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**DAIRYLAND SEED**

**AGRONOMY 2021:  
RESEARCH AND  
DEMONSTRATION  
REPORTS**



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## INTRODUCTION

Dairyland Seed is pleased to present our 2021 Product and Agronomy Research (PAR) Report. Each year Dairyland Seed conducts agronomic research and demonstration plots across our marketing area. We have field trials as well as dedicated research and demonstration sites in Wabash, IN; Mt. Hope, WI; Decker and St. Johns, MI. As we are aware, each year in agriculture is a challenge. It is even more so in conducting time sensitive research on such items as planting and harvest dates. We had a great year in putting out trials and collecting the appropriate data. A few years ago, we implemented a dedicated effort to run multiple year studies. In 2021, we are pleased to report on several multi-year trials.

It is our sincere hope you glean information from this report that makes a difference in your operation. Use the information presented here and other trusted sources to make an informed decision to manage your operation to your highest level. Much of what we investigate is in direct response to questions and conversations with you, our valued seed friends. As you chat with your Dairyland Seed representatives this winter remember we are listening and just might design a test to answer your questions. As always, feel free to contact your local Dairyland Seed Dealer, District Sales Manager, Regional Sales Manager or Regional Agronomist to further discuss our findings.

We would like to thank all our cooperators, contractors and staff who assisted in making this program successful.

A special appreciation to:

- Huntington University Agriculture science students for their assistance in harvesting silage plots.
- AgroLiquid - St. Johns, MI
- Don Martin and Sons - Decker, MI
- Ryan Kussmaul, Dairyland Seed - Mt. Hope, WI
- Advanced Ag Resources, Bob and Chris Shultz - Wabash, IN

Sincerely,

*The Dairyland Seed Agronomy Team*



# WABASH PAR FARM – TIME OF PLANTING SOYBEANS

## Description:

Early planting soybeans has been a much-discussed agronomic topic for several years. In 2021 it was even more so across many of the areas Dairyland Seed services. A drier than normal early Spring had growers giving this management practice high consideration. Is there truly yield advantage to early planting and if so what may be the ideal time? The Dairyland Seed agronomy team looked at four varieties over the course of two years DSR-2640E™ and DSR-3146E™ in 2020 and DSR-3177E™ and DSR-3587E™ in 2021. Target dates for planting were April 1-5, and about every 15 days after that. Actual planting dates obviously varied each year. The planting population was 130,000 seeds per acre. Locations were Wabash, IN; Decker and St. Johns, MI.

## Results:

STAND COUNTS: JUNE 8 PLANTED 130,000/A, OR 7.46 SEEDS/FT ROW				
VARIETY	ROW	PLTS/FT	PLTS/A	% OF PLANTED
DSR-2640E™	Row 1	3.8	66,709	0.51
DSR-2640E™	Row 2	4.5	79,155	0.61
DSR-3146E™	Row 1	5.7	99,068	0.76
DSR-3146E™	Row 2	3.9	67,207	0.52
Averages		4.5	78,035	0.60

DATE	LOCATION	VARIETY	BU/A
4/5/2020	Wabash	DSR-2640E™	58.2
4/5/2020	Wabash	DSR-3146E™	54.7
4/5/2021	Wabash	DSR-3177E™	71.47
4/5/2021	Wabash	DSR-3587E™	72.93
4/14/2021	St. Johns	DSR-2640E™	65.07
4/14/2021	St. Johns	DSR-2040E™	64.27
Early April			64.44
4/20/2020	Wabash	DSR-2640E™	58.3
4/20/2020	Wabash	DSR-3146E™	54.2
4/23/2021	Wabash	DSR-3177E™	71.54
4/23/2021	Wabash	DSR-3587E™	69.62
4/24/2021	Decker	DSR-2112E™	76.65
4/24/2021	Decker	DSR-2590E™	70.85
4/24/2021	Decker	DSR-1707E™	72.79
4/30/2021	St. Johns	DSR-2640E™	69.54
4/30/2021	St. Johns	DSR-2040E™	63.75
Late April			67.47

# WABASH PAR FARM – TIME OF PLANTING SOYBEANS *(Continued)*

DATE	LOCATION	VARIETY	BU/A
5/2/2020	Wabash	DSR-2640E™	53.20
5/2/2020	Wabash	DSR-3146E™	46.50
5/15/2021	Wabash	DSR-3177E™	70.47
5/15/2021	Wabash	DSR-3587E™	72.20
5/6/2021	Decker	DSR-2112E™	71.54
5/6/2021	Decker	DSR-2590E™	77.20
5/6/2021	Decker	DSR-1707E™	67.46
5/15/2021	St. Johns	DSR-2640E™	71.98
5/15/2021	St. Johns	DSR-2040E™	64.53
Early May			<b>66.12</b>
5/23/2020	Wabash	DSR-2640E™	43.70
5/23/2020	Wabash	DSR-3146E™	38.90
5/25/2021	Wabash	DSR-3177E™	67.73
5/25/2021	Wabash	DSR-3587E™	66.47
5/21/2021	Decker	DSR-2112E™	70.42
5/21/2021	Decker	DSR-2590E™	72.45
5/21/2021	Decker	DSR-1707E™	73.25
6/1/2021	St. Johns	DSR-2640E™	68.27
6/1/2021	St. Johns	DSR-2040E™	61.59
Late May			<b>62.53</b>

