025, no till was 4.4 bushels better than the rest on average.)

Tillage Program	Moisture	Yield	Yield Change	3-Year Avg. Yield
No Till	9.2	62	N/A	53.1
Spring Strip Till	9.4	61.6	- 0.4	53.8
AgRevival Conventional Tillage Program (Fall Disc Rip, Spring Field Cultivator)	9.5	57.2	- 4.8	52.0
Great Plains Vertical Tillage Program (Fall Max-Chisel®, Spring Turbo-Max®)	9.6	55.3	- 6.7	53.7
Summers MFG Vertical Tillage Program (Fall and Spring VRT Renegade®)	9.3	56.3	- 5.7	51.6

Average Yield by Elevation

NO TILL	62	61.9	62
SPRING STRIP TILL	64.4	60.2	61.7
AGREVIVAL CONVENTIONAL TILLAGE PROGRAM	57.6	53.1	60.9
GREAT PLAINS VERTICAL TILLAGE PROGRAM	57.6	50.7	57.7
SUMMERS MFG VERTICAL TILLAGE PROGRAM	57	56.6	55.5

LOW ELEVATION — **HIGH ELEVATION**

Planting Date Study

PURPOSE

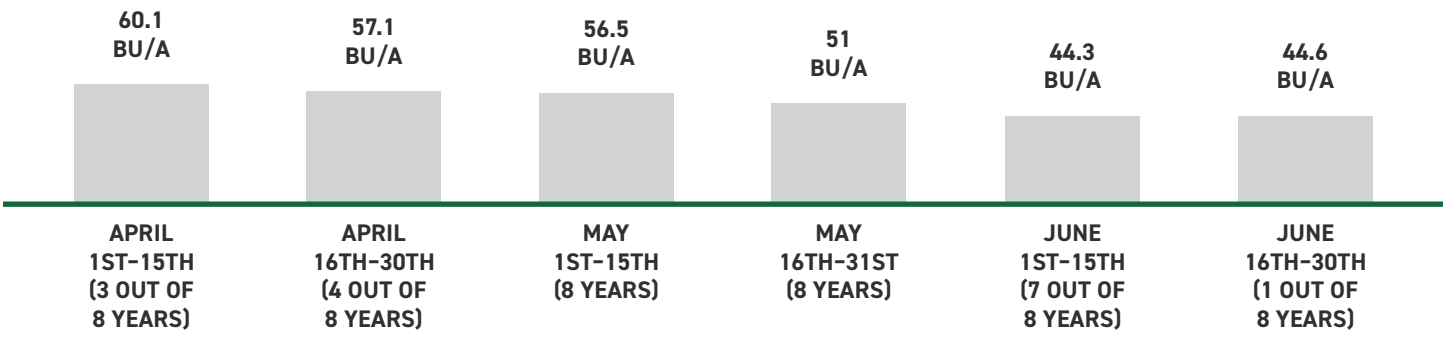
To evaluate the impacts of different planting dates.

OBSERVATION

8 years of data suggests that it pays to plant soybeans before corn in most instances. Frost is a concern in our area, and during these past 8 years we have not had a killing frost after planting. However, we know that you can spot-in soybeans if faced with a low plant stand to help raise yields back to original goals. These understandings give us the confidence to make the early-planting decision, which was once looked at as high-risk. Soybean yield is tied to maximizing sunlight collection throughout the growing season. Earlier planting means more sunlight collected. However, this comes with one caution: We would not recommend early planting unless you plant soybeans with a solid seed treatment package.

Planting Date	Moisture	Yield
April 16th	9.4	69.7
April 23rd	**9.4**	**70.4**
May 6th	9.2	66.1
May 31st	9.0	61.4
June 10th	9.5	58.2

8-Year Average Yield by Planting Date



Planting Time After Spring Tillage Study

PURPOSE

To evaluate yield impacts on planting directly after spring tillage or waiting for the soil to dry and warm one day before planting.

