

# 2018 BRANDT Research and Development Farm Results

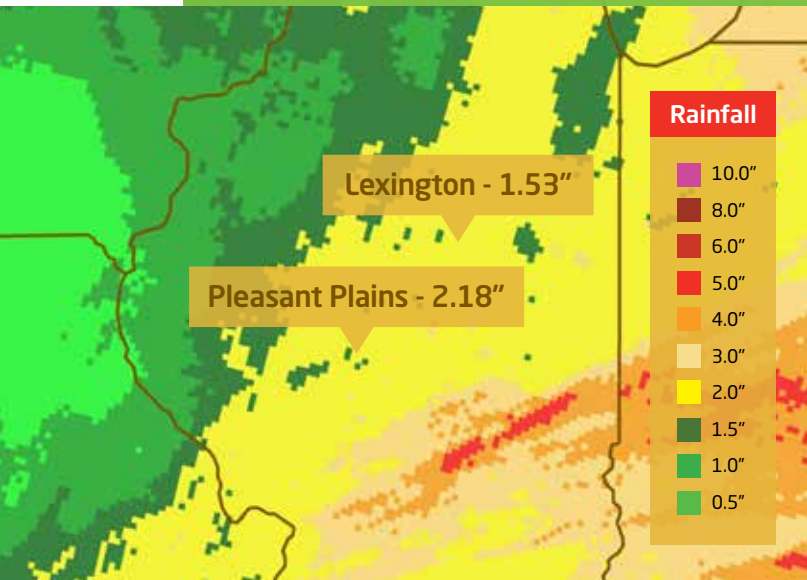
Pleasant Plains and Lexington, IL



# 2018 Illinois Monthly Total Rainfall

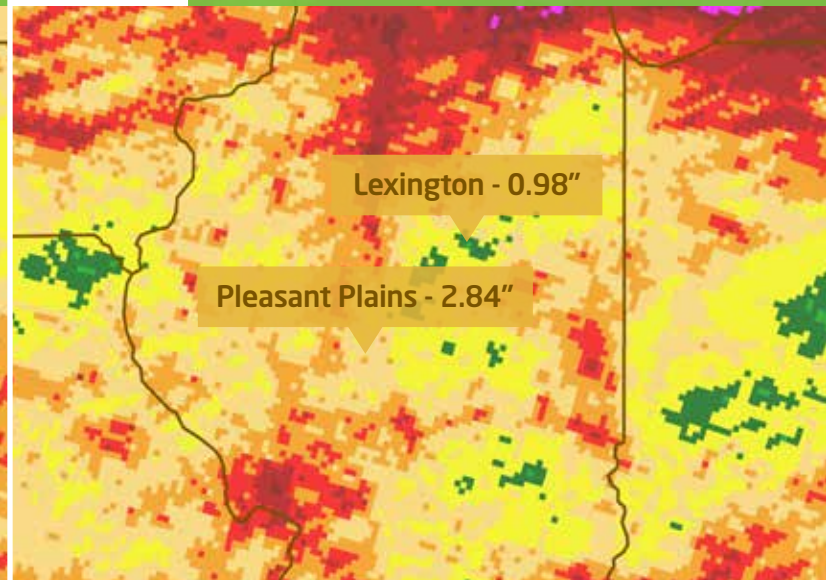
April

**Accumulated Growing Degree Days**  
Pleasant Plains: 196 ..... Lexington: 142



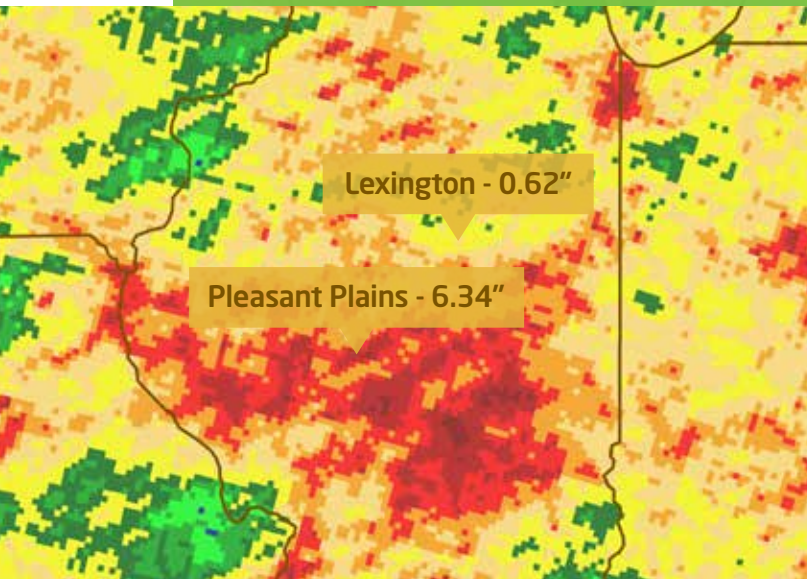
May

**Accumulated Growing Degree Days**  
Pleasant Plains: 926 ..... Lexington: 779



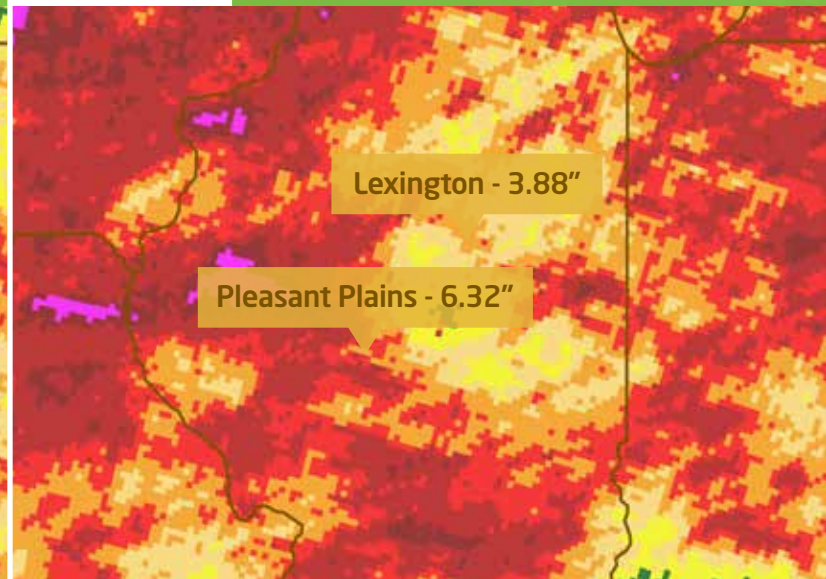
July

**Accumulated Growing Degree Days**  
Pleasant Plains: 2,483 ..... Lexington: 2,221



August

**Accumulated Growing Degree Days**  
Pleasant Plains: 3,283 ..... Lexington: 2,939



## BRANDT® is pleased to release the 2018 results from our research farms in Pleasant Plains and Lexington, IL.

2018 was a good year for corn and soybean production in central Illinois. We thought Mother Nature was going to provide us with an early start to the season with some favorable conditions in March, but that quickly changed with snowfall in early April. The majority of corn and soybean planting occurred between April 23-25. May produced unseasonably warm temperatures and the crops matured at a rapid pace.

The major variable between our two research farms was total precipitation during the growing season. Our Lexington, IL farm received roughly 10 inches less rainfall than Pleasant Plains, IL from April 1 through September 30.

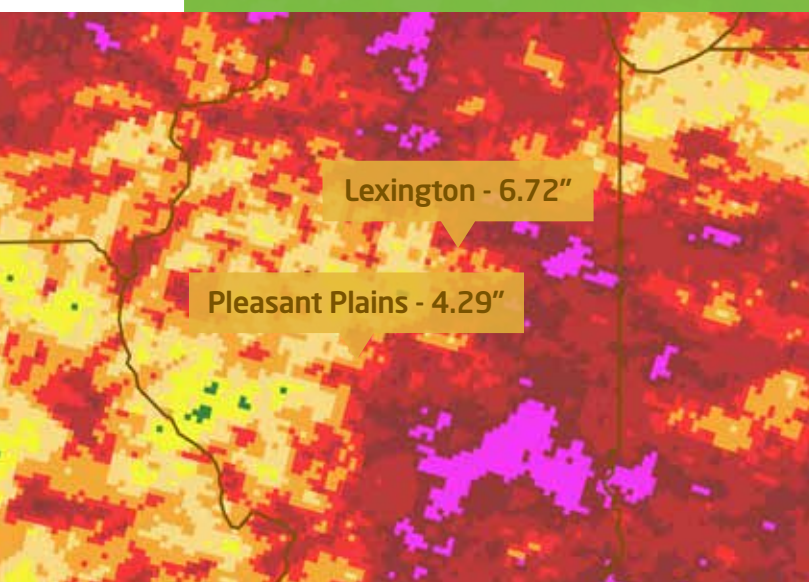
The BRANDT Research Farms produced results in 2018 consistent with multi-year trends. The extensive local data set is invaluable as we make confident recommendations to help our customers achieve high yields and returns on investment.

2019 plans are already in progress and fall applications are being made. Lexington has a new location that is double the size of the current farm, allowing for a more extensive set of trials.



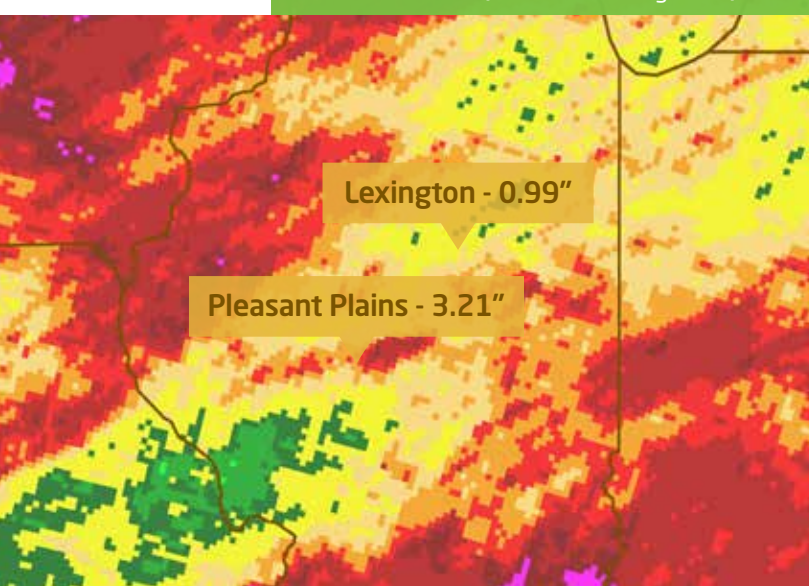
June

**Accumulated Growing Degree Days**  
Pleasant Plains: **1,701** ..... Lexington: **1,496**



September

**Accumulated Growing Degree Days**  
Pleasant Plains: **3,921** ..... Lexington: **3,524**



**We hope you enjoy the 2018 Plot Book.**

*Ed Corrigan - Senior Technical Agronomist*

*Dan Froelich - Technical Agronomist*

*Kyle McClelland - Technical Agronomist*

*Jacob Winans - Technology Information Specialist*

*Steve Clement - Technology Specialist*

Precipitation data from NWS AHPs: <http://water.weather.gov/precip>  
and [www.isws.illinois.edu/warm](http://www.isws.illinois.edu/warm)

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# Pleasant Plains, IL

## Omission Trials - Standard Treatment

Fall NH <sub>3</sub>	Spring NH <sub>3</sub>	Total Nutrition	Planting Date	Population	Harvest Date
150 Units	150 Units	Corn: 190-50-150-20S Soybeans: 15-50-150-20S	4/23/18 - 4/25/18	Corn: 42,000 Soybeans: 120,000	9/4/18 - 10/1/18
<b>Fungicide/Insecticide/Nutrition Application</b>			<b>Herbicide/Nutrition Application</b>		
Corn: Hero®, BRANDT® Smart B-Mo, Delaro™ Soybeans: Hero, BRANDT Smart Trio®, BRANDT Smart B-Mo & Quadris®			Corn: (Pre-emergent) Resicore®; (Post-applied) BRANDT Smart Trio & BRANDT Smart B-Mo Soybeans: (Pre-emergent) Boundary®; (Post-applied) Glyphosate, BRANDT Smart Trio & BRANDT Smart B-Mo		

## Trial Parameters

<b>Block 1 - Continuous Corn</b> <ul style="list-style-type: none"> <li>Foliar Nutritional Stimulants</li> <li>Foliar V4 Stage</li> <li>Conventional Tillage</li> <li>42,000 Population</li> </ul>	<b>Block 2 - Continuous Corn</b> <ul style="list-style-type: none"> <li>Hybrid Trials 30" Rows</li> <li>Conventional Tillage</li> <li>35,000 Population vs High Population</li> </ul>	<b>Block 3 - Continuous Corn</b> <ul style="list-style-type: none"> <li>Hybrid Trials 30" Rows</li> <li>SmartStax® vs VT Double Pro®</li> <li>Conventional Tillage</li> <li>42,000 Population</li> </ul>	<b>Block 4 - Continuous Corn</b> <ul style="list-style-type: none"> <li>Nutrient Response</li> <li>0 to 300 Units of N (no P&amp;K)</li> <li>Conventional Tillage</li> <li>42,000 Population</li> </ul>
<b>Block 5 - First Year Corn</b> <ul style="list-style-type: none"> <li>Hybrid Trials 30" Rows</li> <li>Population Trials: 35,000 vs High Population</li> <li>Conventional Tillage</li> <li>42,000 Population</li> </ul>	<b>Block 6 - First Year Corn</b> <ul style="list-style-type: none"> <li>Hybrid Trials 30" Rows</li> <li>SmartStax vs VT Double Pro</li> <li>Conventional Tillage</li> <li>42,000, 38,000, 34,000 Population</li> </ul>	<b>Block 7 - Soybeans</b> <ul style="list-style-type: none"> <li>Variety Trials 3.2 to 3.7 Maturity</li> <li>20" vs 30" Row Width</li> <li>Conventional Tillage</li> <li>120,000 Population</li> </ul>	<b>Block 8 - Soybeans</b> <ul style="list-style-type: none"> <li>Variety Trials 3.9 to 4.2 Maturity</li> <li>20" vs 30" Row Width</li> <li>Conventional Tillage</li> <li>120,000 Population</li> </ul>
<b>Block 9 - Continuous Corn</b> <ul style="list-style-type: none"> <li>Fall NH<sub>3</sub> vs Spring NH<sub>3</sub> vs 28%</li> <li>Sulfur Response at Plant</li> <li>Conventional Till vs No Till</li> <li>42,000 Population</li> </ul>	<b>Block 10 - Continuous Corn</b> <ul style="list-style-type: none"> <li>Fall NH<sub>3</sub> vs Spring NH<sub>3</sub> vs 28%</li> <li>Sulfur Response at Plant</li> <li>Conventional Till vs No Till</li> <li>42,000 Population</li> </ul>	<b>Block 11 - Continuous Corn</b> <ul style="list-style-type: none"> <li>Fall NH<sub>3</sub> vs Spring NH<sub>3</sub> vs 28%</li> <li>Sulfur Response at Plant</li> <li>Conventional Till vs No Till</li> <li>42,000 Population</li> </ul>	<b>Block 12 - Continuous Corn</b> <ul style="list-style-type: none"> <li>Fall NH<sub>3</sub> vs Spring NH<sub>3</sub> vs 28%</li> <li>Sulfur Response at Plant</li> <li>Conventional Till vs No Till</li> <li>42,000 Population</li> </ul>
<b>Block 13 - First Year Corn</b> <ul style="list-style-type: none"> <li>Foliar Nutritional Stimulants</li> <li>Sulfur Response at Plant</li> <li>Conventional Till vs Strip Till</li> <li>42,000 Population</li> </ul>	<b>Block 14 - First Year Corn</b> <ul style="list-style-type: none"> <li>High Yield Trial 20" vs 30"</li> <li>Fungicide Response vs Population</li> <li>Conventional Till vs Strip Till</li> <li>34,000 to 56,000 Population</li> </ul>	<b>Block 15 - Soybeans</b> <ul style="list-style-type: none"> <li>30" row Seed Treatment</li> <li>Fungicide Response vs Seed Treatment</li> <li>Conventional Till vs No Till</li> <li>120,000 Population</li> </ul>	<b>Block 16 - Soybeans</b> <ul style="list-style-type: none"> <li>30" Row Foliar Omission to 5 trips</li> <li>Sulfur Response at Plant</li> <li>Conventional Till vs No Till</li> <li>120,000 Population</li> </ul>
<b>Cover Crops</b> <ul style="list-style-type: none"> <li>Oats in Fall .....</li> </ul>	<b>Planting Date Trials</b> <ul style="list-style-type: none"> <li>Corn and Soybeans</li> <li>3/15/18 - 5/24/18</li> </ul>	<b>Pipeline</b> <ul style="list-style-type: none"> <li>Response to Starters, Vegetative Foliar Nutrients, R Stage Foliar Nutrients</li> <li>Population - 42,000 Corn and 120,000 Soybeans</li> </ul>	





# Lexington, IL

## Omission Trials - Standard Treatment

Total Nutrition	Planting Date	Population	Harvest Date
<b>Corn:</b> 200-69-150-20S <b>Soybeans:</b> 18-46-120-20S	4/27/2018 - 4/30/2018	<b>Corn:</b> 39,000 <b>Soybeans:</b> 130,000	9/17/2018
Fall NH <sub>3</sub>	Preplant 28%	At Plant Nutrition	Side Dress 28%
<b>Corn:</b> 140 Units - with N-Serve	60	0	0
Fungicide/Insecticide/Nutrition Application		Herbicide/Nutrition Application	
<b>Corn:</b> Trivapro®, Warrior II with Zeon Technology®, Lorsban®, BRANDT Smart Trio, BRANDT Smart B-Mo <b>Soybeans:</b> Trivapro, Warrior II with Zeon Technology, Lorsban, BRANDT Smart Trio, BRANDT Smart B-Mo, N-Boost® 5		<b>Corn:</b> (Pre-emergent) Acuron® (Post-applied) Halex® GT, BRANDT Smart Trio & BRANDT Smart B-Mo <b>Soybeans:</b> (Pre-emergent) Boundary (Post-applied) Engenia®, Roundup WeatherMax®, BRANDT® Smart Sulfur Plus	