## Conclusion:

Last year did not have a replicated study for this project. In 2021 however, we were able to replicate the trial and add a location. Simple data analysis of plot averages of the two years and multiple replicates indicates that it can be highly successful to plant soybeans "early". The highest yields were obtained with the April planting dates in Wabash. As we moved North that date may have moved back to late April, early May. In general, moving soybean planting dates up 7 to 14 for the geography seemed to be a viable option. Results may be skewed a little by not having data for early April planting at one site. The data may have been even more compelling for early planted soybeans. Of course, the success of any planting is highly dependent on the weather. This year some of the earliest soybeans faced not one, but two snow events. The resiliency of soybeans is shown as we can verify from our yield information. 2020 final population indicated we lost a significant number of plants and still maintained yield.



Soybean plot planted April 5, 2021 at Wabash, IN photo taken April 21, 2021, Right – taken May 3, 2021

# EVALUATING SOYBEAN PLANTING POPULATION

## Description:

Soybean planting populations have certainly been a talking point the last few seasons. Over the course of twenty or more years we have seen this drop considerably. Several factors may have influenced this change. The first is most likely weed control options. Another may well be earlier planting dates and better seed treatments. Last perhaps is just a change in soybean genetics. The agronomy staff utilized several PAR locations to evaluate soybean planting populations and its effect on yield. Row width was 30", except for the Decker location which was 22".

## Results:

### Decker, MI 2021

TARGET POPULATION	DSR-1707E™	DSR-2112E™	DSR-2590E™	POPULATION AVG.
80,000	66.94	71.90	69.42	70.02
130,000	67.39	68.02	74.26	69.89
160,000	70.00	69.05	74.6	71.22
VARIETY AVG.	68.11	69.66	72.76	

### St. Johns, MI 2021

TARGET POPULATION	DSR-1707E™	DSR-2590E™	POPULATION AVG.
80,000	63.3	68.9	66.1
120,000	68.6	72.2	70.4
160,000	67.0	72.5	69.7
VARIETY AVG.	66.3	71.2	

### Wabash, IN 2021

TARGET POPULATION	DSR-3177E™	DSR-3587E™	POPULATION AVG.
43,000	69.0	72.8	70.90
80,000	69.7	68.8	69.25
103,000	72.8	72.4	71.34
121,000	69.6	69.3	70.08
140,000	72.6	71.0	70.86
VARIETY AVG.	70.74	70.86	70.49

## Conclusion:

Without running statistics and looking at a couple differences in population across sites, a definitive answer is a bit difficult. If averages across low (80K), Medium (120-130K) and High (140K), there may be a slight overall advantage with populations at 140,000. However, we look at yields at some of the ultra-low populations i.e. 43,000 yields were within the range of other yields. Looking at the variance within some of the population treatments, there most likely is little difference across populations. One site and one variety may have tweaked the results a bit. That would be DSR-1707E™ at St. Johns at 80K. If we look at similar populations elsewhere, yields tend to be pretty consistent across all treatments. We most likely will duplicate this trial in 2022. All indications from across the industry show that we can lower soybean planting rates and be successful. That magical number may not be exactly determined yet. A key component to this strategy is to also have a good seed treatment to make sure every soybean planted has a greater possibility of surviving and contributing to yield.





DSR-3177E →  
← DSR-3587E

Planted May 15, 2021





# EARLY PLANT CORN

## Description:

The crop year of 2021 will be remembered in several ways. One being all the early plant questions. Dairyland Seed agronomists designed a four-date planting date demonstration at our Wabash Product and Agronomy Research (PAR) farm. It is generally understood that early planting benefits corn yields. The question is how early and could we observe a hybrid response. We used two of our key corn hybrids planted April 5, April 25, May 1 and May 25.