OBSERVATION

As with the corn version of this study, we wanted to target a sandier soil type that would be more prone to drying out faster after spring tillage. As in the corn, we did see opposite results when moving the study to the different soil type. However, the difference was less remarkable in soybeans. The warm, dry, and sunny conditions following the field cultivator pass may have contributed to the results this year as well. Comparing soybeans to corn, treated beans are showing us that they are much more resilient than we give them credit for; they can handle variable soil conditions.

Planting Date (Field was Worked on May 4th)	Moisture	Yield	Yield Change
May 4th	10.7	51.8	N/A
May 5th	**10.7**	**52.6**	**+ 0.8**

3-Year Average Yield Difference from Waiting a Day

Row Cleaner Study

PURPOSE

To evaluate the use of Precision Planting CleanSweep® and its impacts on yield when being able to properly adjust row cleaners in changing conditions.

OBSERVATION

This new study is evaluating the best way to set row cleaners. The CleanSweep® System from Precision Planting makes such adjustments easy and accurate with a control knob in the cab. A row cleaner should do just that—clean crop residue, dirt clumps, and possibly rocks that could impact seed-to-soil contact from the path of the row units. But a row cleaner shouldn't move too much soil, as this can impact planting depth. The data suggests that having the row cleaner touching the ground 25–50% of the time is ideal. With pin- or screw-adjust row cleaners, you are forced to "pick a spot" and that's where they stay for the whole field or planting season. One year of research has proven the importance of proper row cleaner setup.

Treatment	Moisture	Yield	Yield Change
Control: No Row Cleaner	9.2	64.2	N/A
Row Cleaner set to be touching the ground 25–50% of the time	**9.2**	**66.2**	**+ 2.0**
Row Cleaner set to be touching the ground 100% of the time	9.2	65.1	+ 0.9

System	Acre Pay Off
12-row CleanSweep® system with row cleaners	775
12-row CleanSweep® system using current row cleaners	266

*1.6 bushel increase at $10.33/bu of properly adjusting row cleaner.

**Price of products are subject to change and, if interested, getting a direct quote from a dealer is recommended.

Seed Disk Study

PURPOSE

To evaluate the use of a Precision Planting 56-hole disk.

OBSERVATION

Inspired by Beck's Hybrids PFR, we performed this study in 2019 and saw a yield increase in simply changing the seed disk to the 56-hole disk to help with singulation in soybeans. As we push populations lower, singulation becomes more important in soybeans than we previously thought. We see that, even as we raised the population, there was still a slight advantage to the 56-hole disk. More data next year with different soybean sizes will help answer additional questions on this study.

Treatment	Planting Population	Moisture	Yield	Yield Change	ROI
Control: Precision Planting 80-Hole Disk	100,000	9.2	65.9	N/A	N/A
Singulated Precision Planting 56-Hole Disk		9.2	67.0	+ 1.1	+ $11.36
Control: Precision Planting 80-Hole Disk	130,000	9.2	68.2	N/A	N/A
Singulated Precision Planting 56-Hole Disk		9.2	69.2	+ 1.0	+ $10.33
Control: Precision Planting 80-Hole Disk	160,000	9.2	67.7	N/A	N/A
Singulated Precision Planting 56-Hole Disk		9.2	67.9	+ 0.2	+ $2.06

Precision Planting 56-Hole Soybean Disk

2-year Data (2019 & 2025)

Planter Size	Acre Pay Off
12-Row Planter	49
16-Row Planter	65
24-Row Planter	97
36-Row Planter	146