## Trial Parameters

<b>Block 1</b> - First Year Corn <ul style="list-style-type: none"> <li>Planting Date Trial</li> </ul>	<b>Block 2</b> - First Year Corn <ul style="list-style-type: none"> <li>Stress Mitigation</li> <li>Starter</li> <li>Starter Additives</li> <li>Tillage</li> </ul>
<b>Block 3</b> - First Year Soybeans <ul style="list-style-type: none"> <li>Seed Treatment</li> <li>Stress Mitigation</li> </ul>	<b>Block 4</b> - First Year Soybeans <ul style="list-style-type: none"> <li>Soybean Planting Date</li> </ul>
<b>Block 5</b> - First Year Corn and Soybeans <ul style="list-style-type: none"> <li>Soybean Tillage Trial</li> <li>Cover Crop Termination</li> <li>Cover Crop Fertility Management</li> </ul>	<b>Block 6</b> - Continuous Corn <ul style="list-style-type: none"> <li>BRANDT Total Acre® vs Traditional Management</li> <li>Row Width</li> <li>Population</li> <li>Fungicide</li> <li>P&amp;K</li> </ul>
<b>Block 7</b> - First Year Soybeans <ul style="list-style-type: none"> <li>Starter on Soybeans</li> <li>Starter Additives</li> <li>Soybean Population</li> </ul>	

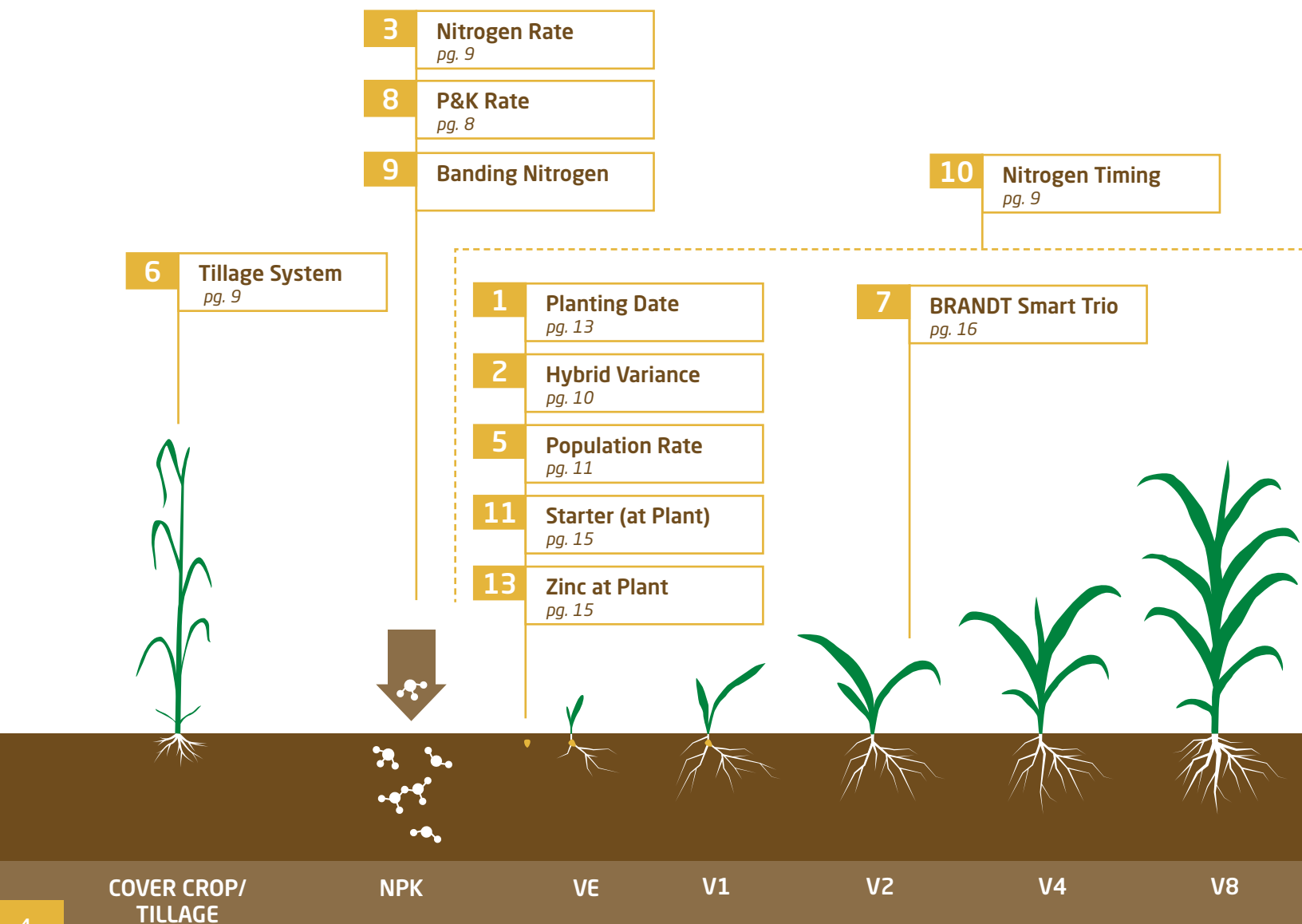
We use an omission style plot technique at our research farms to determine the value of the BRANDT Total Acre and each individual application as it is omitted. We can then analyze the data to determine yield and return on investment outcomes. The goal is to develop local insights to maximize yield and return on every acre.

Throughout the book, there are areas where an economic analysis is paired with yield. For consistency, we use the 2018 harvest crop insurance price of \$3.68/bu for corn and \$8.60/bu for soybeans.

# BRANDT Total Acre Pole Positions

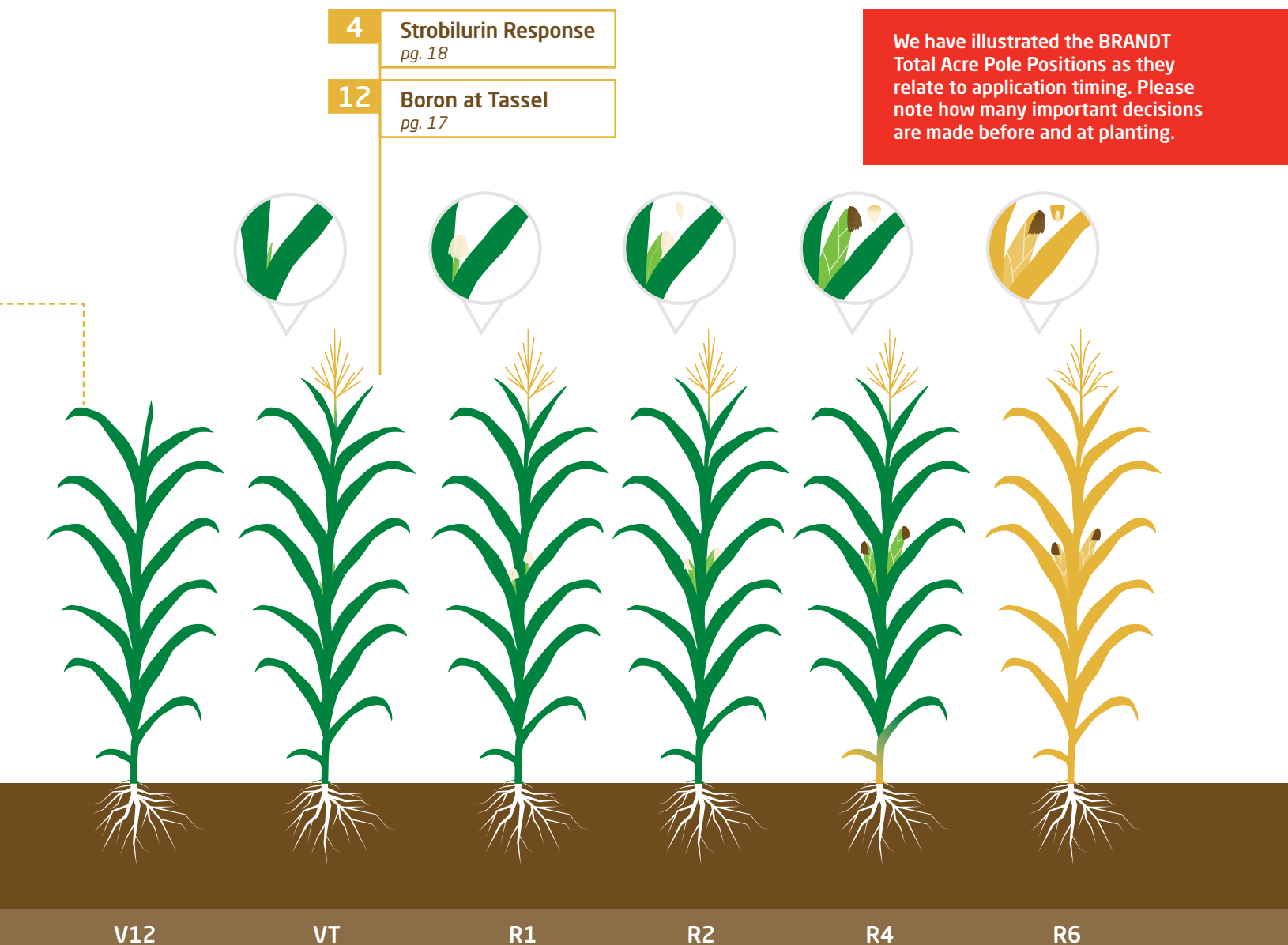
The BRANDT Total Acre base applications reflect a high yield management recommendation that can be implemented in parts or as a whole to fit within a grower's current program. The BRANDT Total Acre base applications for 2018 were:

- 15-50-150 suspension in fall
- Fall  $\text{NH}_3$  - 150 units
- Band at plant 18-0-0-20S (2x0)
- 2.5 gal/ac in furrow starter +BRANDT® Sequestar® 9% Zinc
- 42,000 population
- Conventional till in fall, Salford in spring
- Plant on ammonia line
- Pre-emergent herbicide at plant with water
- 1 qt/ac glyphosate, BRANDT Smart Trio, BRANDT Smart B-Mo
- Fungicide at R1 + BRANDT Smart B-Mo + insecticide



BRANDT Total Acre Pole Positions		2011	2012	2013	2014	2015	2016	2017	2018	8 yr Avg	8 yr ROI
1	Planting Date	n/a	67.6	99.6	94.2	41.8	97.3	47.0	36.4	69.1	\$\$\$
2	Hybrid Variance	56.2	39.3	18.1	11.5	47.1	33.1	35.1	65.3	38.2	\$\$\$
3	Nitrogen Rate	18.3	16.3	47.8	36.1	35.7	31.2	15.1	14.9	26.9	2.2
4	Strobilurin Response	14.1	51.7	13.4	14.3	21.2	27.2	17.0	24.8	23.0	2.7
5	Population Rate	13.9	3.7	32.5	27.3	40.4	12.3	16.6	7.0	19.2	1.6
6	Tillage System	n/a	n/a	n/a	19.7	15.0	19.5	18.8	22.1	19.0	3.9
7	BRANDT Smart Trio	15.9	22.0	22.1	34.1	17.5	15.8	6.5	15.1	18.6	15.2
8	P&K Rate	27.4	23.3	10.7	16.7	10.1	14.1	16.0	24.1	17.8	1.2
9	Banding Nitrogen	n/a	n/a	13.0	15.4	22.9	11.9	20.9	n/a	16.8	\$\$\$
10	Nitrogen Timing	n/a	n/a	23.0	20.5	7.6	16.3	2.0	21.7	15.2	\$\$\$
11	Starter (28% Sulfur at Plant)	4.5	4.0	11.1	13.6	13.6	13.4	6.7	21.3	11.0	2.7
12	Boron at Tassel	7.0	4.0	n/a	9.3	5.9	6.8	12.4	n/a	7.6	7.0
13	Zinc (1qt/ac)	10.9	8.1	4.6	20.7	5.0	1.2	4.1	4.1	7.3	4.3

The ROI (Return On Investment) listed is calculated using the 2018 fall crop insurance price of \$3.68 per bushel, multiplied by the yield response per acre, minus the cost per acre of a practice. For every dollar invested per acre in a practice, the ROI factor is how many dollars you get in return. We use a symbol of \$\$\$ for practices that had no measurable cost per acre, but offer the best ROI.







## 2018 Corn Grower Insights to Increasing Yields

We learned a tremendous amount this growing season. Mother Nature threw us a curveball with a cold April and hot May which got the crops off to a fast pace. Early and balanced nutrition was critical under these conditions. The corn plants tended to run out of available nitrogen late in the season and our drainage tiles reflected the same.

- Neighboring fields where ATS was not applied showed yellowing corn from sulfur deficiency. ATS paid on our acres!
- Fungicide was a NO-BRAINER – great ROI
- 20 inch rows continued to outpace the wider rows this year
- Stalks stayed green all the way to harvest



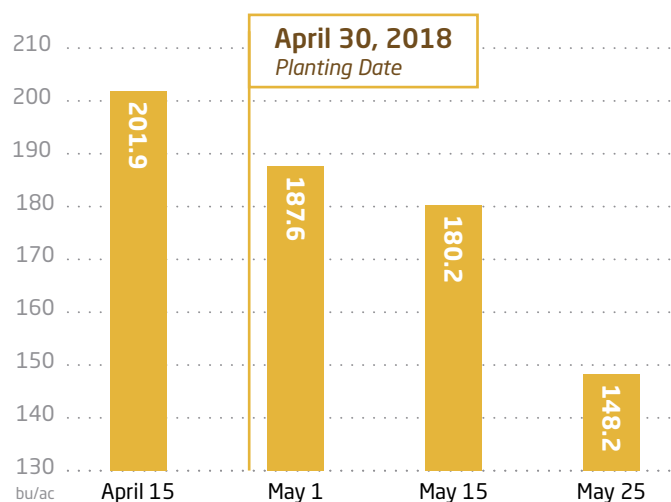
# Corn Cover Crop Management

Geography and harvest timing can have an influence on which type of cover crop may work best under certain conditions. We focused on cereal rye for our 2018 cover crop trials at our Lexington research farm rather than a self-terminating cover crop.

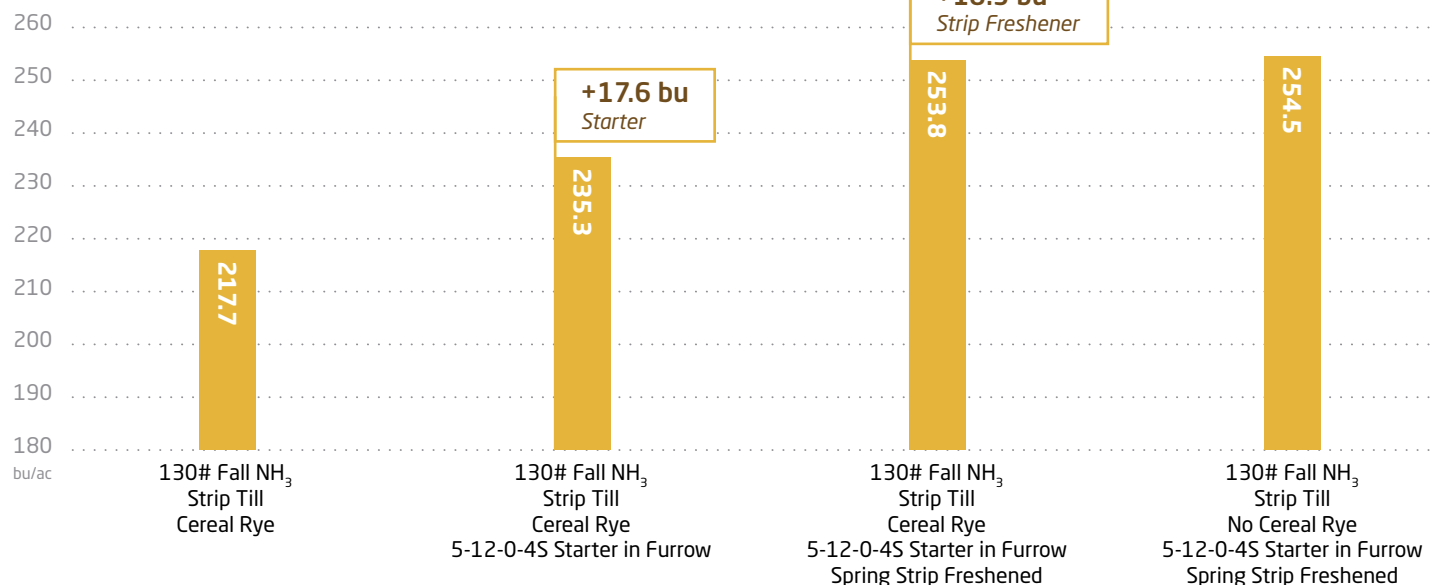
- Early termination achieved the highest yield as we have witnessed in previous years trials
- Additional nutrient management combined with some tillage significantly increased yields
- Cover crops do an excellent job for soil health and capturing unused nutrients for future crop utilization

There are many benefits of cover crops use, but they must be managed like any other input. Type of cover crop, placement, timing and management will dictate its success.

## Corn Cover Crop Termination Date Study



## Managing Cover Crops





Corn



Fall Fertility

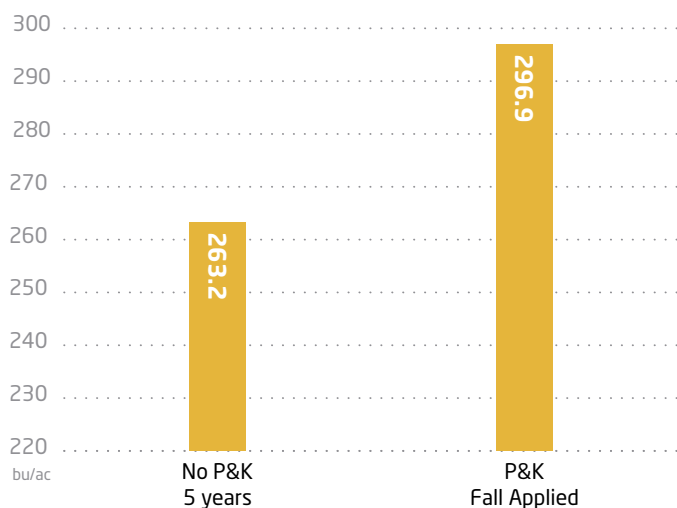


Pleasant Plains, IL

# P&K on Corn

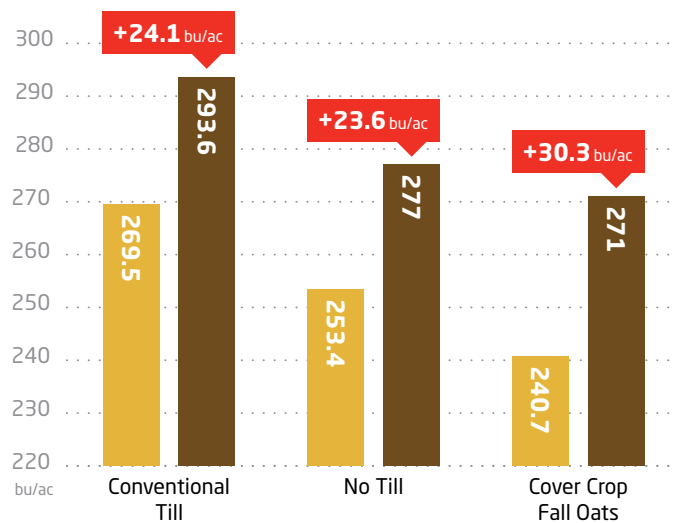
Under tight economic conditions, growers are faced with difficult decisions. Fertilizer maintenance should **not** be a difficult decision. Mining the soil for short term gain will have a long term negative impact on yields.