## Results:

**Planting Date and Hybrid**

DATE	DS-4878Q™	DS-5279Q™
04/05/21	264.14	286.10
04/25/21	266.32	281.57
05/14/21	252.51	255.10
05/24/21	229.82	251.66

**Planting Date**

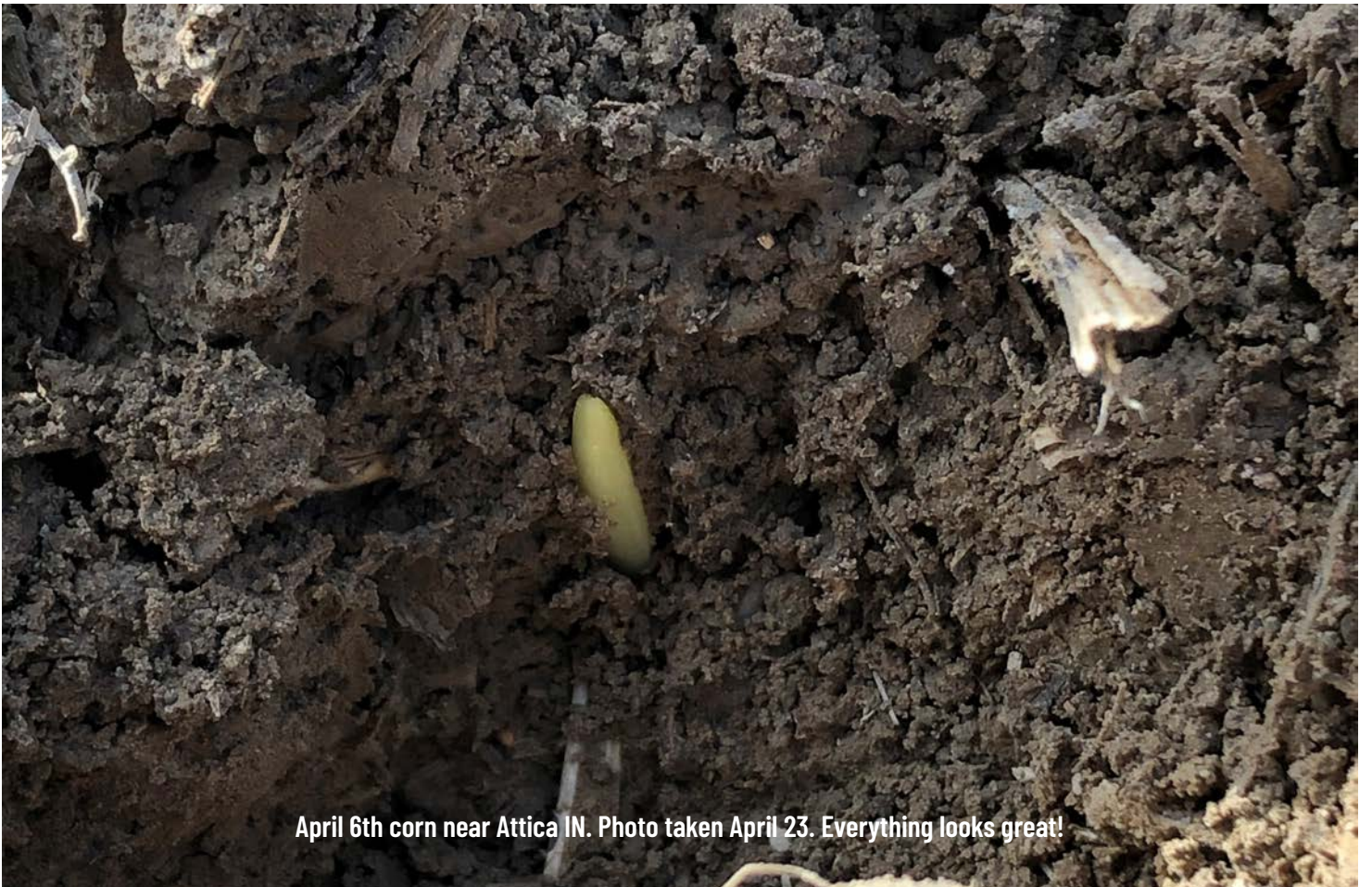
DATE	YIELD	MOISTURE	TW
04/05/21	275.121	17.50	56.20
04/25/21	273.945	17.20	56.45
05/14/21	253.803	17.85	55.85
05/24/21	240.738	19.05	55.45

## Conclusion:

Although this was not a replicated study, results coincide with similar research in the industry. We see increased test weight, lower moisture and increased yield. This time frame will change from region to region across the Dairyland Seed marketing footprint. Moving planting dates up for your specific area may prove to be an advantage in the future. Typically studies like this one may show increased or equal yields but seldom yield loss for planting earlier. One key to keep in mind is soil condition and weather within 24 to 48 hours. If it's early and soils are not in good condition leave the planter in the shed. We can cause more damage than good in those cases.







April 6th corn near Attica IN. Photo taken April 23. Everything looks great!



# WABASH CORN SEED TREATMENT

## Description:

Early season diseases and insects can impact corn stands; seed treatments provide excellent protection from these early season pests. There are many specialized seed treatments depending on the pests commonly present in a given geography. This study looks to compare the two seed treatments offered by Dairyland Seed as compared to a competitive product. The hybrid used in this study was a 113-day Corteva Agriscience™ experimental hybrid planted at 33,000 seeds per acre.