1.5 bu increase x $10.33/ bu = 15.495 per acre ROI

2x2x2 Study

PURPOSE

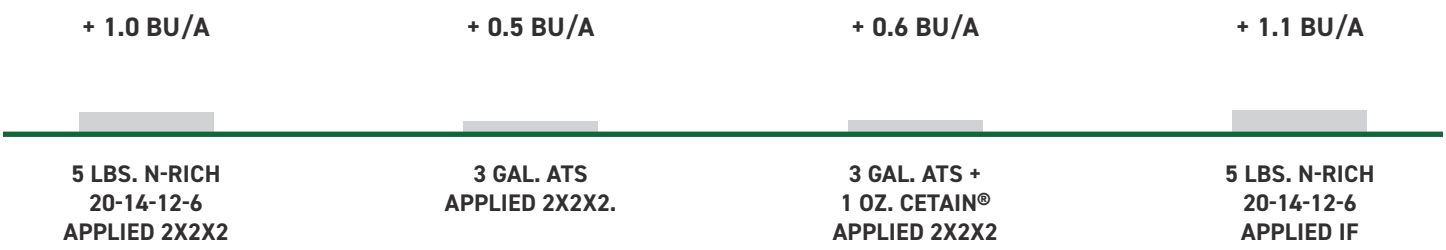
To evaluate the use of products with nitrogen, phosphorus, and potassium and how they impact ROI.

OBSERVATION

This growing season, these products were break-even on yield, which resulted in lost ROI. The 3-year data still suggests a good opportunity to increase yield when using the 2x2x2 system in soybeans. Be mindful of an input's price, as yield benefits might not be enough to pay for higher-priced products.

Treatment	Moisture	Yield	Yield Change	ROI
Control	9.8	55.8	N/A	N/A
5 lbs. N-Rich 20-14-12-6 applied 2x2x2	9.9	55.6	- 0.2	- $12.57
3 gal. ATS applied 2x2x2.	9.9	56.0	+ 0.2	- $3.66
3 gal. ATS + 1 oz. CetaiN® applied 2x2x2	9.8	56.0	+ 0.2	- $4.25
5 lbs. N-Rich 20-14-12-6 applied IF	9.8	56.6	+ 0.8	- $2.24

3-Year Average



In-Furrow Study

PURPOSE

To evaluate product combinations applied in-furrow and their impact on yield and ROI.

OBSERVATION

MicroBoost™ slightly out-yielded eXceed™ Nano Brown Sugar this year in-furrow. We attribute the highest return (from 8 oz. of Regulator in the mix) to the fact that it's a clean carbon water conditioning product that helps the sugar and biology survive better in the tank mix.

Treatment	Moisture	Yield	Net Return	2- or 3-Year Avg. Yield
2.5 oz. Accelerate Pro + 16 oz. MicroBoost™ + 16 oz. BioGreen	8.8	71.3	$729.07	N/A
16 oz. RSTC 17® + 16 oz. eXceed™ NBS + 16 oz. Biogreen	8.7	71.4	$719.12	56.7 (3)
16 oz. RSTC 17® + 16 oz. MicroBoost™ + 16 oz. Biogreen	8.7	71.3	$720.65	59.9 (3)
8 oz. Regulator 3.0 + 16 oz. eXceed™ NBS + 16 oz. BioGreen	8.7	72.4	$733.89	61 (2)
8 oz. Regulator 3.0 + 16 oz. MicroBoost™ + 16 oz. BioGreen	**8.7**	**72.9**	**$741.62**	61.9 (2)
24 oz. RSTC 17® + 16 oz. eXceed™ NBS	8.6	72.2	$726.46	61.9 (2)
24 oz. RSTC 17® + 16 oz. MicroBoost™	8.5	72.8	$735.21	**62.1 (2)**

In-Furrow Placement Study

PURPOSE

To evaluate the placement of a variety of products placed in-furrow and its impact on germination and ROI.

OBSERVATION

In contrast to this study's corn results, biological and bio stimulant product performance was the same whether placed above or below the seed. We still recommend placing these products on top of the seed for better interaction in the seed sphere. Xylem Plus, due to its salt load, has proved for 2 years in a row that it's better placed below the seed in the furrow.

Treatment	Moisture	Yield	Yield Change	ROI	2- or 3-Year Avg. Yield
Control	9.2	67.9	N/A	N/A	N/A
24 oz. RSTC 17® + 16 oz. eXceed™ Nano Brown Sugar under the seed	9.3	69.7	+ 1.8	- $0.78	**48.5 (3)**
24 oz. RSTC 17® + 16 oz. eXceed™ Nano Brown Sugar top of seed	9.3	67.9	0.0	- $19.37	48.4 (3)
16 oz. Frenzy under the seed	9.3	69.2	+ 1.3	+ $1.39	52.8 (2)
16 oz. Frenzy top of seed	9.1	68.0	+ 0.1	- $11.01	**52.9 (2)**
32 oz. Xylem Plus under the seed	9.4	68.2	+ 0.3	- $10.15	**52.0 (2)**
32 oz. Xylem Plus top of seed	9.3	66.8	- 1.1	- $24.61	50.4 (2)

Iron Deficiency Chlorosis Study

PURPOSE

To evaluate a variety of products to reduce impacts from iron deficiency chlorosis.