## 5 Years No P&K vs Maintenance Program



## P&K Maintenance and Tillage

■ 2 Years No P&K ■ P&K Replaced



## Fertilizer Rate Examples Based on U of I Recommendations

Crop	Nutrients Removed		Fertilizer		
	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	DAP	or MAP	Potash
Corn Yield					
300	111	72	241	213	120
275	102	66	221	196	110
250	93	60	201	178	100
225	83	54	181	160	90
200	74	48	161	142	80
(bu/ac)	(lbs/ac)		(lbs/ac)		

Crop	Nutrients Removed		Fertilizer		
	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	DAP	or MAP	Potash
Soybean Yield					
100	75	117	163	144	195
90	68	105	147	130	176
80	60	94	130	115	156
70	53	82	114	101	137
(bu/ac)	(lbs/ac)		(lbs/ac)		

## Two Crop Combined Fertilizer Maintenance

Corn		Soybeans		DAP	or	MAP	Potash
250	+	70	=	315		279	237
(bu/ac)		(bu/ac)				(lbs/ac)	





# Response to Nitrogen Source and Rate

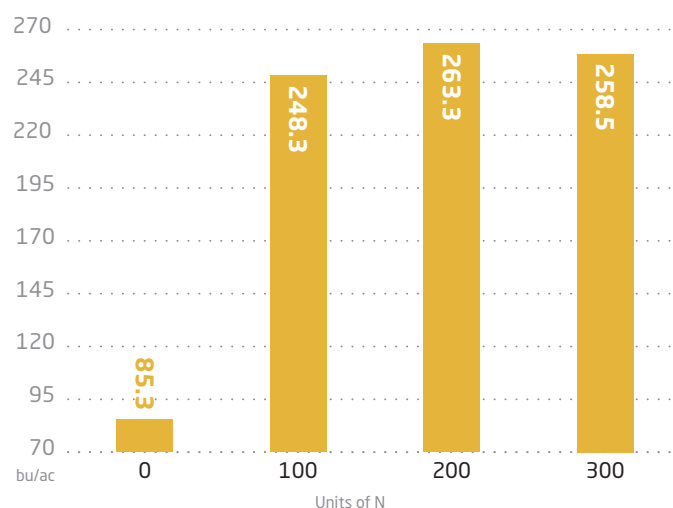
2018 is the fourth year for this specific trial. Results have been consistent with conventional tillage and fall applied  $\text{NH}_3$  as the clear winner all 4 years. Across all tillage and cover crop scenarios in the trial, fall  $\text{NH}_3$  produced the most yield.

- Find the MRTN (Maximum Return to Nitrogen) that fits your production practices
- Fall  $\text{NH}_3$ , spring  $\text{NH}_3$ , or spring 28% are all viable sources and timings of nitrogen applications
- 18-0-0-20S was applied at planting across all trials

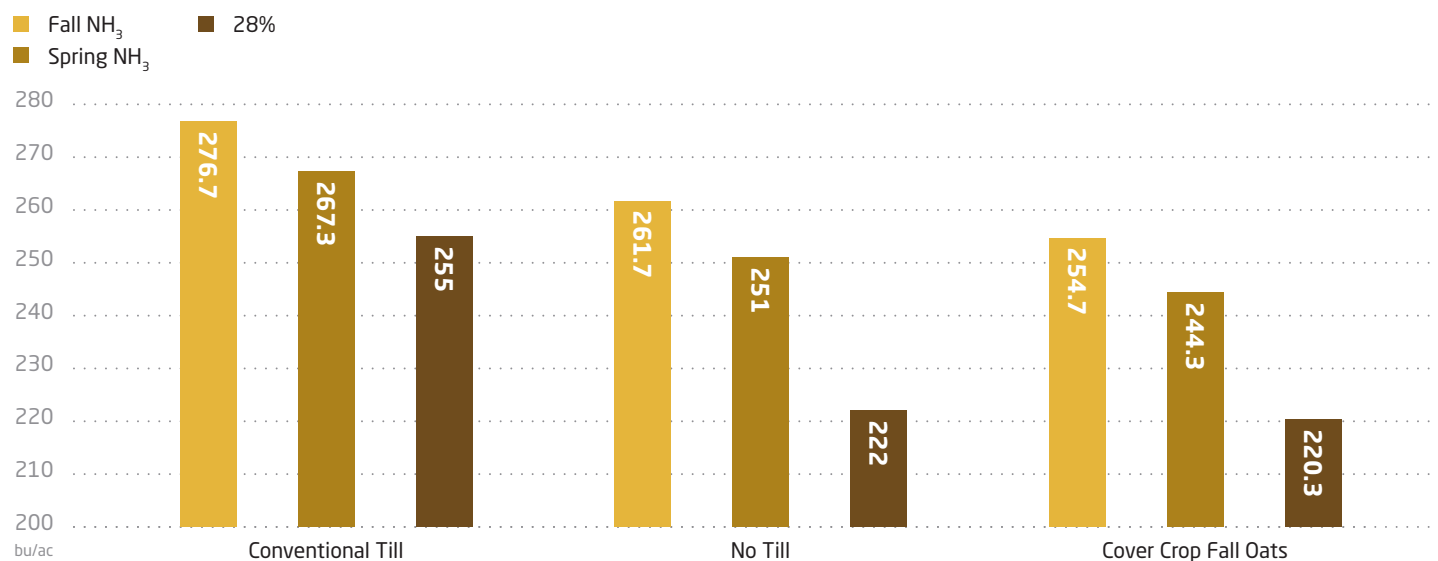
We take a 4R approach to nitrogen applications, which ultimately delivers the best results with the least negative environmental impact. Every year is different as weather plays a major role in nutrient availability and crop yields. However, 200-250 lbs of applied nitrogen has consistently delivered the maximum return to nitrogen.

*Note: On average, corn grain removes 1 lb of nitrogen per bu/ac.*

**N Rate Trial**



**Nitrogen Source and Tillage**



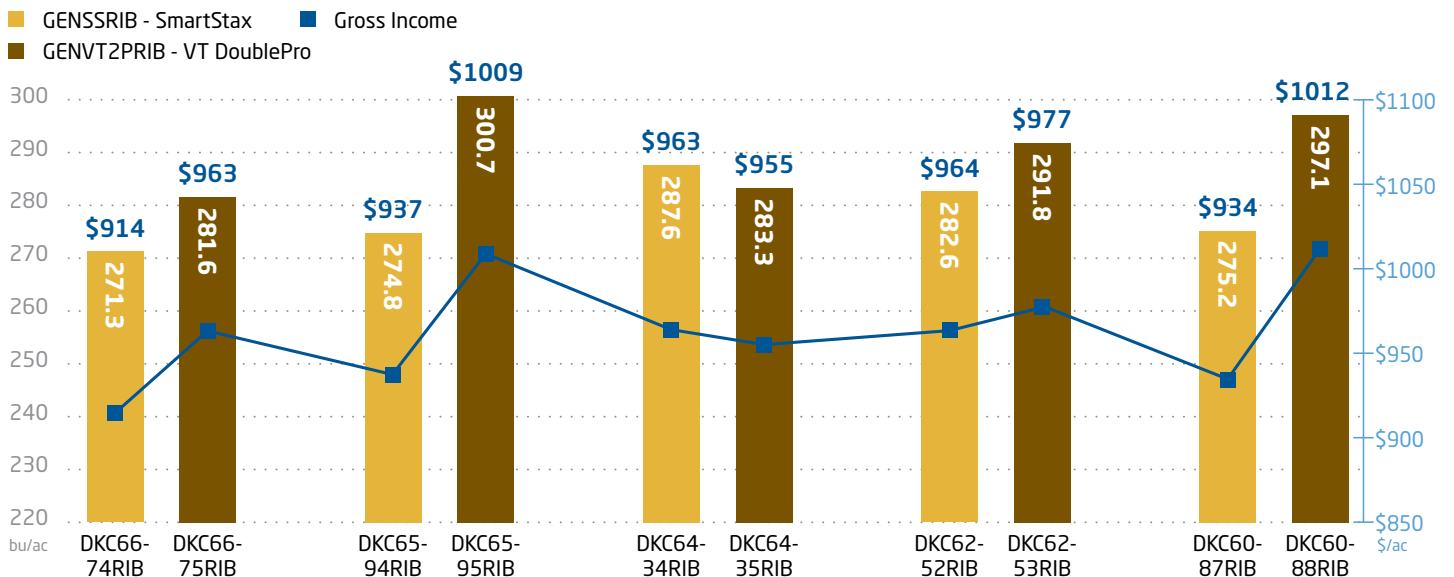
# 2018 Hybrid Trait Comparison

New for 2018 is our hybrid trait trial comparing SmartStax and VT DoublePro trait packages. In 4 out of 5 hybrids, the VT DoublePro trait package out yielded the SmartStax package. Traits are designed to protect yield not necessarily add yield. Understanding and/or managing insect pressure in your field will dictate the success of different traits available.

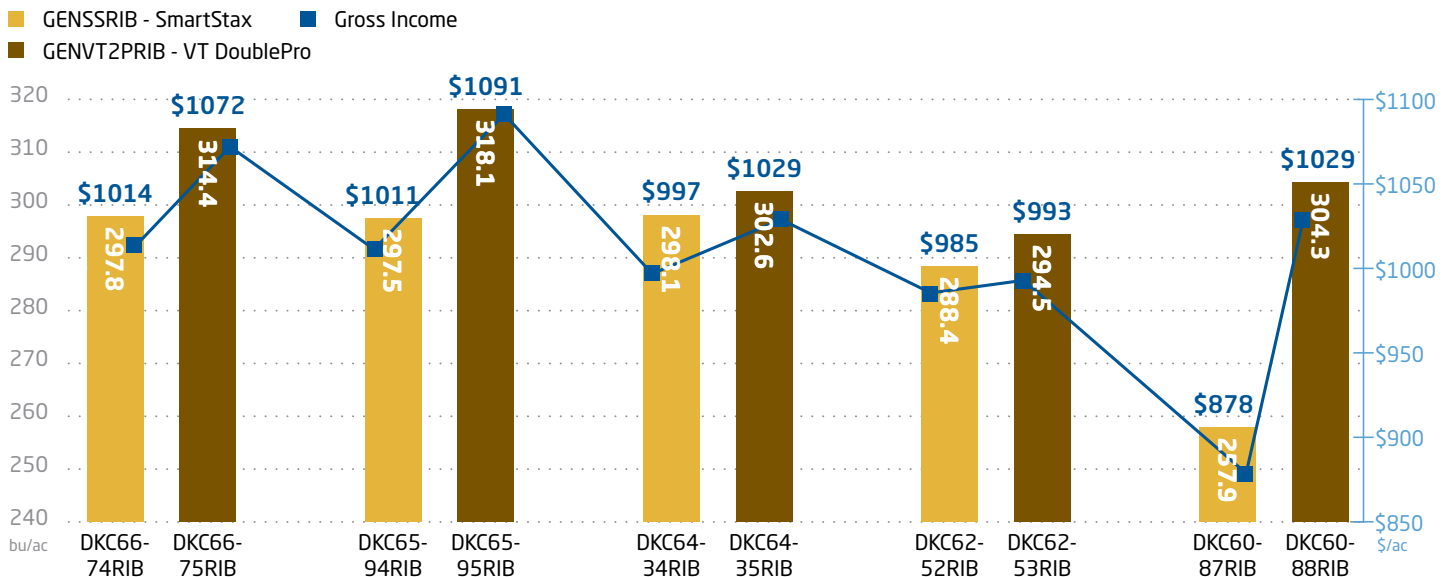
- Choose the trait package that is right for your fields
- VT DoublePro trait packages performed better at the research farm where insect pressure was low or managed in 2018
- SmartStax hybrids add a level of protection right out of the bag

Hybrid and trait placement on your farm is one of your most important decisions. Planning for each field will prepare you for a successful 2019 season.

## Continuous Corn



## First Year Corn





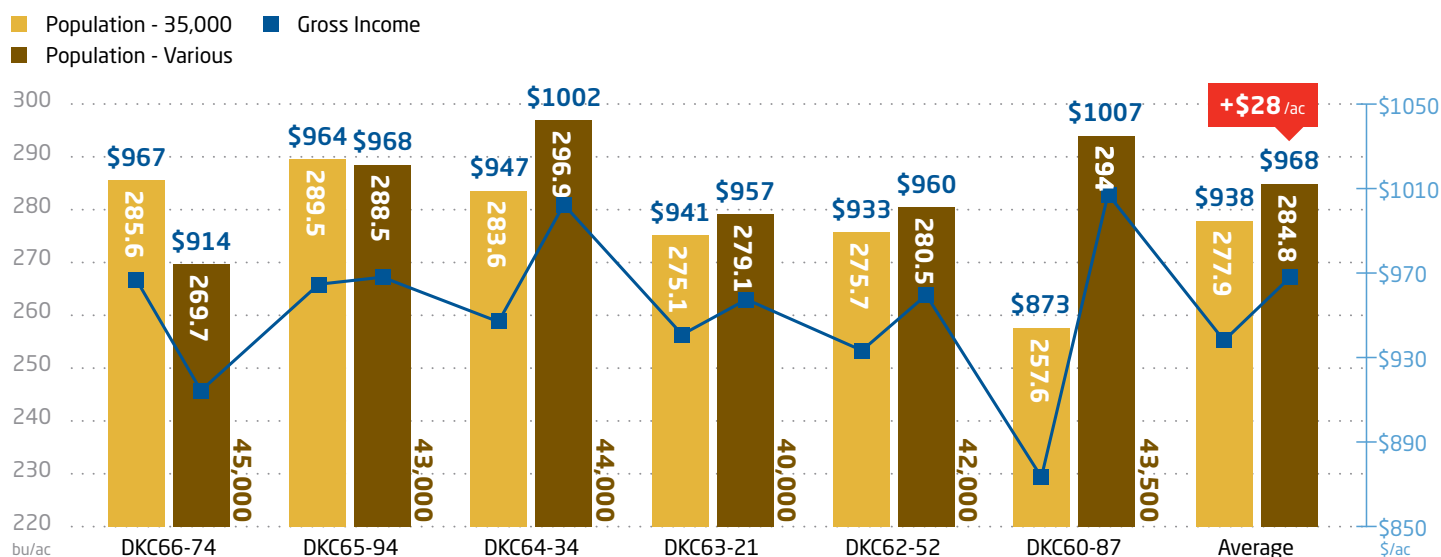
# Planting Rate Economic Optimization Trial

The difference in return on your corn acres could be as simple as matching hybrid with population and management. Our seed partners have an extensive data set that assists with this process. In this trial we are looking at the recommended economic optimization planting rate on first year corn, and continuous corn scenarios.

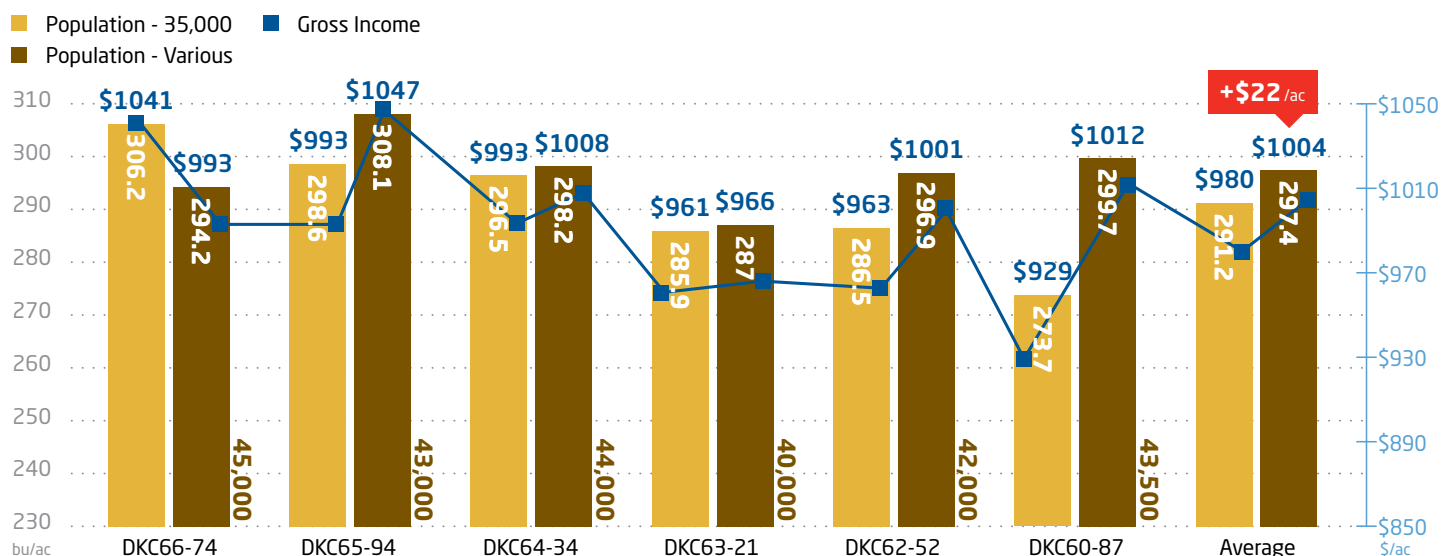
- Use the tools and data available to optimize every acre
- Hybrid diversification and optimized planting rates will produce an increased ROI
- Our research farm data shows an 80% win rate using the economic optimization planting rate

It does not pay to plant one population across every acre. Optimization is key.

## Continuous Corn



## First Year Corn



# Corn Yield by Row Width and Population

Population and row width are two decisions faced by growers year after year. Planting populations should fit the hybrid, soil type, fertility and other management practices. Planting low populations could mean not getting the most yield out of every acre, and planting too high population could be detrimental to yield, standability and profitability. There is a balance illustrated below.

Row width is something we have been testing at the research farm for four years. In each of those years, the 20 inch rows have proven to be higher yielding when compared to 30 inch rows.