## Treatments:

1. LumiGEN® premium package
2. LumiGEN® corn rootworm package
3. Competitive comparison

## Results:

TREATMENTS	MOISTURE	TEST WEIGHT	YIELD
LumiGEN premium	23.5	55.2	282.7
LumiGEN premium	20.0	56.2	281.1
LumiGEN corn rootworm package	20.3	56.1	280.7
LumiGEN corn rootworm package	23.7	55.1	272.9
Competitive seed treatment	24.3	54.8	280.3
Competitive seed treatment	20.9	55.9	280.1

## Conclusion:

Early season observations of this trial showed that emergence was even and that stand counts were similar across all treatments. There were no notable differences in the stand throughout the growing season, and there was no corn rootworm feeding noted at the testing site. When adding products to seed treatments there is the concern of adverse impact to yield, we did see a 7.8 bushel separation between the corn rootworm treatments but there was no notable stand loss and this separation was likely due to the small scale of this trial and that the trial was not replicated. Seed treatments will continue to be studied at this site to monitor early season impacts and efficacy.



Components of LumiGEN® seed treatments are applied at a Corteva Agriscience production facility, or by an independent sales representative of Corteva Agriscience or its affiliates. Not all sales representatives offer treatment services, and costs and other charges may vary. See your sales representative for details. Seed applied technologies exclusive to Corteva Agriscience and its affiliates.



# WABASH SOYBEAN SEED TREATMENT

## Description:

Early season seedling diseases and pests can wreak havoc on soybean stands. Soybean seed treatments can help preserve stand that would otherwise be lost to these early season pests. In this study we examined the efficacy of our seed treatment offerings as compared to an untreated check. The varieties used in the study are DSR-2999E™, planted April 4 and DSR-3058E™, planted on April 16, both varieties planted at 130,000 seeds per acre.

## Treatments:

1. Untreated seed
2. LumiGEN® premium package
3. C1019FI premium external offer
3. LumiGEN® premium package + ILEVO®

## Results:

TREATMENTS	MOISTURE	TEST WEIGHT	YIELD
Untreated	11.0	56.9	63.2
LumiGEN premium package	11.1	56.8	64.8
C1019FI premium external offer	11.0	57.0	64.7
LumiGEN premium package + ILEVO	11.1	56.6	66.6

## Conclusion:

The premium treatment packages showed an increase of 1.5 bushels over the untreated check and the premium treatment + ILEVO showed a 3.4 bushel increase over the untreated check. There is no known SCN issues at this testing site. Seed treatments continue to show the ability to preserve yield potential of soybeans by protecting the plants from early season diseases and pests. Past soybean seed treatment trials at this site have shown an increase in yield of 1 to 2 bushels over untreated checks. As more additions are made to seed treatments we will continue to study these treatments at this location.



Untreated in center



ILEVO® is a registered trademark of BASF.

# WABASH CORN REPLANT SIMULATION

## Description:

Adverse spring weather in our footprint can cause stand loss though soil crusting and early season diseases to seeds and seedlings. Replant decisions are never easy to make and the objective of this study is to look at different replant scenarios and their impact on yield. Every year will be different but this multi-year study is meant to give us data to refer to should we need to make those difficult replant decisions. The two hybrids used for the 2021 simulation are DS-4510Q™ and DS-5144Q™; initial planting was made at 34,000 seeds per acre and each treatment was replicated 4 times. To simulate stand loss for treatments 2, 3, and 4 glyphosate susceptible seed was blended with glyphosate tolerant seed and then sprayed with glyphosate to thin the stand. First plant was made on May 14 for all treatments and all replant and interseeding was completed on May 23.

## Treatments:

1. Early Plant Full Stand - Planted at 34,000 on May 14th
2. Fill In - Full stand thinned to 18,000 and then interseeded with 18,000 seeds per acre
3. Live With the Stand - Early plant thinned to 18,000 plants per acre and left alone
4. Tear Up and Start Over - Early plant thinned to 18,000, worked up and replanted at 34,000

## Results:

**Table 1: Yield Component Results for 2021 Corn Simulation Study**

REPLANT SIMULATION	MOISTURE	TEST WT	BU/A	MOISTURE	TEST WT	BU/A
	DS-4510Q™				DS-5144Q™	
1. Plant early	17.0	57.6	268.1	18.1	57.5	276.2
2. Plant early, thin, interplant	17.2	56.8	245.4	18.4	56.2	252.9
3. Plant early, thin	17.0	57.2	204.4	18.3	56.0	230.8
4. Plant late	17.5	56.9	261.7	18.5	56.5	264.4
Hybrid Averages	17.2	57.1	244.9	18.6	55.5	256.1

**Table 2: Yield Components Averaged Across Hybrids**

REPLANT SIMULATION	MOISTURE	TEST WT	BU/A
1. Plant early	17.6	57.6	272.2
2. Plant early, thin, interplant	17.8	56.5	249.2
3. Plant early, thin	17.7	56.6	217.6
4. Plant late	18	56.7	263.1
Plot Averages	17.8	56.9	250.5

- The data presented in tables 1 and 2 shows that the first treatment is the best option, optimum planting date, and good stands equate to higher yields.
- Treatments 2,3, and 4 shows that doing something was better than nothing. This year showed us that the 4th treatment plant late or tear up and start over was the best replant option.
- Treatments 2 and 4 which contained replant or later planted corn showed a 0.5 pt increase in moisture over the earlier planted corn.