OBSERVATION

For this year's IDC study we included 2 populations: 100K and 160K per acre. The lower population had more IDC symptoms, and the yield increase from iron products was higher here than in the more populated acres. A new product in this study, Fulltec Plus Foliar from Spraytec, is a nutrient package designed to help reduce stress from injury and aid in the recovery process. The product, when sprayed at flash, did not green up the plants as well as iron in-furrow. However, it did help with later season recovery from IDC and the corresponding yield increase showed promising results.

Treatment	Moisture	Yield	Yield Change	ROI
100,000 Planting Population				
Control	9.7	57.5	N/A	N/A
1 gal. Soygreen® AST In-Furrow	9.8	60.2	+ 2.7	+ $2.89
4 oz. Fulltec Plus Foliar @ Flash	9.8	59.1	+ 1.6	+ $7.83
2 lbs. Triathlon	9.8	59.3	+ 1.8	+ $3.09
160,000 Planting Population				
Control	9.4	62.4	N/A	N/A
1 gal. Soygreen® AST In-Furrow	9.4	63.9	+ 1.5	- $9.50
4 oz. Fulltec Plus Foliar @ Flash	**9.5**	**65.1**	**+ 2.7**	**+ $19.19**
2 lbs. Triathlon	9.5	62.6	+ 0.2	- $13.43

Control **Soygreen® AST In-Furrow**

Control **Soygreen® AST In-Furrow**

Xylem Plus Study

PURPOSE

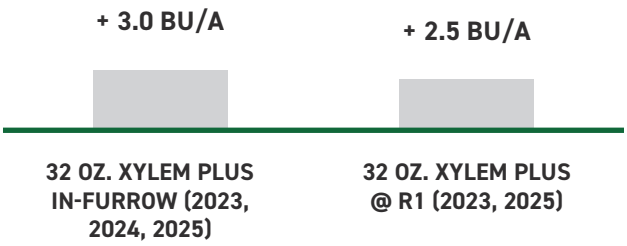
To evaluate programs using Xylem Plus at different timings and rates and their impact on plant health and yield.

OBSERVATION

Xylem Plus can provide protection from white mold, phytophthora, sudden death, and downy mildew in soybeans, which this soybean variety has lower ratings in. Xylem Plus helped this variety mitigate these deficiencies. As a result, the variety achieved its top-end yield in our study. We followed up with an R3 application of Revytek®, which helped keep the yield potential high and boost ROI.

Treatment	Moisture	Yield	Yield Change	ROI
Control	10.3	60.7	N/A	N/A
32 oz. Xylem Plus In-Furrow	10.2	65.4	+ 4.7	+ $35.30
32 oz. Xylem Plus In-Furrow + 8 oz. Revytek® @ R3	10.2	68.7	+ 8.0	+ $45.34
24 oz. Xylem Plus In-Furrow + 24 oz. Xylem Plus @ R1	10.2	67.5	+ 6.8	+ $50.36
32 oz. Xylem Plus @ R1	10.2	64.1	+ 3.4	+ $21.87
32 oz. Xylem Plus @ R1 + 8 oz. Revytek® @ R3	10.3	69.5	+ 8.8	+ $53.60
8 oz. Revytek® @ R3	**10.3**	**69.8**	**+ 9.1**	**+ $69.95**