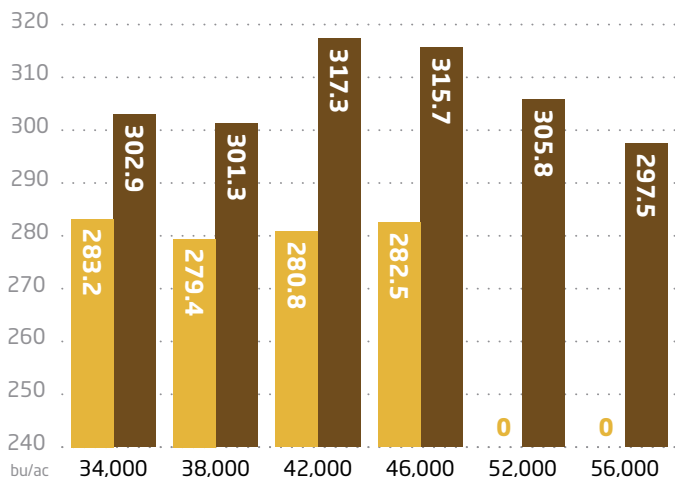
- For the 4th year, 20 inch rows had the advantage over 30 inch rows across multiple populations
- Rely on historical data and agronomists to help match hybrids and population on your farm
- Understand the economical thresholds of pushing populations with your management practices
- Look to local performance data when making decisions

Row width is a capital decision that a grower can make at their discretion. This trial is designed to provide population recommendations based on row width.



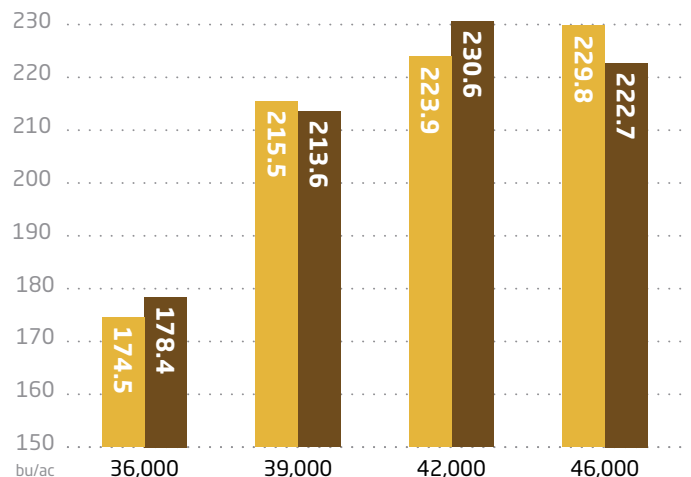
## Pleasant Plains

- Row Width - 30 inch
- Row Width - 20 inch



## Lexington

- Row Width - 30 inch
- Row Width - 20 inch





# Planting Date

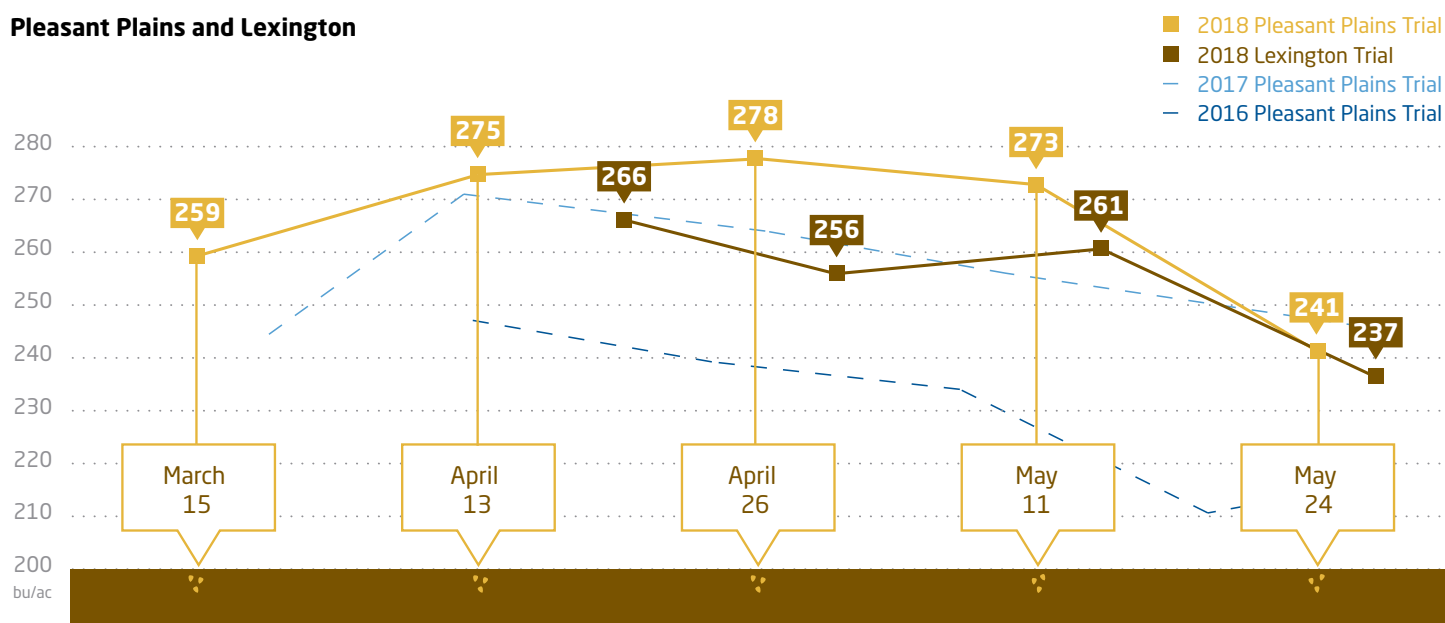
The 2018 spring weather was a story of two extremes. April was one of the coldest on record. Remember the snow events we had April 9 in Pleasant Plains and April 16 in Lexington? May was one of the hottest on record. Cool April soil temperatures slowed the germination process, but didn't impact yield. Our March 15 planting was clearly too early.

- Watch long range forecast trends, soil temperatures and soil moisture to start planting rather than dates on the calendar
- Seed treatments and available nutrition are very important to protect against early stage stresses
- Early planting dates increase the plants exposure to sunlight
- Early flowering leads to slow grain fill, helping maximize yield



Every year will be different. Pay attention to soil temperatures and warming trends to predict when to plant for maximum sunlight and moisture.

## Pleasant Plains and Lexington



# Corn Response to Sulfur

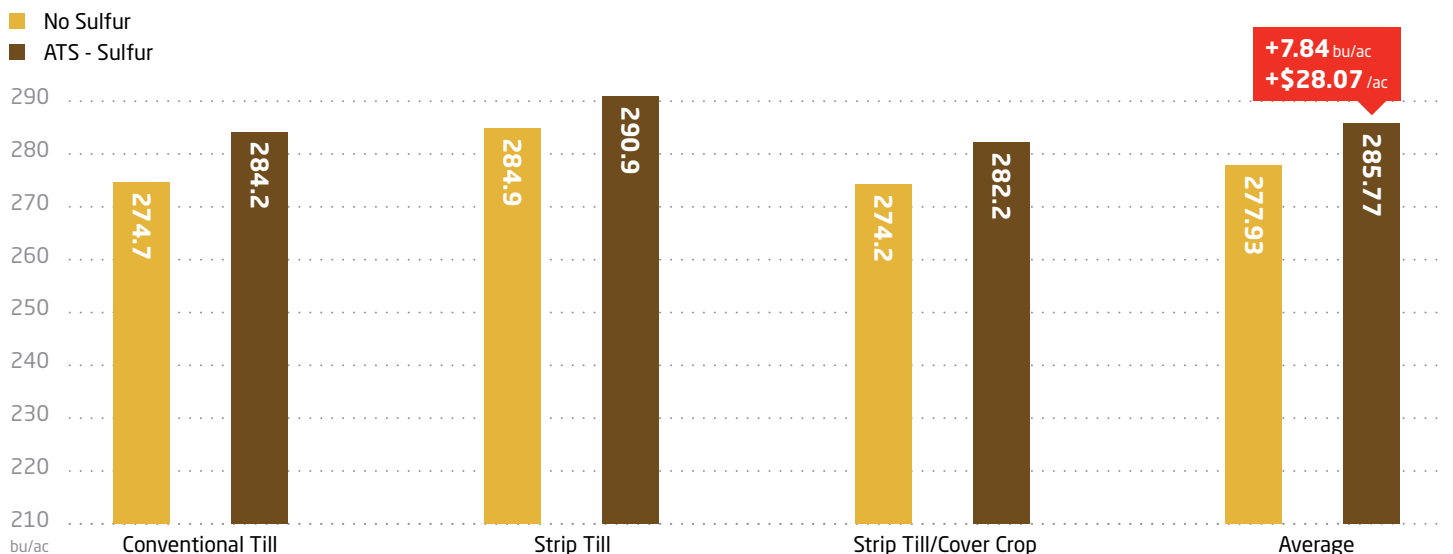
Yield response to applications of sulfur, specifically ammonium thiosulfate (ATS), continues to show positive results. Visual signs of deficiency are more apparent at early growth stages. Sulfur deficiency should be corrected before reproductive stages when sulfur uptake is at its peak.

- Response to sulfur (ATS) applied 2x0 at planting was positive across all tillage/cover crop systems tested
- It is important to have plant available sulfur throughout the entire growing season. Consider a product, such as ATS, that has both sulfate and elemental forms of sulfur
- Sulfur is mobile through the soil profile so application timing is critical for best results
- Early rains may have moved sulfur through the profile more quickly in conventional tillage versus strip tillage, causing reduced yield

Sulfur is a must-apply nutrient in modern corn fertility programs. It should be ranked right behind NPK.



## Sulfur Response on Corn at Planting - 1st Year Corn





# BRANDT Starter Fertilizer and Zinc Formulations

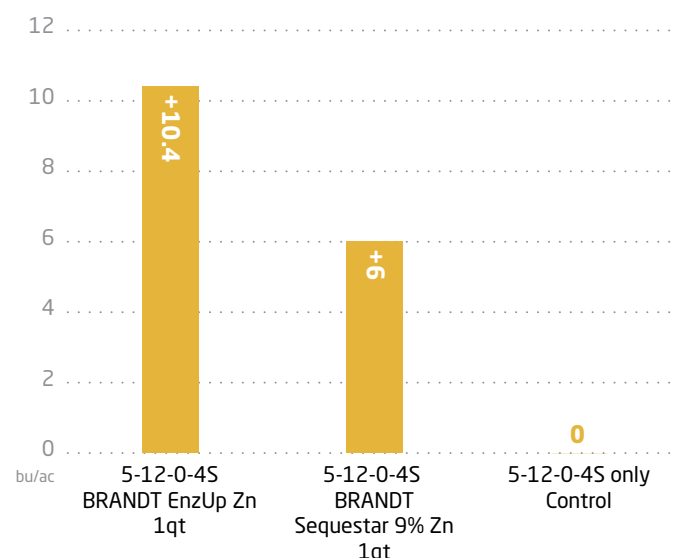
In this trial we are looking at the response to BRANDT 5-12-0-4S as an in-furrow application alone and with the addition of BRANDT Sequestar 9% Zn or BRANDT EnzUp® Zn. All products are designed to increase early plant health and reduce stress under early unfavorable conditions.

- BRANDT 5-12-0-4S quickly boosts plant growth during critical or high growth periods
- Zinc plays a critical role in growth development and is an important micronutrient for producing high yields
- High levels of soil phosphorus can reduce zinc uptake in the plant. Under these conditions plants will benefit from additional zinc applications
- BRANDT EnzUp is a patented enzyme technology that improves nutrient availability and uptake

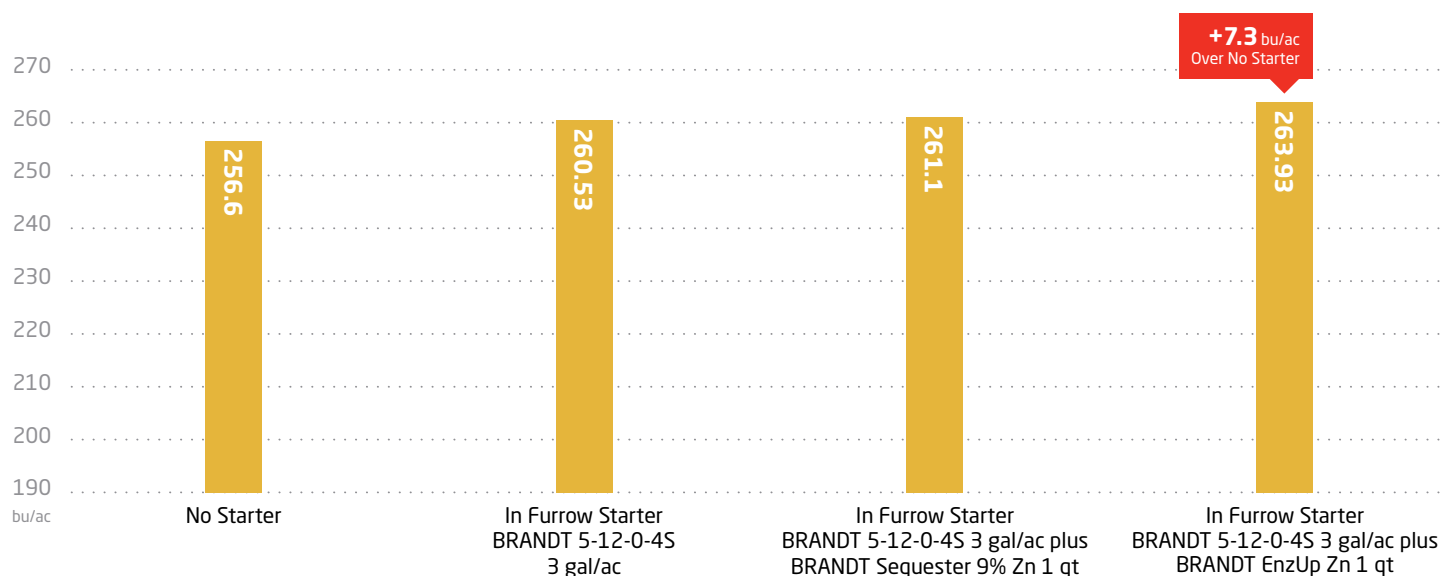
The addition of BRANDT chelated zinc and the enzyme technology to a starter solution is a great way to feed the plant supplemental zinc and increase uptake at a critical growth stage.

## Starter Average Advantage - Pleasant Plains

BRANDT Pipeline



## Corn Starter Fertilizer Trial - Lexington





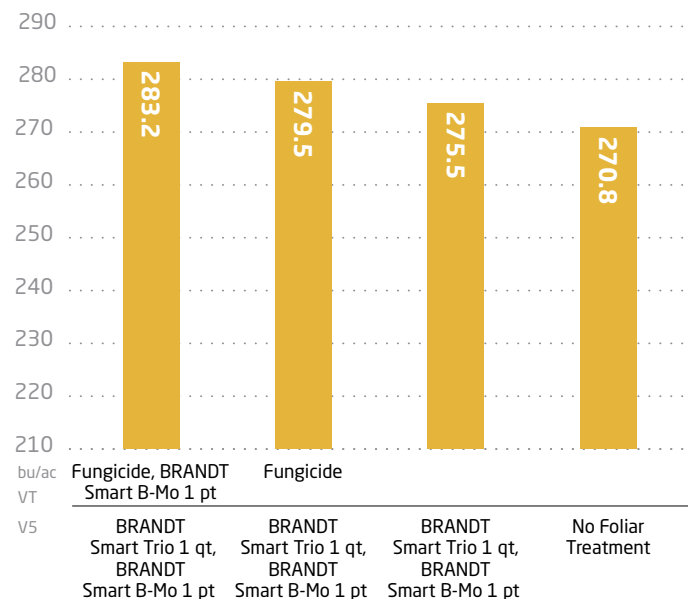
# Stress Mitigation and Pipeline Products

BRANDT Smart System® foliar nutrients have been a staple in our stress mitigation trials. Due to changes in crop protection programs these products have changed in recent years to be compatible with new formulations, offering the same level of response. At both research farm locations, the yield response to BRANDT foliar products was positive.

- Products are compatible with new crop protection formulations
- These products aid in the metabolism of herbicides
- Products should be selected based on the timing of application to fit the ideal nutrient uptake of the targeted element
- Provides increased ROI

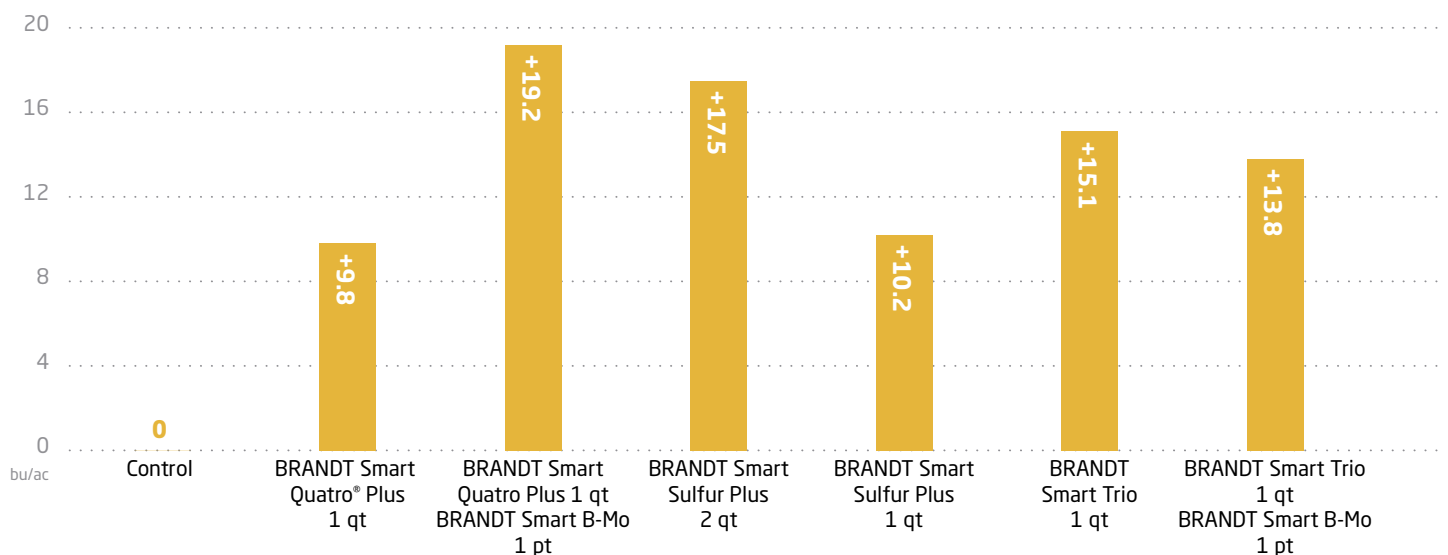
BRANDT Smart System foliar nutrients provide specific supplemental nutrition in-season when crop nutrient utilization is high due to the physiological functions being carried out by the plant. Micronutrient deficiencies can sometimes be the limiting factor in producing the desired yield.