# WABASH CORN REPLANT SIMULATION (Continued)

**Table 3: 2020 Yield Component Averages (DS-4440AM™ and 5018AM™)**

REPLANT SIMULATION	MOISTURE	TEST WT	BU/A
1. Plant early	17.0	55.4	202.8
2. Plant early, thin, interplant	18.6	53.5	200.1
3. Plant early, thin	17.7	54.8	158.8
4. Plant late	19.5	52.9	207.8
Plot Averages	18.2	54.1	192.4

**Table 4: 2018 Yield Component Averages**

REPLANT SIMULATION	YIELD BU/A		
	DS-6008™	DS-9510RA™	AVG BOTH HYBRIDS
1. Plant early	259.6	245.6	252.6
2. Plant early, thin, interplant	225.3	215.4	220.4
3. Plant early, thin	228.5	214.0	221.3
4. Plant late	259.3	262.6	261.0

## Conclusion:

In this third year of replant simulation, we see that doing nothing or living with a thin stand did not capture the maximum yield potential. In 2021 and 2020 we see that either interplanting or complete replant were better options than leaving the thin stand. All three years show a complete replant later to be the most beneficial. It is important to remember that these studies are a snap shot in time at one location and every year is different as shown by the tables. Making the decision to replant and how to go about it is difficult, this study was meant to put values to different replant treatments to help us make these decisions in the spring.



# WABASH SOYBEAN REPLANT SIMULATION

## Description:

Every year we face replant decisions in some parts of our geography. Causes are largely weather dependent, and include crusted soils and seed and seedling diseases. Replant decisions are always difficult to make. This study will simulate replant situations and look at several potential strategies to address these issues. Similar studies were conducted in 2018 and 2020. For the 2021 simulation DSR-3587E™ and DSR-3177E™ were planted in 30-inch rows at 130,000 seeds per acre. First planting occurred on May 23, the replant treatments and late plant were made on June 10. To achieve stand reduction in the thinned treatments, glyphosate susceptible varieties were blended with the test varieties which are glyphosate resistant and then the treatment was sprayed with glyphosate to achieve random stand loss.

## Treatments:

1. Early planting of 130,000 seeds per acre
2. Early planting followed by herbicide thinning to 75,000 seeds per acre and left alone
3. Early planting followed by herbicide thinning to 30,000 seeds per acre and left alone
4. Treatment 2 followed by overplanting 100,000 seeds per acre
5. Treatment 3 followed by overplanting 100,000 seeds per acre
6. Late planting of 130,000 seeds per acre

## Results:

**Table 1: 2021 Variety by Treatment**

VARIETY	TREATMENT	MOISTURE	TEST WEIGHT	BU/A
DSR-3177E™	1	12.15	57.1	73.47
DSR-3177E™	2	12.0	57.1	68.9
DSR-3177E™	3	11.9	57.4	62.1
DSR-3177E™	4	12.25	57.15	67.1
DSR-3177E™	5	12.4	57.2	66.2
DSR-3177E™	6	12.4	57.7	64.9
DSR-3587E™	1	12.9	57.2	69.8
DSR-3587E™	2	13.0	57.1	66.2
DSR-3587E™	3	13.6	56.8	57.9
DSR-3587E™	4	12.8	57.0	68.2
DSR-3587E™	5	12.7	57.2	65.6
DSR-3587E™	6	12.4	57.2	66.1



# WABASH SOYBEAN REPLANT SIMULATION (Continued)

**Table 2: 2020 Variety by Treatment**

VARIETY	TREATMENT	MOISTURE	TEST WEIGHT	BU/A
DSR-2640E™	1	13.5	53.8	70.6
DSR-2640E™	2	12.9	54.2	62.0
DSR-2640E™	3	12.8	53.9	71.2
DSR-2640E™	4	12.5	54.9	55.0
DSR-3645E™	1	12.7	53.8	63.9
DSR-3645E™	2	13.0	54.6	57.3
DSR-3645E™	3	12.5	53.9	65.4
DSR-3645E™	4	14.6	53.2	50.8

**Table 3: Average of 2020 and 2021 Data**

TREATMENT	AVERAGE	ESTIMATE	LSD(0.10)=2.2
1	69.4	69.1	A
2	64.1	63.7	B
3	67.9	67.6	A
4	58.7	58.4	C
5	66.2	63.0	B
6	59.7	56.4	C

## Conclusion:

Table 1 shows the results from this year. As we look at the treatments, treatment 3 or thinning to a stand of 30,000 plants per acre with no additional seed added showed the greatest reduction in yield with DSR-3177E™ -11.37 bu/a and DSR-3587E™ -11.9 bu/a off treatment 1. When compared to treatment 2 which was thinned to 75,000 seeds per acre with no additional replant DSR-3177E™ -4.57 bu/a and DSR-3587E™ -3.6bu/a off of treatment 1. Looking at the average of treatments 4 and 5 where interseeding was preformed in an effort to thicken the stand compared to treatment 1 we see a difference of 6.82 bu less in DSR-3177E™ and 2.9 less in DSR-3587E™. Treatment 5 showed maturity difference and planting date, the earlier variety DSR-3177E™ showed a greater impact from late planting with 8.57 bu difference from treatment 1 and DSR-3587E™ showed a 3.7 bu difference from treatment 1.