Average Yield Increases



In-Season Strategies Study

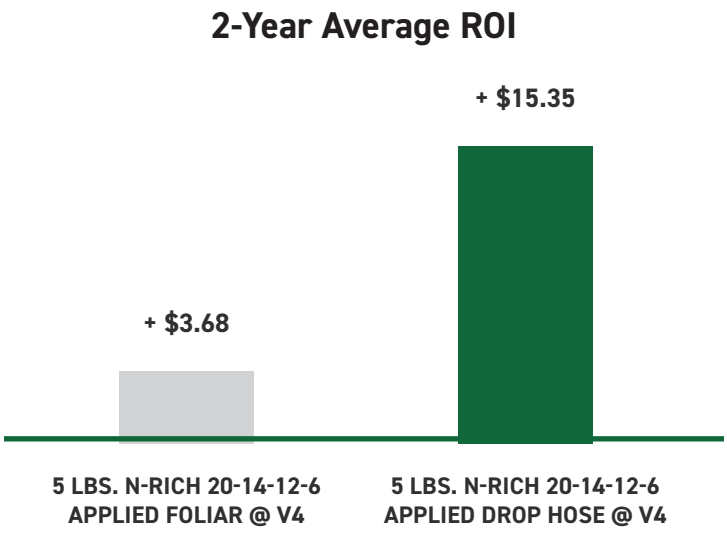
PURPOSE

To evaluate the use of products with nitrogen, phosphorus, and potassium and how they impact return on investment.

OBSERVATION

When applying in-season nutritional products on soybeans, the data suggests it is better to use a method that will concentrate the solution at the base of the plant or in streams over the plant to help the product get into the root zone.

Treatment	Moisture	Yield	Yield Change	ROI
Control: No Additional Treatments	10.8	74.4	N/A	N/A
5 lbs. N-Rich 20-14-12-6 applied Stream Bar @ V4	10.9	75.7	+ 1.3	+ $2.93
5 lbs. N-Rich 20-14-12-6 applied Foliar @ V4	10.9	74.8	+ 0.4	- $6.37
5 lbs. N-Rich 20-14-12-6 applied Drop Hose @ V4	**10.9**	**75.8**	**+ 1.4**	**+ $3.96**



Foliar Study

PURPOSE

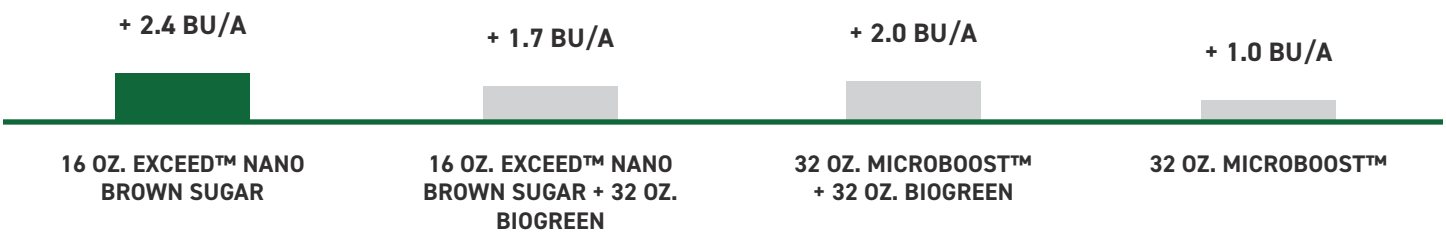
To evaluate the impacts of a variety of foliar products on plant health and yield.

OBSERVATION

Data from year 2 of this study is comparable to the previous year's data. Sugar and biological products increased yield and provided positive ROI. This year's application followed a few rain events and helped the soybean plants weather saturated soil conditions.

Treatment	Moisture	Yield	Yield Change	ROI
Control	9.8	61.6	N/A	N/A
16 oz. eXceed™ Nano Brown Sugar	**9.8**	**65.2**	**+ 3.6**	**+ $32.63**
16 oz. eXceed™ Nano Brown Sugar + 32 oz. BioGreen	9.8	63.7	+ 2.1	+ $9.13
32 oz. MicroBoost™ + 32 oz. BioGreen	10	64.6	+ 3.0	+ $18.99
32 oz. MicroBoost™	10	62.1	+ 0.5	+ $1.17