## Stress Mitigation - Lexington



## Foliar Average Advantage - Pleasant Plains

BRANDT Pipeline

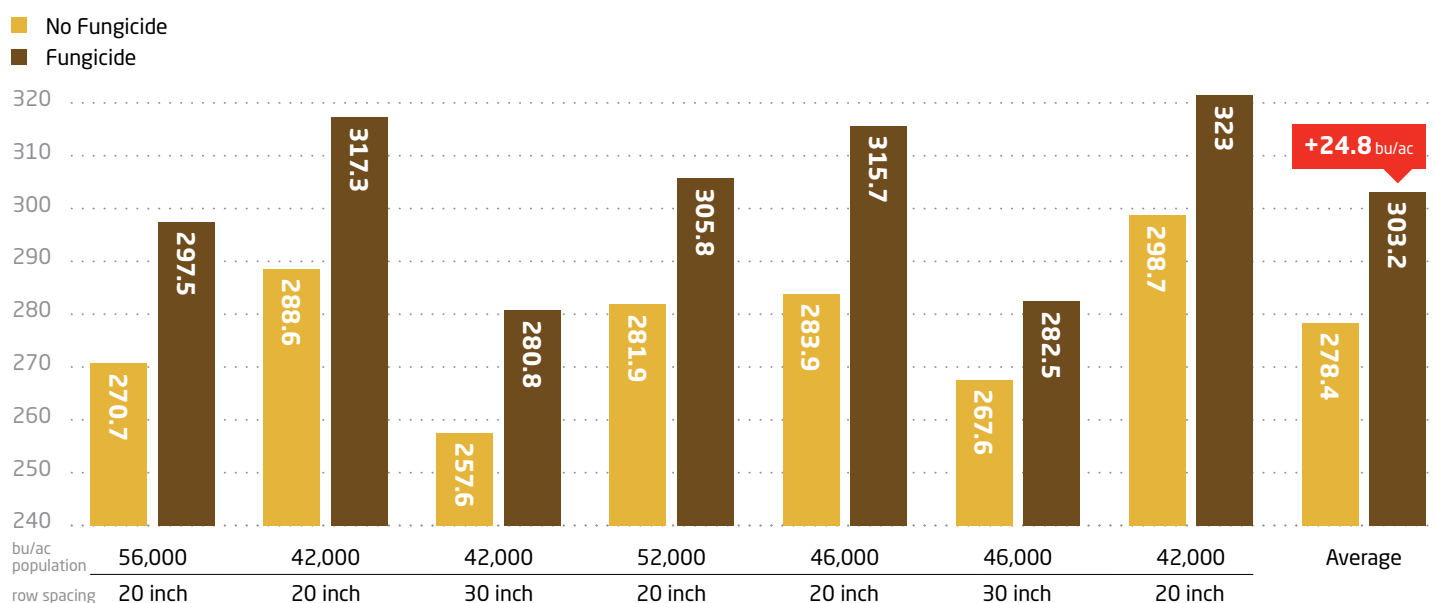


# Response to Fungicide & BRANDT Smart B-Mo

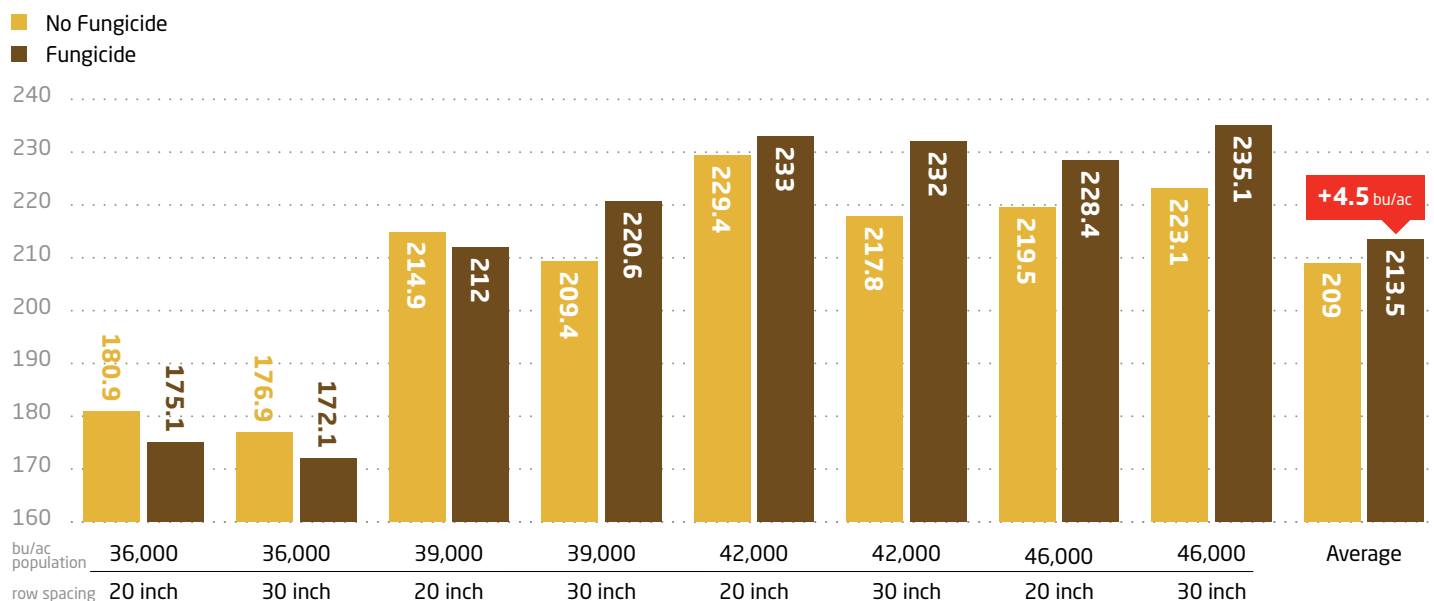
- Response to fungicide was significant in 2018 on our research farms and throughout the BRANDT retail agronomy footprint
- Fungicide response was greater on high management, high fertility scenarios
- We focused on R1 timing, but benefits can be realized outside the R1 growth stage

Disease pressure or outbreaks can be very hard to predict and many factors contribute to its severity. 13 years of fungicide data reflects a consistent return on investment under varying climatic conditions and disease pressure levels.

## Pleasant Plains



## Lexington



# 13 Year Fungicide on Corn

2018 was another good year for corn response to fungicide applications in central Illinois. When conditions are good and commodity prices are low, you have to maximize yield on every acre.

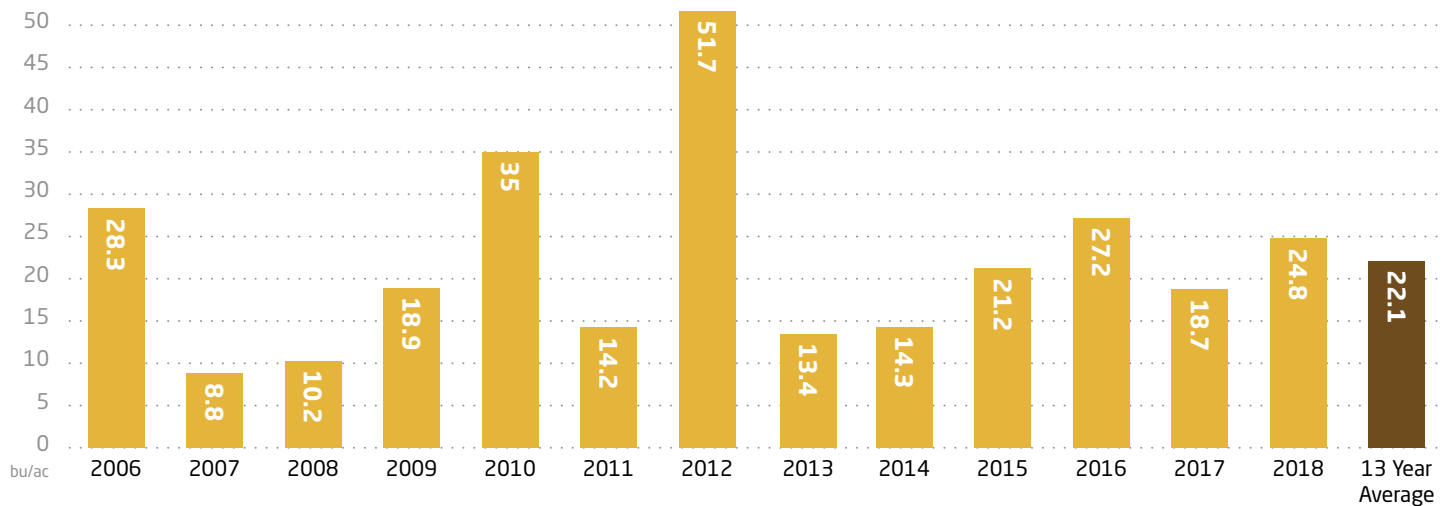
- Fungicide applications play a major role in high yielding environments
- 13 years of research farm data shows a consistent yield response and ROI
- The addition of BRANDT foliar boron products have been included in fungicide applications all 13 years

Fungicide applications have shown returns in years where disease pressure was thought to be low. In many cases, disease pressure cannot be predicted by climate conditions.



## Multi-Year Yield Response to Fungicide

Yield Increase





# Organic Production and Tillage

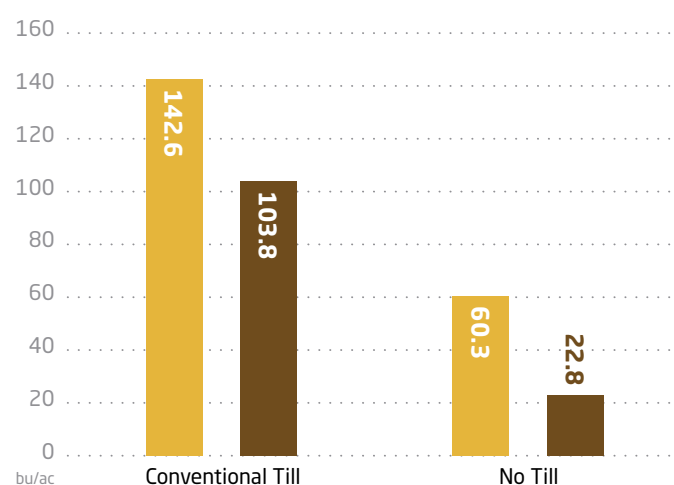
Demand for organic corn and soybeans continues to increase since the US is a net importer of specialty grains to produce organic feeds for dairy and livestock for meat consumption. We have been using organic practices on a section of the farm to learn more about products and practices that would be beneficial to a customer looking to diversify.

- Organic grain markets command a premium due to supply and demand
- Additional paperwork, maintenance, management and infrastructure will be necessary for organic production
- 2018 average organic corn price: \$9.18/bu; soybean price: \$17.68/bu
- We trialed two tillage and rotation systems with conventional tillage being significantly higher yielding

The switch to an organic production system is an individual decision. We are using our research farm to gain additional knowledge and continue to be leaders in the industry by supporting our customers and the markets they serve.

## Pleasant Plains

- 1st Year Corn
- Continuous Corn





Corn



BRANDT Total Acre



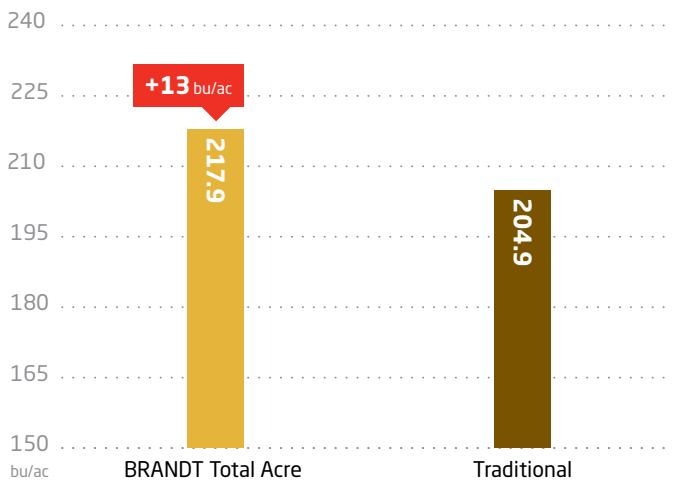
Lexington, IL

# BRANDT Total Acre vs Traditional Management

Management Variables	BRANDT Total Acre Management	Traditional Management
Pre and At Planting Nutrition	200-69-150-20S	200-69-150-20S
Starter Fertilizer	5-12-0-4S with BRANDT EnzUp Zn	No Starter
Planting Population	36,000; 39,000; 42,000; 46,000	36,000; 39,000; 42,000; 46,000
Herbicide Treatment	Halex GT plus BRANDT Smart Trio	Halex GT
Fungicide Treatment	Fungicide plus BRANDT Smart B-Mo	No Fungicide

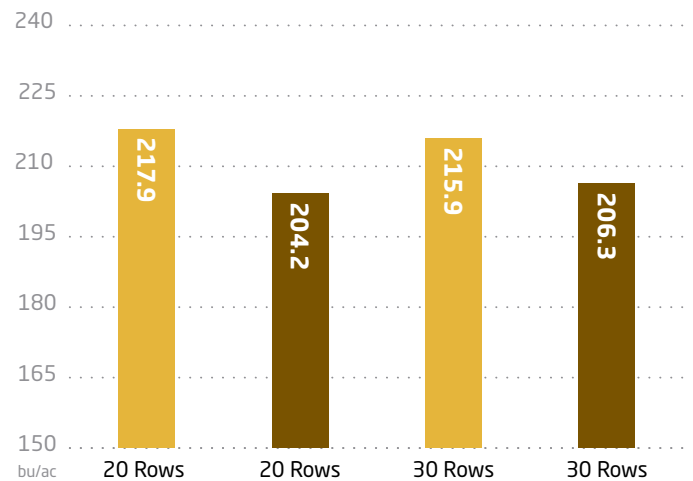
## Combined Averages

BRANDT Total Acre  
Traditional



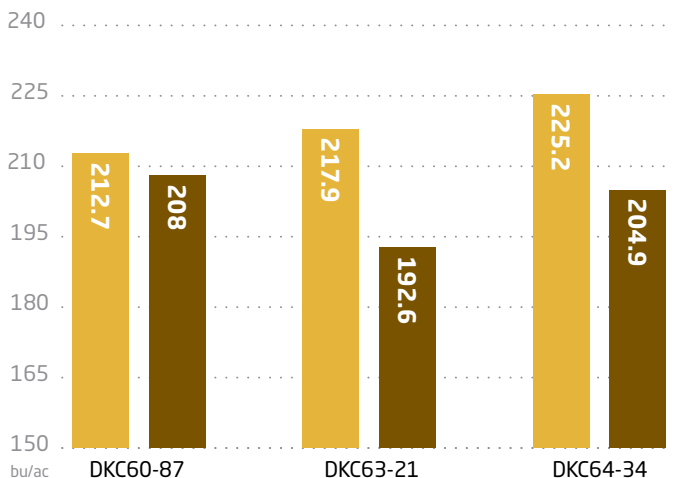
## Row Width Study

BRANDT Total Acre  
Traditional



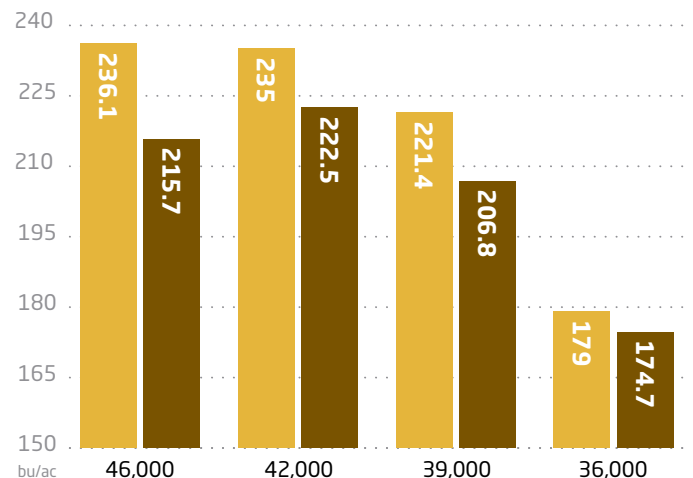
## Hybrid Response to Management

BRANDT Total Acre  
Traditional



## Corn Planting Population

BRANDT Total Acre  
Traditional





# 12 Year Corn Yield and Revenue of all Corn Plots

We had some excellent corn yields this year at the Pleasant Plains research farm. To highlight some of the BRANDT Total Acre products and practices, we thought it to be beneficial to list what worked.

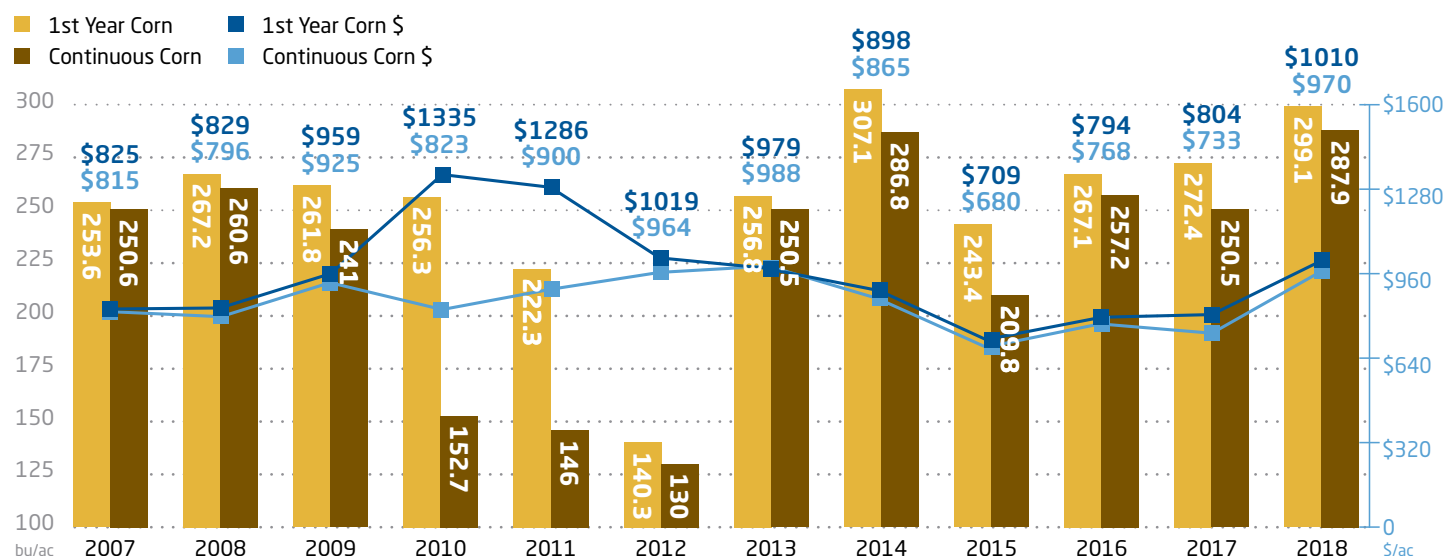
What worked:

- Fall applied  $\text{NH}_3$
- P&K maintenance
- Optimized population
- Conventional tillage
- Sulfur at planting
- Herbicides with foliar micronutrients
- Fungicide/insecticide with foliar micronutrients



The BRANDT Total Acre program is designed to optimize products and practices to make our customers' acres more profitable. Each item can be executed individually to achieve benefits, but when a whole systems approach is implemented, the potential increase is much greater.