When we look at data on this study from 2018 (Table 4), 2020 and 2021 we see that the original planting has the best performance and when making replant decisions we are trying to preserve or save as much of that potential as possible. When making replant decisions rarely is the stand uniformly thin. This particular location showed that a stand count of 75,000 plants per acre was worth leaving alone, this is data from one location and other factors such as weed control were not an issue, viable stand counts will vary from location to location, but the data here shows that soybeans will compensate for stand loss.

**Table 4**

TREATMENT	YIELD (BU/A)
Full population, early planting	66.0
2/3 population after thinning	66.2
2/3 population with interplanting	63.8
Tear up thin planting, replant	58.6

# STARTER AND POP-UP FERTILIZER – CORN 2021

## Description:

As spring weather seems to be more challenging many growers are considering the use of starter and or pop-up fertilizers. There has been a fair amount of discussion on this topic at recent agronomic seminars and workshops. Evaluation of the agronomic advantages of this management practice is the target of this study. We plan to investigate early response in establishing new seedlings and ultimately if that translates to yield. It is intended to compare application methods individually and in combination. There will be a total of 4 treatments: no starter fertilizer or pop-up, starter 2x2, in-furrow, and a combination of 2x2 and in-furrow.

## Wabash, IN:

DS-4510Q™ and DS-5144Q™ were planted at 33,600 seeds per acre in 30-inch rows on May 21, 2021. Treatments were replicated 4 times. Sidedress rates were adjusted for each treatment so the same amount of total nitrogen was received by all treatments. This same study was conducted in 2020, using DS-4310Q™ and DS-5144Q™.

## Treatments:

1. No starter fertilizer or pop-up
2. Starter fertilizer 2x2 placement- 15 gal/A (50/50 blend of 6-24-6 and 28%)
3. Pop-up in-furrow placement- 4 gal/A of 6-24-6
4. Starter fertilizer 2x2 and pop-up in-furrow placement- same rates as treatments 2 and 3

## Results:

**Treatment Results in Bu/A**

HYBRID	TREATMENT	YIELD AVERAGE	ADVANTAGE OF STARTER OR POP-UP	AVERAGE RESPONSE PER HYBRID
DS-4510Q™	2x2	269.6	7.4	6.4
	In-furrow	270.8	8.6	
	2x2 + In-furrow	271.8	9.6	
	None	262.2	0.0	
DS-5144Q™	2x2	282.7	5.0	1.6
	In-furrow	275.2	-2.5	
	2x2 + In-furrow	281.4	3.8	
	None	277.6	0.0	
Average			4.0	

**2020 and 2021 Starter and Pop-up Fertilizer data from Wabash**

	AVERAGE YIELD BU/A	YIELD DIFF	AVG % MOIST	% MOIST DIFF	AVG TWT	TWT DIFF
2x2	236.4	A	16.68	A	56.89	A
In-furrow	235.1	A	17.02	C	56.55	B
2x2 + In-furrow	236.6	A	16.79	AB	56.68	AB
None	231.5	B	16.95	BC	56.63	B

Mixed model with Treatment and Variety as fixed effects and Whole Plot random effects.

Model coefficients were tested using a chi-squared likelihood ratio test.



# STARTER AND POP-UP FERTILIZER – CORN 2021 *(Continued)*

## St. Johns, MI:

DS-3550Q™ and DS-4018AMXT™ were planted at 32,000 seeds per acre in 30-inch rows on May 16, 2021. Treatments were replicated 2 times. Additional nitrogen rates were adjusted for each treatment so the same amount of total nitrogen was received by all treatments.