2-Year Average Yield Increase



Foliar Nozzle Spacing Study

PURPOSE

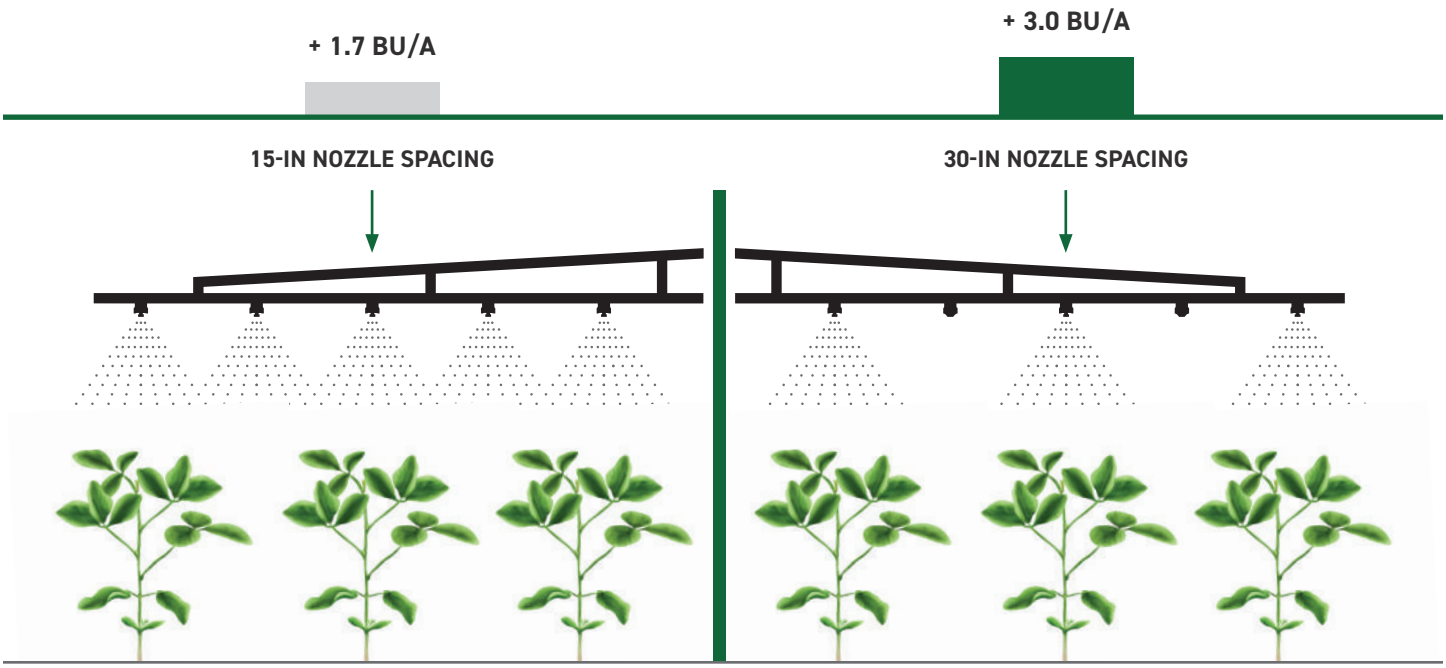
To evaluate the placement of a foliar application and its impact on yield and ROI.

OBSERVATION

As on the corn version of this study, we see more benefit from concentrating the spray to the crop rows. In previous years, we targeted an R3 fungicide application; this year, we targeted an R1 application of a sugar and biological solution. We observed more soil contact when targeting an earlier growth stage because of the smaller plants, especially in the 15-in. nozzle spacing.

Treatment @ R1 32 oz. MicroBoost™ + 32 oz. BioGreen	Moisture	Yield	Yield Change	ROI
Control	8.9	57.1	N/A	N/A
20 GPA (15 in. Spacing)	8.9	58.7	+ 1.6	+ $4.53
20 GPA (30 in. Spacing)	**8.9**	**61.1**	**+ 4.0**	**+ $29.32**
10 GPA (30 in. Spacing)	8.9	58.7	+ 1.6	+ $4.53

3-Year Average Bushel Increase @ 20 GPA



White Mold Study

PURPOSE

To evaluate products marketed to reduce the impacts of white mold in soybeans.