## Multi-Year Yield Response to Rotation





# Evolution of Management Practices

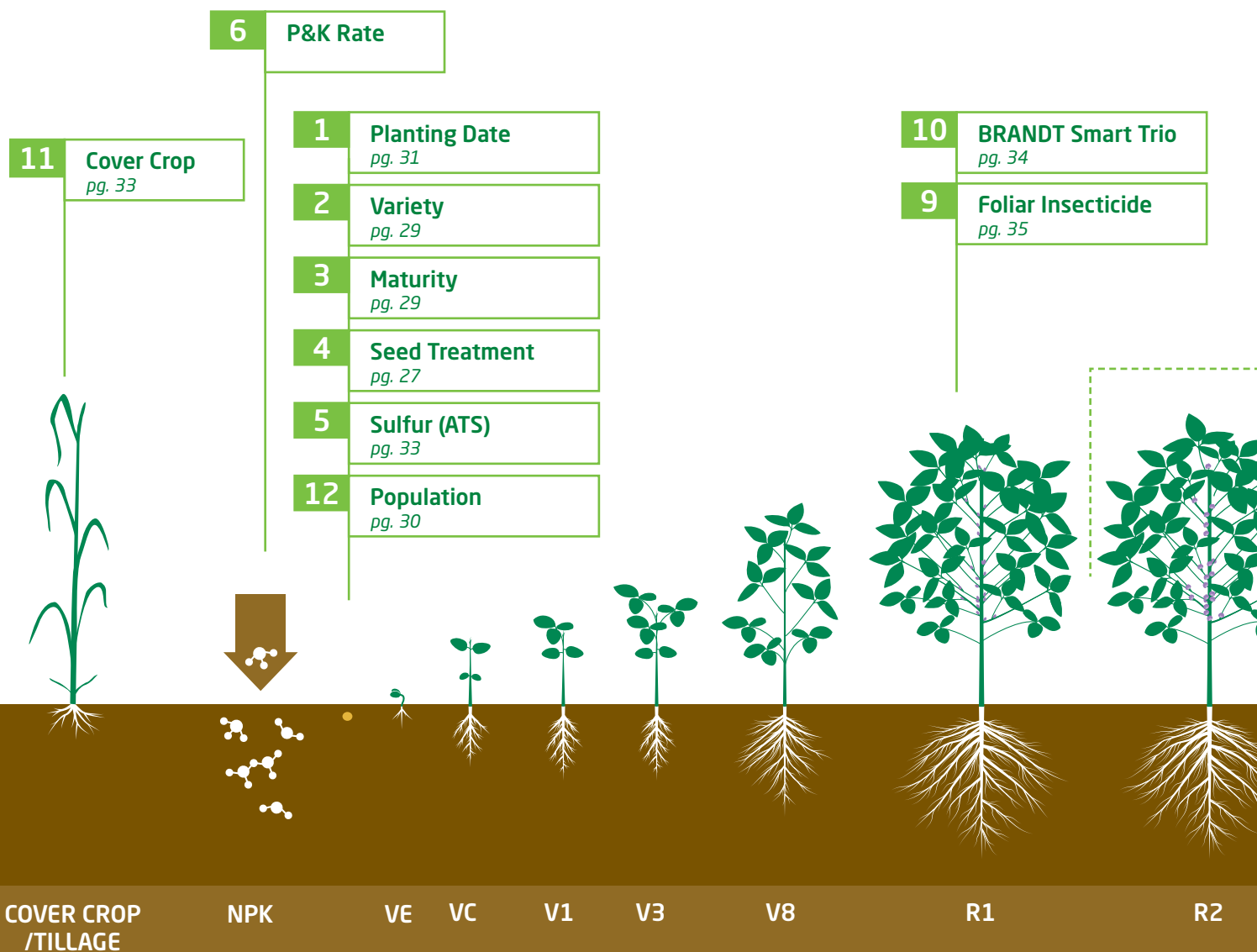
	2009	2010	2011	2012	2013
Environment	A repeat of 2008 - cool/damp spring that evolved into a wet summer and fall. Delayed planting in no till! Minimized nutrient mineralization and tightened soils. Insects at silking caused Diplodia. Too wet for fall tillage.	Collapsed soils from the wet winter immobilized nitrogen into the residue. Soil mineralization was shut down. The summer nights were hot and humid. Drying trend for harvest. Tillage used to reduce residue/soil density layers.	Light rains during April and May combined with a warming trend into summer. Timely rains with a hot summer produced high heat unit numbers and sped up crop progress. Drying trend for fall harvest.	Record warm temperatures and dry spring creating perfect soil conditions. Light frost April 9. The warm and dry spring led into a very dry and hot summer. An early dry harvest!	A moderately cool and moist winter led to a cool and wet spring. Light rains in April and late May with cloudy conditions. A cloudy summer was warm with ample moisture slowing crop maturity. Warm and dry harvest conditions through the fall.
Identified Practices	<ul style="list-style-type: none"> <li>Residue begins to create plant health issues</li> <li>Maturity vs fungicide and insecticide response</li> <li>Yield response to micronutrients vs nitrogen rate</li> <li>Ear worm and Japanese beetles attacking silks and husk cause Diplodia</li> <li>Potash applications responsible for stand ability at harvest</li> </ul>	<ul style="list-style-type: none"> <li>Sulfur, zinc, manganese, boron deficiencies</li> <li>Nitrogen immobilized by residue</li> <li>Higher P&amp;K rates needed to maximize higher populations</li> <li>Hybrid rooting response to damp/tight soils</li> <li>Soybeans respond to total management system</li> </ul>	<ul style="list-style-type: none"> <li>Planting date affected corn yields in corn on corn</li> <li>Split timing of nitrogen and banding near planting</li> <li>Foliar insects attack soybeans at flowering</li> <li>Narrow rows compliment shorter hybrids and lower N rates</li> <li>Applying 210 units of nitrogen/acre maximized yields</li> </ul>	<ul style="list-style-type: none"> <li>Early planting maximized yields except for scattered frosted fields</li> <li>Corn tasseling followed potash applications</li> <li>Fungicides applied at VT slowed plant metabolism and drought stress</li> <li>Sulfur applications with zinc maximized yields</li> <li>Foliar insecticides improved yields and reduced green stem syndrome</li> </ul>	<ul style="list-style-type: none"> <li>Fall applied nitrogen moved deeper into the 2nd foot of soils</li> <li>Crops suffered from transient nutrient deficiencies until June</li> <li>At plant applications of nitrogen, sulfur, and zinc were valuable</li> <li>Early growth stage applications of nutrients and stimulants added yield</li> <li>Late applied side dress nitrogen had no effect on yield</li> </ul>
Advancing Practices	<ul style="list-style-type: none"> <li>BRANDT Smart Trio</li> <li>RR2Y trait</li> <li>Strobilurin at tassel</li> <li>Residue management</li> <li>Phenotype vs nutrient interactions</li> <li>Narrower rows to maximize rooting</li> </ul>	<ul style="list-style-type: none"> <li>Nitrogen immobilization</li> <li>Soybean fungicides</li> <li>Split nitrogen apps</li> <li>Narrow rows</li> <li>Soybean seed treatments</li> <li>Plant soybeans early</li> <li>Late nitrogen applications worked</li> </ul>	<ul style="list-style-type: none"> <li>Zinc at planting</li> <li>Soybean maturity</li> <li>Potash applications</li> <li>Omission plots</li> <li>Short hybrids with narrow rows</li> </ul>	<ul style="list-style-type: none"> <li>Apply sulfur</li> <li>Fungicides reduce stress</li> <li>Potash reduces stress</li> <li>Early flowering</li> <li>Lower pH of foliar insecticides</li> <li>Narrow row shading improves yields</li> <li>Strobilurins stopped frost damage</li> <li>Cover crops absorb unused nutrition</li> </ul>	<ul style="list-style-type: none"> <li>Hormones assist plants</li> <li>Apply sulfur</li> <li>Split apply nitrogen</li> <li>Higher populations</li> <li>Apply side dress nitrogen early</li> <li>Long maturity soybeans</li> <li>Seed treatments</li> <li>Foliar applications mitigate transient nutrient deficiencies</li> </ul>

2014	2015	2016	2017	2018
A cold winter led to an early spring with warm temperatures and dry soils. A rainy May and June turned into a moderate temperature summer with ample moisture. The fall began dry and quickly moved into a cold and rainy late harvest.	A moderately cool/moist winter led to a cool/dry spring. Light rains fell in April and May making good planting conditions with slow corn emergence due to the cold. June was unusually wet with 20 plus inches for the month. July and August were dry and cooler than normal.	A record rainfall in late December flushed a lot of residue and mobile nutrients into the watersheds. Even with this loss of nutrients, the soil conditions at planting time were excellent. A 45 day dry spell starting in June led to one of the wettest July's on record with above average temps.	A mild and dry winter led to an early spring warm up. Excellent soil conditions for early April planting was interrupted on April 27 with heavy rains over 7 days. A dry summer with periods of high night time heat stressed crops through August.	A mild and near record dry fall and winter preceded gentle rains in February and March that recharged soils for planting. Excellent soil planting conditions and near perfect emergence set the stage for top yields.
<ul style="list-style-type: none"> <li>• Banding beats broadcast nitrogen applications at plant</li> <li>• Late side-dress nitrogen applications did not perform well</li> <li>• Higher plant densities and narrow rows maximized the nutrition</li> <li>• Sulfur is needed on corn and soybeans</li> <li>• Hormone applications need adequate nutrition to perform</li> </ul>	<ul style="list-style-type: none"> <li>• Even emergence fields were critical for top yields</li> <li>• Banded nitrogen at planting time improved nitrogen efficiency</li> <li>• Hybrids with early plant vigor maximized yields</li> <li>• Insect damage was minimal in 2015 due to the wet June</li> <li>• Cover crops improved soybean yields</li> </ul>	<ul style="list-style-type: none"> <li>• Plant early for the best yields</li> <li>• Mobile nutrient management had the best ROI</li> <li>• Strobilurin and boron applications greatly improved yields by reducing stress on corn and soybeans</li> <li>• At plant applications of nutrients were the most efficient due to the dry June weather</li> <li>• Cover crops improved soybean yields</li> </ul>	<ul style="list-style-type: none"> <li>• Plant early for the best yields</li> <li>• Sulfur management had the best ROI</li> <li>• Strobilurin and boron applications greatly improved yields by reducing stress on corn and soybeans</li> <li>• At plant applications of nutrients were the most efficient due to the dry May to August weather</li> <li>• Cover crops improved soybean yields</li> </ul>	<ul style="list-style-type: none"> <li>• Plant early for the best yields</li> <li>• Yellow corn from sulfur deficiency was the talk of the state! Must apply sulfur at planting</li> <li>• Strobilurin and boron improved yields by reducing disease and stress on corn and soybeans!</li> <li>• At plant applications of nutrients were the most efficient due to the dry June to August weather.</li> <li>• The coldest April on record pushed record yields in conventional tilled fields</li> </ul>
<ul style="list-style-type: none"> <li>• Banding at plant</li> <li>• Early foliar applications</li> <li>• VOTiVO® treated seed</li> <li>• High populations</li> <li>• Strip till provided better plant health</li> <li>• Sulfur at plant on soybeans</li> <li>• Crown rot controlled with potash</li> </ul>	<ul style="list-style-type: none"> <li>• Even corn emergence</li> <li>• Band nitrogen at plant</li> <li>• Cover crop allelopathy did not effect soybeans</li> <li>• Allelopathy in corn was stopped by strip tillage</li> <li>• Amplified boron deficiency</li> <li>• Zinc at plant continues to improve yields</li> <li>• Plant soybeans by the end of April to maximize yields</li> </ul>	<ul style="list-style-type: none"> <li>• Even corn emergence</li> <li>• Band nitrogen at plant</li> <li>• Cover crop allelopathy did not effect soybeans</li> <li>• Allelopathy in corn was stopped by strip tillage</li> <li>• Amplified boron deficiency</li> <li>• Zinc at plant continues to improve yields</li> <li>• Plant soybeans by the end of April to maximize yields</li> </ul>	<ul style="list-style-type: none"> <li>• Even corn emergence</li> <li>• Band nitrogen at plant</li> <li>• Terminate cover crops in mid March</li> <li>• Protect early planted crops with foliar insecticides</li> <li>• Increase B applications; amplified boron deficiency</li> <li>• Sulfur at plant continues to improve yields and mineralization</li> <li>• Plant soybeans by mid April to maximize yields</li> </ul>	<ul style="list-style-type: none"> <li>• Near perfect corn emergence</li> <li>• Band nitrogen at plant</li> <li>• Terminate cover crops early</li> <li>• Protect early planted soybean with foliar insecticides and seed treatments</li> <li>• Sulfur at plant continues to improve yields and starts early season mineralization</li> <li>• Multiple post foliar applications of nutrients turns poverty peas into prairie pearls</li> </ul>

# BRANDT Total Acre Pole Positions

BRANDT Total Acre is an omission style trial system that is focused on exposing the differences between variety phenotypes. The “omission design” is based on providing all the treatments and then removing one to see what value each practice has on yield of that phenotype. This creates an environment where the yield responses reflect the total high management system rather than a limited response due to some or all the parts of the system.

- 15-50-150 suspension in fall
- 120,000 population
- 7 gal/ac ATS at plant (2x0)
- BRANDT Elite seed treatment
- Conventional tillage
- Boundary burn down prior to plant - 4/12/2018
- Post applied herbicide tank mixes + BRANDT Smart Trio + BRANDT Smart B-Mo at 3rd trifoliate
- Foliar insecticide at R1 plus 1 qt/ac BRANDT Smart Trio + 1 pt/ac BRANDT Smart B-Mo
- Strobilurin at R3/insecticide + 1 pt/ac BRANDT Smart Trio + 1 pt/ac BRANDT Smart B-Mo

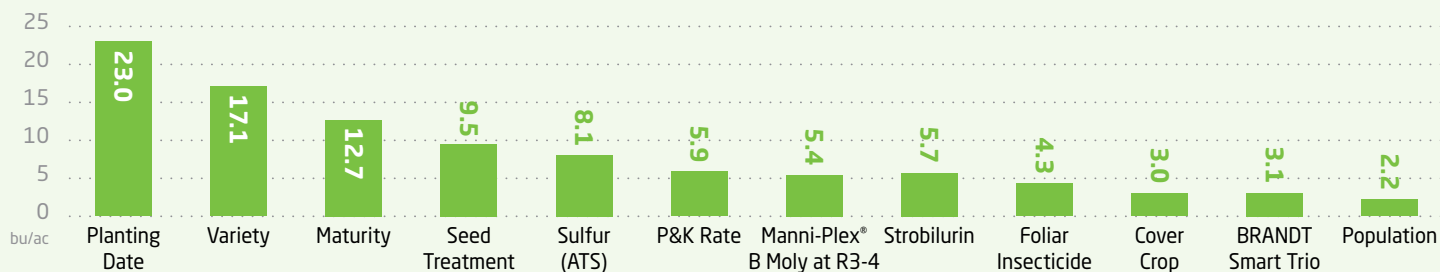




BRANDT Total Acre Pole Positions		2011	2012	2013	2014	2015	2016	2017	2018	8 yr Avg	8 yr ROI
1	Planting Date	n/a	6.8	8.3	13.6	11.0	45.3	51.8	23.9	23.0	\$\$\$
2	Variety	25.6	14.6	19.3	17.5	7.0	12.4	23.5	16.7	17.1	\$\$\$
3	Maturity	17.0	10.2	13.0	8.5	0	12.4	23.5	16.7	12.7	\$\$\$
4	Seed Treatment	6.1	11.9	7.4	5.5	8.5	12.9	7.5	16.3	9.5	5.3
5	Sulfur (ATS)	n/a	n/a	3.8	4.8	4.8	8.8	12.2	14.1	8.1	6.2
6	P&K Rate	1.6	3.5	4.0	5.2	n/a	n/a	15.4	n/a	5.9	1.0
7	Strobilurin	n/a	4.0	3.1	6.5	3.2	9.1	4.2	10.0	5.7	2.9
8	BRANDT Smart B-Mo at R2-R4	n/a	n/a	1.0	7.4	n/a	2.0	10.3	6.3	5.4	9.3
9	Foliar Insecticide	3.5	5.7	4.9	3.4	n/a	2.9	5.1	n/a	4.3	5.2
10	BRANDT Smart Trio	3.2	3.9	3.4	3.3	n/a	n/a	2.0	2.8	3.1	5.9
11	Cover Crop	n/a	n/a	n/a	n/a	9.5	0	1.4	-2.0	3.0	1.6
12	Population	2.5	2.8	3.6	0	n/a	n/a	n/a	n/a	2.2	1.9

The ROI (Return On Investment) listed is calculated using the 2018 fall crop insurance price of \$8.60 per bushel, multiplied by the yield response per acre, minus the cost per acre of a practice. For every dollar invested per acre in a practice, the ROI factor is how many dollars you get in return. We use a symbol of \$\$\$ for practices that had no measurable cost per acre, but offer the best ROI.