### Treatments:

1. No starter fertilizer or pop-up
2. Starter fertilizer 2x2 placement- 10 gal/A of 10-34-0
3. Pop-up in-furrow placement- 3 gal/A of 10-34-0
4. Starter fertilizer 2x2 placement of 7 gal/A 10-34-0 and pop-up in-furrow of 3 gal/A 10-34-0

### Results:

**Treatment Results in Bu/A**

HYBRID	TREATMENT	YIELD AVERAGE	ADVANTAGE OF STARTER OR POP-UP	AVERAGE RESPONSE PER HYBRID
DS-3550Q™	2x2	179.2	3.6	3.8
	In-furrow	179.0	3.5	
	2x2 + In-furrow	183.6	8.1	
	None	175.5	0.0	
DS-4018AMXT™	2x2	187.7	6.1	5.3
	In-furrow	186.1	4.6	
	2x2 + In-furrow	192.1	10.6	
	None	181.6	0.0	
Average			4.6	

### Conclusion:

2021 results from the Wabash, IN location showed DS-4510Q™ having a higher response to starter and/or pop-up fertilizer than DS-5144Q™. Across treatments and hybrids, there was a 4 bu/A average advantage to using starter and/or pop-up fertilizer this year at the Wabash location. Since this study was conducted in Wabash in 2020, we were able to analyze the results for two years at a 90% confidence level. Looking at the data from a pure statistical analysis, all starter and/or pop-up fertilizer treatments showed a significant advantage over no starter and/or pop-up. The starter 2x2 treatment had a statistically significant advantage on test weight and moisture than the in-furrow treatment and the no starter or pop-up treatment.

Results from the 2021 St. Johns, MI location showed DS-4018AMXT™ having a higher average response to starter and/or pop-up fertilizer than DS-3550Q™. The combination treatment of 2x2 and in-furrow had the highest advantages for both hybrids compared with other treatments. In each case there was a yield advantage to using starter and/or in-furrow fertilizer, with an average across hybrid and treatment of 4.6 bu/A.

Overall, both locations followed the same trend of showing an average starter and/or pop-up advantage of 4-4.6 bu/A. These studies also show how much hybrid selection can drive responses to starter and pop-up fertilizer. It is common knowledge that hybrids may respond differently to various agronomic and environmental factors. Hybrid characteristics like early vigor and stress emergence, along with environmental conditions like soil temperature can greatly impact the degree of response. When making decisions about starter and/or pop-up fertilizer, consider the anticipated spring weather, hybrid, soil type and soil conditions.

# WABASH MOW AND ROLL SOYBEANS

## Description:

Intentional damage to the terminal growing point of soybeans is believed to increase branching and produce more nodes from which pods may develop. These practices are often brought up at meetings anecdotally and some claim to have seen increases in yield. The two varieties used in this trial are DSR-3177E™ and DSR-3587E™, both planted in 30-inch row spacing at a population of 140,000 seeds per acre on May 5, 2021.

## Treatments:

- Mow a section of each variety at V3 growth stage, just above the first node from the ground
- Roll a section of each variety at V3 growth stage

## Results:

**Table 1: Mow and Roll Results**

VARIETY	MOISTURE	TW	YIELD	TREATMENT
DSR-3177E™	12.6	59.6	67.4	Rolled
DSR-3177E™	12.4	59.6	67.8	Rolled
DSR-3587E™	13.2	59.0	81.2	Rolled
DSR-3587E™	13.5	59.2	77.1	Rolled
DSR-3177E™	12.8	59.5	61.8	Mowed
DSR-3177E	12.8	59.4	61.4	Mowed
DSR-3587E	13.4	58.8	91.1	Mowed
DSR-3587E	13.8	58.6	88.4	Mowed

**Table 2: Mow and Roll Averages**

VARIETY/TREATMENT	MOISTURE	TW	YIELD
DSR-3177E mowed	12.8	59.5	61.6
DSR-3587E mowed	13.6	58.7	89.8
DSR-3177E rolled	12.5	59.6	67.6
DSR-3587E rolled	13.3	59.1	79.1

**\*Highlighted rows are border**

## Conclusion:

This study was designed to show if rolling and mowing impacted yield. Both treatments were applied at the growth stage V3 and made during the heat of the day, so that the soybeans would be limber or almost “wilty” to avoid breaking the plants off at the soil line. When we look at the yields of these treatments compared to those of other studies in the same block planted the same day and at the same population there is no difference in yield, in this scenario and this year the mowing and rolling did not gain or lose yield except for the DSR-3587E™ that were mowed. The rows of DSR-3587E™ highlighted in the tables and labeled as border were interesting because those rows were able to branch and set pods extensively which led to the noted higher yield. This study was one application in a monitored environment but it was interesting to watch the soybeans respond to the mechanical damage of rolling and mowing by branching and compensating for the lost meristematic or growing point tissue. The loss or damage to the growing points on the soybeans triggered the soybeans to grow through the secondary nodes which causes branching and the possibility for more pods.







# GRAIN CORN FUNGICIDE STUDY - 2021

## Description:

Crop fungal disease is one of the largest yield robbers for growers in the Midwest. Fungal disease may be suppressed or controlled through hybrid selection and the use of fungicides. This trial was conducted to evaluate the impact of fungicide on various hybrids.

## Wabash, IN:

DS-5144Q™ and DS-4917AM™ were planted at 33,600 seeds per acre in 30-inch rows on May 21, 2021. Aproach Prima fungicide was ground applied for foliar treatments.