OBSERVATION

This study compares 3 different approaches to help mitigate white mold in soybeans. Aproach® 2.08SC is a fungicide to help with white mold suppression. Fulltec Ultra is a nutritional product with manganese that is targeted to stop white mold and reduce plant injuries caused by chemical application. Lastly, Cobra®, a herbicide, has been used to suppress white mold by reducing the amount of foliage available for the disease to enter in the plant. There was limited white mold pressure in this area of the field this growing season, so we did not see high response in the applications we tested.

Treatment	Moisture	Yield	Yield Change	ROI
Control	9.7	60.1	N/A	N/A
9 oz. Aproach® 2.08SC @ R1 and R3	9.7	62.5	+ 2.4	- $11.21
4 oz. Fulltec Ultra @ V5	9.7	61.1	+ 1.0	+ $1.63
4 oz. Fulltec Ultra @ R3	**9.8**	**61.2**	**+ 1.1**	**+ $2.66**
6 oz. Cobra® @ R1	9.7	59.0	- 1.1	- $14.64
6 oz. Cobra® + 16 oz. eXceed™ NBS @ R1	9.8	57.4	- 2.7	- $35.73

Late Season Foliar Study

PURPOSE

To evaluate the impacts of a R3 application of sugar and biological products compared to a fungicide application.

OBSERVATION

This study evaluates plant health products, such as biologicals and sugars, applied at the R3 growth stage. Can we get similar benefits of a fungicide without having to deal with harvestability challenges like green stems? After the 1st year, data suggests a positive yield in these products when compared to a fungicide.

Treatment	Moisture	Yield	Yield Change	ROI
Control	9.6	56.2	N/A	N/A
32 oz. BioGreen + 32 oz. MicroBoost™	**9.5**	**60.5**	**+ 4.3**	**+ $32.42**
32 oz. BioGreen + 16 oz. eXceed™ NBS	9.5	57.4	+ 1.2	- $0.16
5 oz. Lucento®	9.6	56.6	+ 0.4	- $16.57

Fungicide and Insecticide Study

PURPOSE

To evaluate the addition of sugar and insecticide to an already planned fungicide application and if the addition will improve plant health and provide higher ROI.

OBSERVATION

We've noticed the added benefit of incorporating a sugar product in the R3 application across multiple years of research. After 2 years of this study, we can also highlight the importance of adding a water conditioner. The addition of Regulator 3.0 to the tank mix is providing better plant response, which we attribute to the solution moving quicker into the plant when using a clean carbon product. This year's data also indicates that a fungicide with multiple modes of action provides a higher ROI and is a better choice, even though they cost more.

Treatment	Moisture	Yield	Yield Change	ROI	2-Year Avg. Yield Change
Control: No Fungicide	9.6	58.4	N/A	N/A	N/A
5 oz. Lucento®	9.7	59.0	+ 0.6	- $14.51	+ 0.8
5 oz. Lucento® + 3.2 oz. Mustang® Maxx	9.7	59.0	+ 0.6	- $18.79	+ 1.4
5 oz. Lucento® + 3.2 oz. Mustang® Maxx + 16 oz. eXceed™ Nano Brown Sugar	9.7	58.6	+ 0.2	- $27.48	+ 1.5
5 oz. Lucento® + 3.2 oz. Mustang® Maxx + 16 oz. eXceed™ Nano Brown Sugar + 3.2 oz. Reg. 3.0	9.7	59.6	+ 1.2	- $19.33	+ 2.5
8 oz. Revytek®	9.7	62.8	+ 4.4	+ $21.40	+ 4.0
8 oz. Revytek® + 16 oz. eXceed™ Nano Brown Sugar	9.8	63.2	+ 4.8	+ $20.97	+ 4.3
8 oz. Revytek® + 16 oz. eXceed™ Nano Brown Sugar + 3.2 oz. Reg. 3.0	**9.8**	**64.5**	**+ 6.1**	**+ $32.22**	**+ 5.1**

Trademark Information

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