### 8 Year Average Yield Advantage

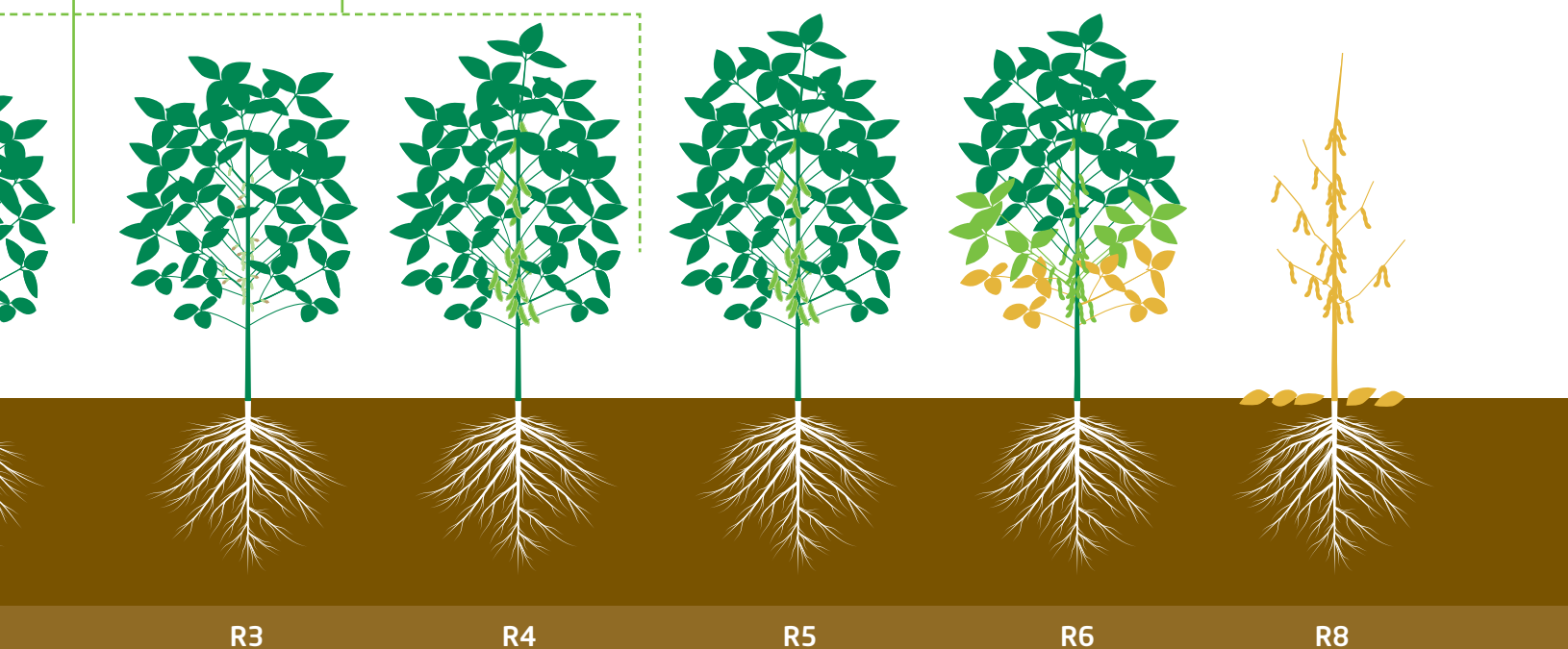


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**Strobilurin**  
pg. 35

8

**BRANDT Smart B-Mo at R2-R4**  
pg. 35





## 2018 Soybean Grower Insights to Increasing Yields

Soybeans throughout central Illinois were really good in 2018. We witnessed more growers hit 100+ bu/ac than ever before and overall averages for our trade area were among the best in the country, again. We will do our job on the research farms to continue to push the genetics as far as we possibly can.

- Sulfur at planting on soybeans creates bigger root nodules = more yield
- Foliar applications of BRANDT Smart B-Mo makes nitrogen “behave” in the plant
- Plant early with a seed treatment to maximize yield and profit
- Lower populations provided better yields and improved standability
- The number one management to consider is fungicide, BRANDT Smart B-Mo and insecticide at R4





# Soybean Seed Treatments

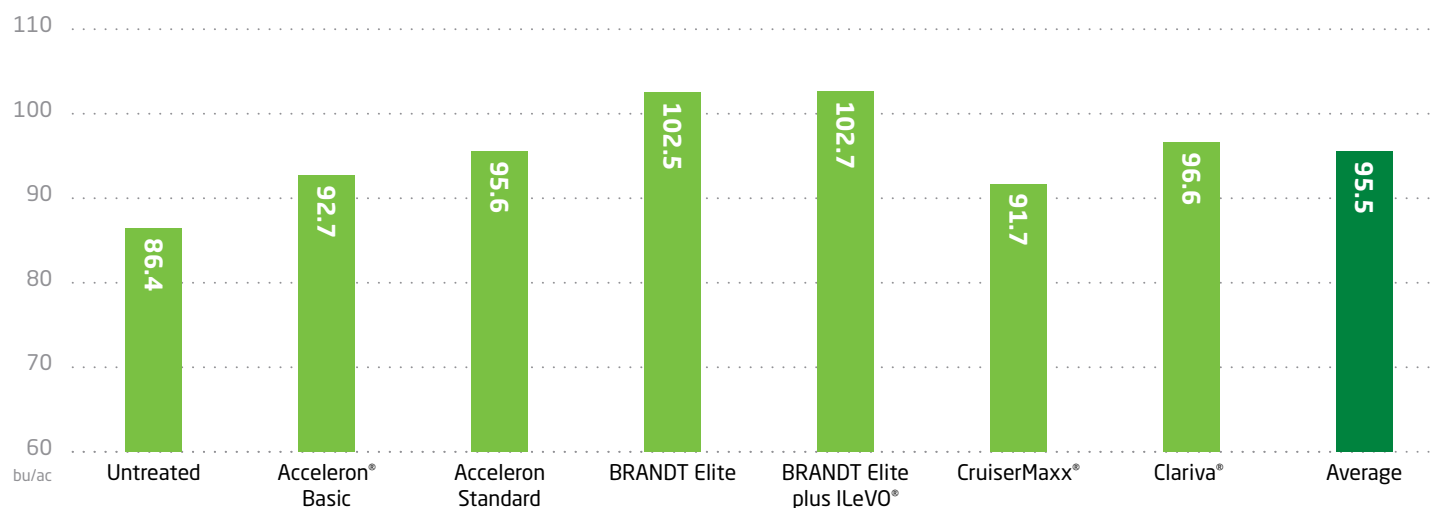
Soybean seed treatments play an important role in achieving high yields at our research farms. Treated soybeans emerged quicker, more evenly and experienced less stress from insect/disease pressure at early growth stages.

- The earlier the planting date, the more important treatments are
- The potential risk for yield loss during unpredictable planting and early post-planting conditions is greater with untreated seed
- Visual observations in 2018 showed excessive Bean Leaf Beetles (BLB) feeding on untreated plants



Soybean seed treatments add significant advantage especially on early planted soybeans. The BRANDT Elite treatment provides several modes of action: biological, fungicide, insecticide and nematicide.

## Treated vs Untreated





Soybeans



Variety Selection



Pleasant Plains, IL

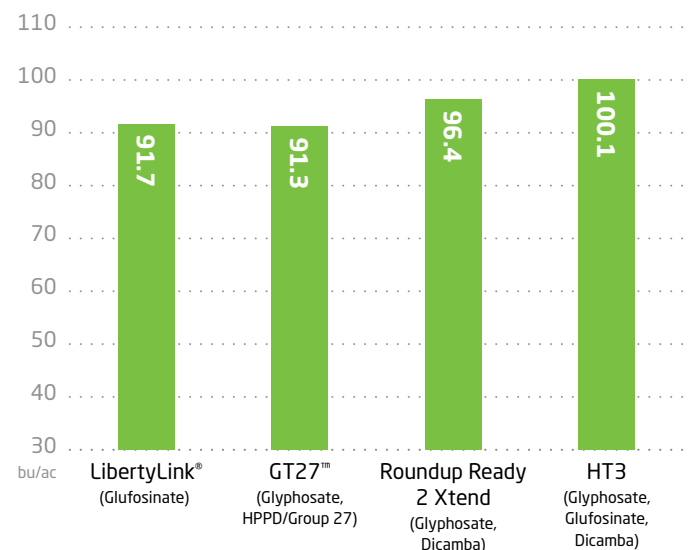
# Soybean Trait Trials

Controlling herbicide resistant weeds in soybean fields is an evolving practice with a strong emphasis on the available traits. On our research farm, the Roundup Ready 2 Xtend® trait package on the newer varieties has shown a yield increase over older varieties. Addressing resistant weeds should be on a field-by-field basis and with a best practices approach.

- Layering residuals will result in the best weed control
- Consider a trait package with multiple modes-of-action
- The new HT3 package showed promising results on the research farm and we look forward to that coming to market
- Identifying the weed resistances in your fields will assist in control strategies

**Develop a proactive herbicide program on your farm to combat current and future weed resistance issues. We can't rely solely on post herbicide applications.**

## Soybeans on Soybeans Rotation







# Soybean Variety vs Row Width Trials

The variety response to row width trial is designed to give insights on how specific varieties respond to row width. As we've seen in previous years, 20 inch rows performed better than 30 inch rows. In most cases there is greater variance with later maturity soybeans.

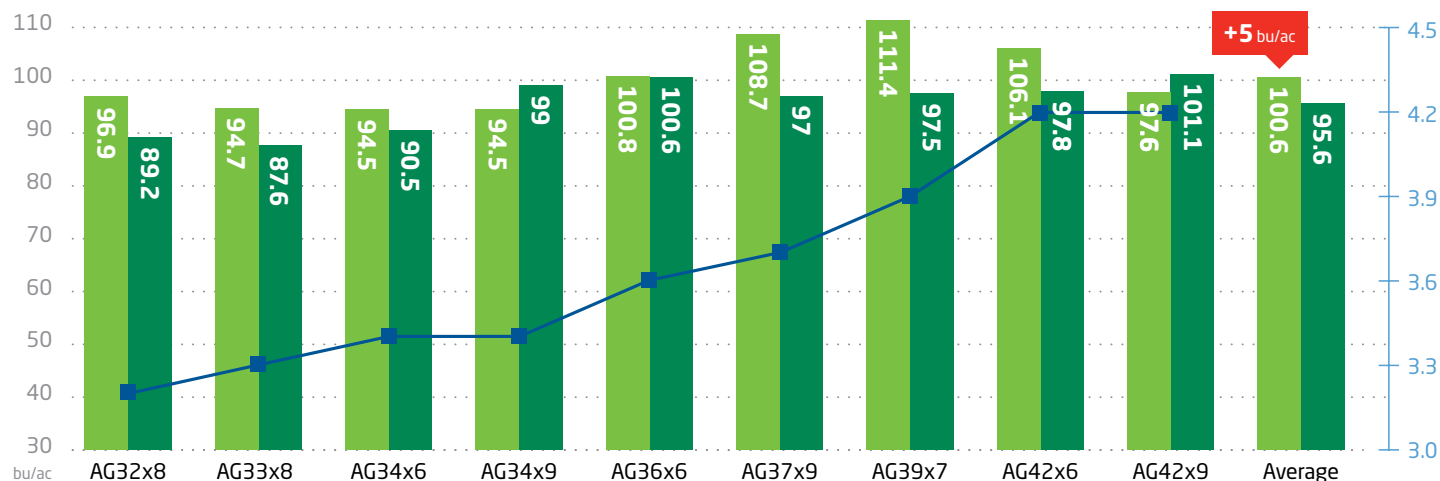
- Population: 120,000
- Planting Date: 4/24/2018
- 3.4 to 3.9 RM varieties typically perform better in central Illinois
- Previous crop: Corn
- Longer maturity varieties maximize sunshine, improving yield opportunity
- ROI is increased with 20 inch rows in lighter textured soils



In our trials, 20 inch rows consistently perform better than 30 inch rows. Key considerations would be matching varieties with management and planting date to achieve best results.

## Soybean Variety vs Row Width Trials

■ Row Width - 20 inch ■ Relative Maturity  
■ Row Width - 30 inch





Soybeans



Planting



Lexington, IL

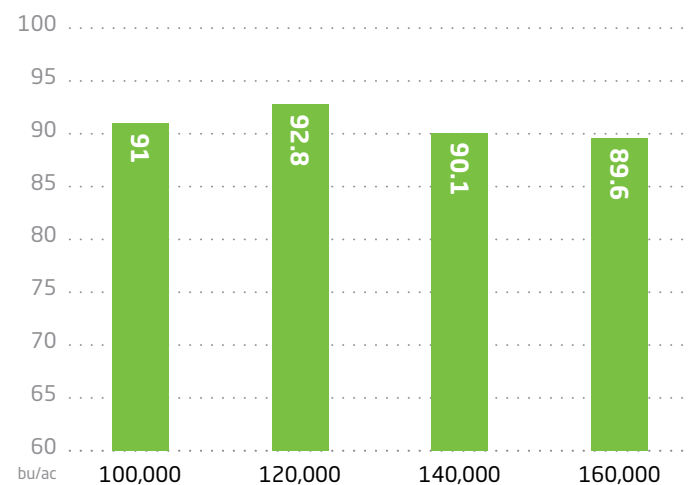
# Population Study

The population trial at our Lexington location was designed to identify the ideal planting population for early planted soybeans. Factors to consider when changing the population are planting date, management, fertility, soil and row width.

- A population that is too high will have issues with nutrient availability and late season standability
- A population that is too low will not achieve maximum yield
- Consider a higher population as the planting window closes
- It is essential that seed treatments are used with lower populations and early planting dates

Use field data, variety selection and planting date to determine the correct population for your fields. Keep in mind that populations will vary from field to field.

Population Study - Planted April 30





# Planting Date

The 2018 soybean planting date trial confirmed that early planting will yield higher than later planting. This year we added an additional variable to the trial by having a treated and untreated seed at each planting date. This trial proves the importance of soybean seed treatments.

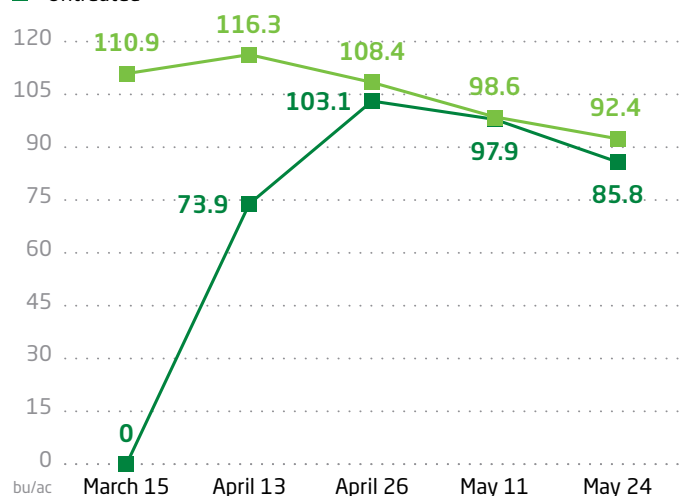
- For the 4th consecutive year, earlier planted soybeans were the yield winners
- The comparison of treated vs untreated soybeans demonstrates the importance of treatment technologies protecting yield at early planting date
- Seed variety selection and treatment rank among the highest ROI in soybean production
- Early planting typically means a longer reproductive period

Data from both Pleasant Plains and Lexington, IL confirm the trend we have seen for consecutive years. Early planted soybeans have a greater chance to achieve higher yields.



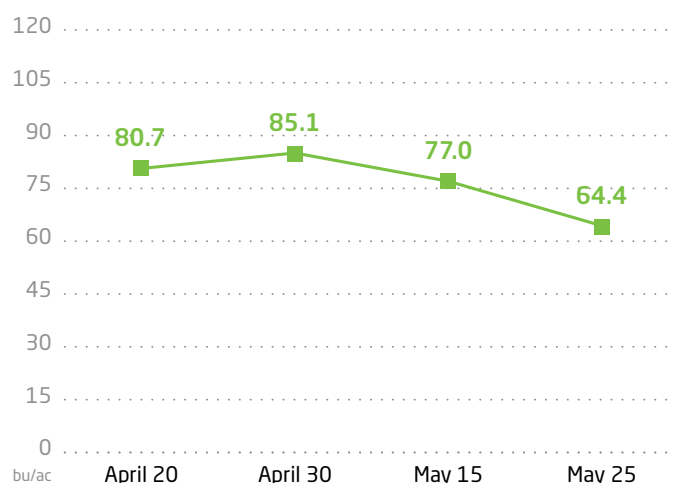
## Pleasant Plains

- Elite Treated
- Untreated



## Lexington

- Elite Treated







Soybeans



Planting



Lexington, IL

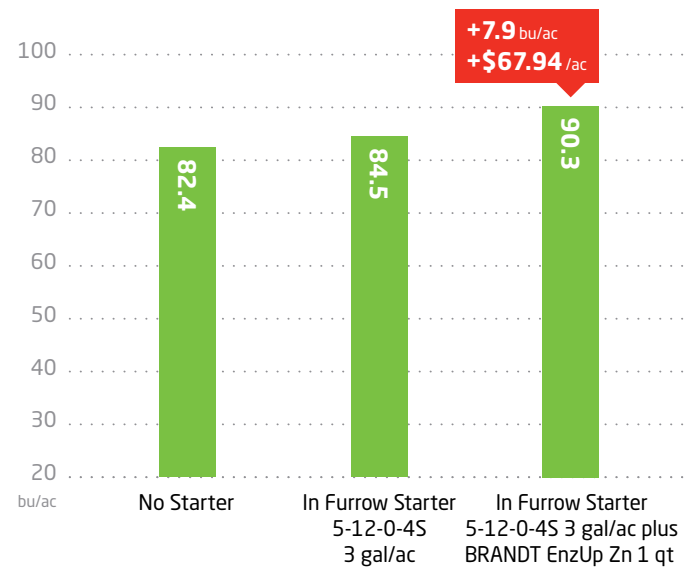
# Starter on Soybeans

Soybean management has increased to boost yields and profitability. One area we have seen sizable yield increases is in early season nutrition.

- BRANDT EnzUp is a patented enzyme technology that increases nutrient availability and uptake
- Early nutrition sets the foundation for plant health and late season yield

There are several viable fertilizer solutions that benefit plant yield in soybean production. Early nutrition is an important part of a high yield soybean program.

## Starter on Soybeans







# Soybean Response to Sulfur

This soybean trial looks at two variables: sulfur (ATS) applied at planting and tillage. Sulfur is important in facilitating chlorophyll development. This is why soybeans lacking sulfur will appear a lighter shade of green than those with sufficient sulfur. Soybeans also utilize sulfur during the process of nitrogen fixation.

- Ammonium thiosulfate (ATS) 12-0-0-26S significantly increased yields across all tillage practices
- ATS was applied at planting in a 2x0 placement at a rate equal to 20 lbs of sulfur per acre
- ATS is our preferred source of sulfur due to its combination of elemental and sulfate forms
- The ROI is very favorable for sulfur applications

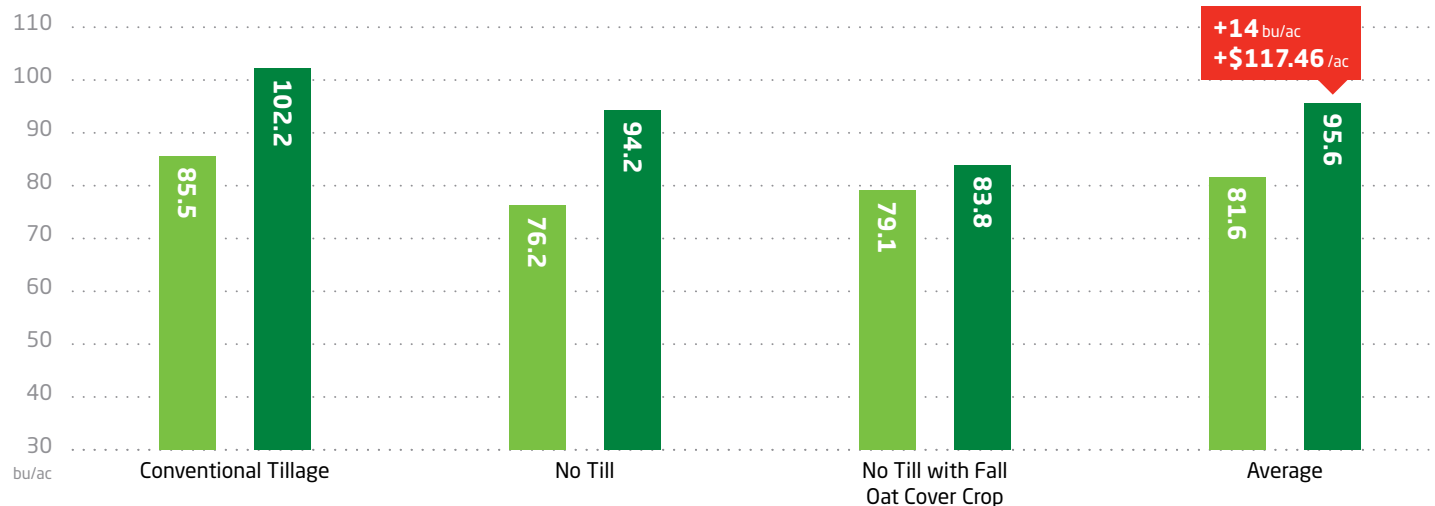
The soil and atmosphere cannot provide enough sulfur for today's soybean yields. Additional sulfur is essential in every fertility program.



## Soybean Yield Response to Sulfur and Tillage System

■ No Sulfur

■ 20 lbs Sulfur (ATS)





Soybeans



Foliar Applications

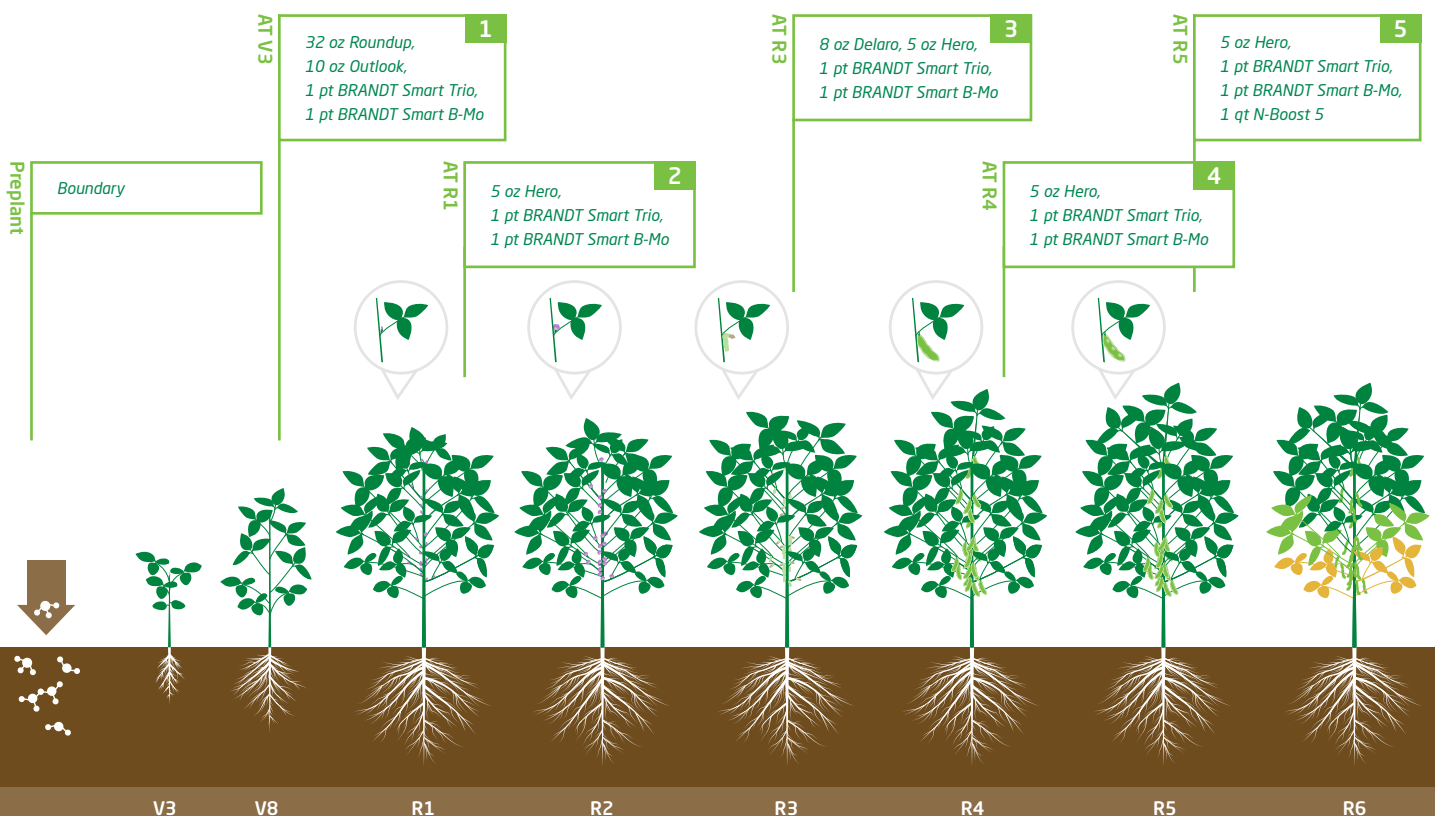
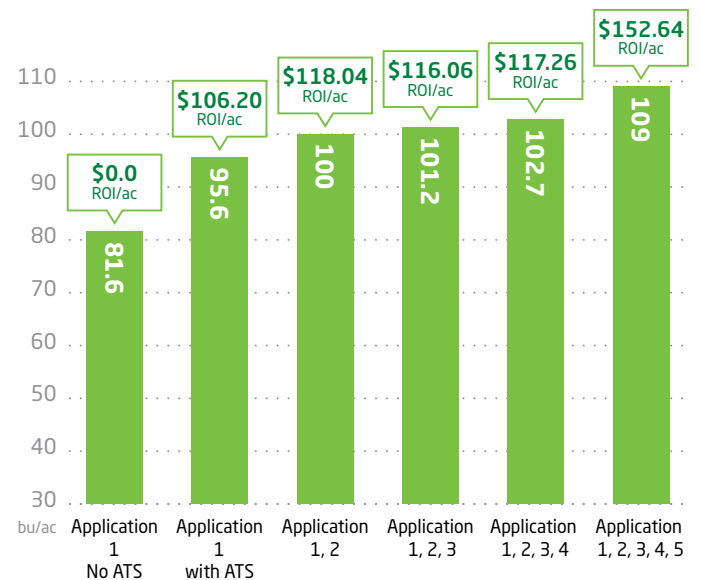


Pleasant Plains, IL

# Soybean Post Application Trips

- **Application 1:** 32 oz/ac Roundup®, 10 oz/ac Outlook®, 1 pt/ac BRANDT Smart Trio, 1 pt/ac BRANDT Smart B-Mo
- **Application 2:** 5 oz/ac Hero, 1 pt/ac BRANDT Smart Trio, 1 pt/ac BRANDT Smart B-Mo
- **Application 3:** 8 oz/ac Delaro, 5 oz/ac Hero, 1 pt/ac BRANDT Smart Trio, 1 pt/ac BRANDT Smart B-Mo
- **Application 4:** 5 oz/ac Hero, 1 pt/ac BRANDT Smart Trio, 1 pt/ac BRANDT Smart B-Mo
- **Application 5:** 5 oz/ac Hero, 1 pt/ac BRANDT Smart Trio, 1 pt/ac BRANDT Smart B-Mo, 1 qt/ac N-Boost 5

Yield Response to Multiple Foliar Post Applications





# 11 Year Response to Fungicide, Insecticide and BRANDT Smart B-Mo

Soybean yields have accelerated in central Illinois over the last five years. Driven by economics, increased management is being applied to soybean production on increased acreage. Fungicide/insecticide/boron applications have played a key role in the increased yields.

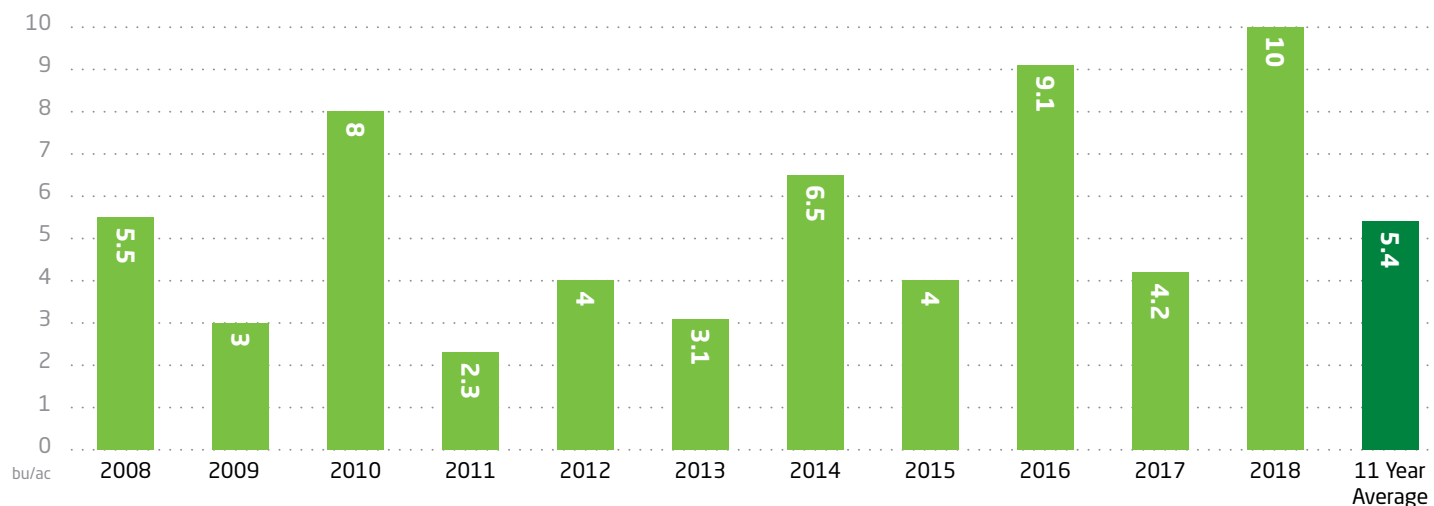
- 2018 showed the highest yield response to fungicide and BRANDT Smart B-Mo in our 11 year data set. This was the experience throughout most of central Illinois
- Fungicide application timing is ideal for the addition of BRANDT Smart B-Mo. Boron and molybdenum play key physiological roles in soybeans

Soybeans were once referred to as "Poverty Peas." Now, our BRANDT Technical Agronomist refers to them as "Prairie Pearls" for their ability to reach 100+ bu/ac and produce generous returns on the farm.



## Multi-Year Yield Advantage

Yield Advantage with Fungicide, Insecticide and BRANDT Foliar Boron Products



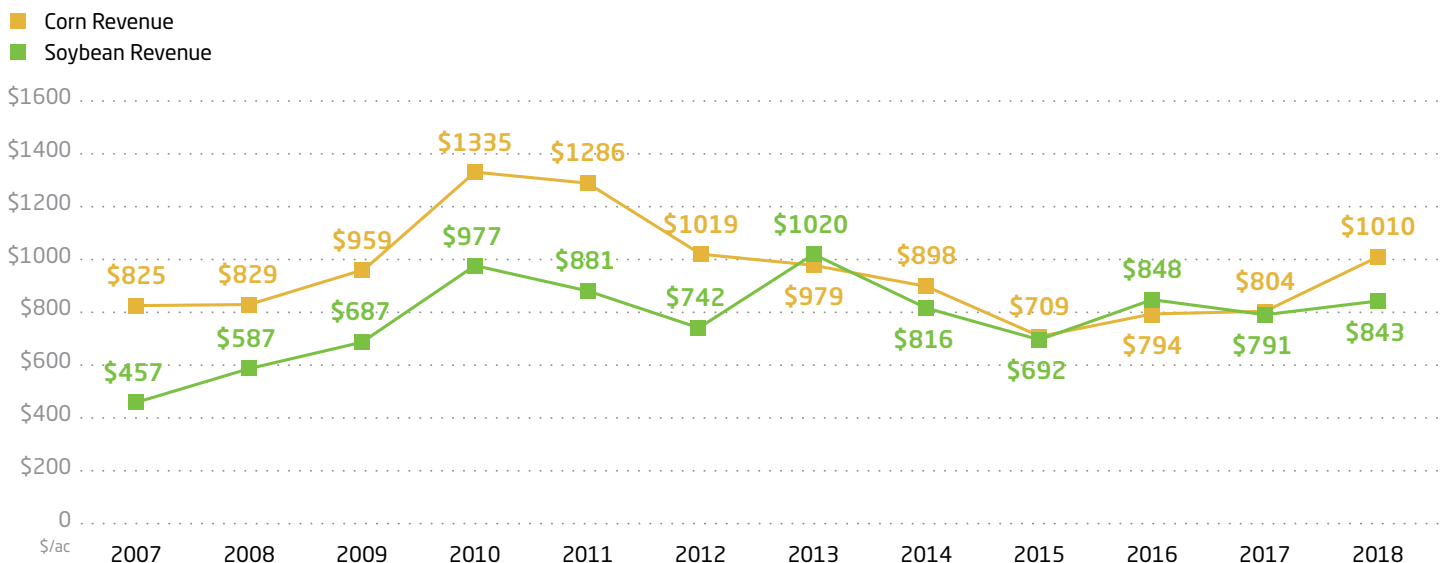
## 2007-2018 Yield and Revenue

The number one contributing factor for increased revenue in 2018 was great yields. The prices used to calculate revenue were \$3.68/bu for corn (+\$.19/bu vs 2017) and \$8.60/bu for soybeans (-\$1.15/bu vs 2017). Good weather, product selection and placement, and proper management of each acre gives growers the best chance for increased profitability at harvest.



The mission of our research farms is to make our customers' operations more sustainable. For more than a decade we have conducted thousands of trials on our 300+ acres of research farms to bring you local recommendations for your farm.

### 12 Year Crop Revenue





# Summary

*On behalf of BRANDT we want to thank you, our customers, for your business. We hope you have enjoyed and benefited from the 2018 BRANDT Research Farm book. We enjoy keeping them coming at you, hopefully improving each year!*

*This is the 14th year for the Pleasant Plains farm and the 7th year for Lexington. We continue to build on a solid database of multiyear data that you can apply to your operation.*

*During the summer we held our annual Agronomy Days at each farm. These well attended events feature BRANDT agronomists and guest experts discussing important agronomic topics during a farm tour. Keynoter at Pleasant Plains was AJ Woodyard, BASF, offering data on high yield soybean production. At Lexington, Eric Snodgrass, Professor of Atmospheric Science at the U of I enthralled the crowd with weather science and predictions. Be sure to join us next summer.*

*Over the years we have uncovered some valuable local trends that assist our customers with their agronomy decisions. Go back and look at the "What Worked" section on page 21 for some down to earth practical advice. Check out the 13 years of positive foliar results on corn. Through dry, wet, hot and cool growing seasons, we have proven the value. This past growing season a record number of growers saw tremendous results with their own fungicide applications.*

*We also keep developing some new opportunities for you. Consider the positive ROI for the use of sulfur on soybeans on page 33. Sulfur is quickly becoming a standard in corn and this data shows it can have the same impact in soybeans.*

*BRANDT has a great team to organize and implement the farms and the publication of this book. Ed Corrigan is the manager of the Pleasant Plains Research Farm and the primary author of the results. Dan Froelich is the manager of the Lexington farm and provides agronomy leadership to that area. Rod Riech organizes and edits the book and keeps it on track. They are joined by many BRANDT employees to produce this fine work. Thanks to all.*

*As we move into 2019 we again encourage you to contact our Agronomy Team, Ed Corrigan, Kyle McClelland, Dan Froelich, Steve Clement, and Jacob Winans to participate in BRANDT's precision agronomy and data collection programs. We can collect and help you analyze your data, locally and confidentially, with your Trusted Advisors.*

*Crop budgets will be tight in 2019. Good choices are critical and the economics of each choice has to work. That is why BRANDT invests in these research farms; to help you make better decisions for your farm.*

*Our BRANDT locations stand ready to serve you in 2019 and beyond. Here's to farming for success and profit in 2019.*

**Tim McArdle**  
General Manager

#### BRANDT RETAIL LOCATIONS

Ashland	217 476 3438
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Cropsey	309 377 3121
Curran	217 483 4512
Fairbury	815 692 2612
Fisher	217 897 6920
Franklin	217 675 2302
Galesville	217 489 2141
Greenvview	217 968 5589
Gridley	309 747 2233
Lexington	309 365 7201
Lincoln	217 735 2571
Mt. Auburn	217 676 3231
New Berlin	217 488 3125
Niantic	217 668 2228
Oakford	217 635 5765
Pleasant Plains	217 626 1123
Raymond	217 229 3442
Towanda	309 728 2293
Virginia	217 452 3545
Waverly	217 391 9705
Williamsville	217 566 2113

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