## Treatments:

1. No foliar fungicide
2. Foliar fungicide at tassel (VT)
3. Foliar fungicide at VT + 2 weeks later
4. Foliar fungicide at VT + 2 weeks later + 2 weeks later

## Results:

### Fungicide Treatment Results for Wabash, IN

HYBRID	TREATMENT	YIELD BU/A	% MOIST	TWT	YIELD ADVANT	% MOIST ADVANT	TWT ADVANT
DS-5144Q™	No Foliar Fungicide	275.4	18.3	56.5			
	VT	288.2	19.6	56.1	12.8	-1.3	-0.4
	VT + 2 Weeks	286.3	20.7	55.7	10.9	-2.4	-0.8
	VT + 2 Weeks + 2 Weeks	291.6	21.0	55.6	16.2	-2.7	-0.9
	<b>Average DS-5144Q™</b>	<b>285.4</b>	<b>19.9</b>	<b>56.0</b>	<b>13.3</b>	<b>-2.1</b>	<b>-0.7</b>
DS-4917AM™	No Foliar Fungicide	263.3	20.6	56.2			
	VT	276.6	20.6	56.1	13.3	0.0	-0.1
	VT + 2 Weeks	282.7	22.3	55.6	19.4	-1.7	-0.6
	VT + 2 Weeks + 2 Weeks	282.1	21.3	55.3	18.8	-0.7	-0.9
	<b>Average DS-4917AM™</b>	<b>276.2</b>	<b>21.2</b>	<b>55.8</b>	<b>17.2</b>	<b>-1.2</b>	<b>-0.5</b>
<b>Average</b>					<b>15.3</b>	<b>-1.7</b>	<b>-0.6</b>

### Mixed Model Analysis of Fungicide Treatments

	AVERAGE YIELD BU/A	YIELD DIFF	AVG % MOIST	% MOIST DIFF	AVG TWT	TWT DIFF
No Foliar Fungicide	269.3	B	19.45	A	56.35	A
VT	284.3	A	19.90	AB	56.10	AB
VT+2 Weeks	285.6	A	20.96	B	55.68	B
VT + 2 Weeks + 2 Weeks	288.4	A	21.07	B	55.47	B



# GRAIN CORN FUNGICIDE STUDY - 2021 (Continued)

## St. Johns, MI:

Hybrids ranging from 88-105 day RM were planted at 32,600 seeds per acre in 30-inch rows on May 13, 2021. Aproach Prima fungicide was ground applied using 360 Yield Center Undercover.

## Treatments:

1. No foliar fungicide
2. Aproach Prima at 6.8 fl oz/A applied at Brown Silk

## Results:

HYBRID	% MOIST	TWT	YIELD	% MOIST	TWT	YIELD	% MOIST	TWT	YIELD
	WITH FOLIAR FUNGICIDE			W/O FOLIAR FUNGICIDE			FUNGICIDE ADVANTAGE		
DS-2828AM™	18.7	56.4	220.4	18.2	57.1	200.55	0.5	-0.7	19.9
DS-3022AM™	19.0	56.6	228.0	18.6	57.5	209.07	0.4	-0.9	18.9
DS-3162Q™	18.5	55.9	233.5	18.0	55.8	215.7	0.5	0.1	17.8
DS-3366Q™	19.5	56.0	180.6	18.5	57.2	178.31	1.0	-1.2	2.2
DS-3550Q™	20.1	55.0	232.7	19.5	55.8	204.36	0.6	-0.8	28.4
DS-3519AM™	19.1	58.7	232.4	18.5	59.0	212.29	0.6	-0.3	20.1
DS-3727AM™	19.7	57.4	241.9	18.9	57.7	205.64	0.8	-0.3	36.3
DS-3959Q™	20.2	54.6	242.4	19.7	54.9	218.37	0.5	-0.3	24.0
DS-4000AMXT™	19.8	56.9	257.5	19.8	56.6	223.69	0.0	0.3	33.8
DS-4018AMXT™	20.4	57.3	244.9	20.3	57.4	207.1	0.1	-0.1	37.8
DS-4310AM™	21.6	55.7	245.3	20.9	56.2	210.7	0.7	-0.5	34.6
DS-4440AMXT™	21.2	55.9	236.8	20.6	56.1	210.0	0.6	-0.2	26.8
DS-4510Q™	21.3	54.4	244.6	20.0	55.5	229.6	1.3	-1.1	15.0
HiDF-4073Q™	21.1	55.7	260.5	20.6	56.1	226.9	0.5	-0.4	33.6
HiDF-3802Q™	21.7	54.4	232.7	20.1	54.8	217.7	1.6	-0.4	15.0
DS-4545Q™	21.5	54.7	230.9	20.6	55.5	207.7	0.9	-0.8	23.2
DB-4311AMXT™	19.8	59.9	164.5	19.0	58.8	176.6	0.8	1.1	-12.1
<b>AVG ALL RM'S</b>	<b>20.3</b>	<b>56.2</b>	<b>231.2</b>	<b>19.6</b>	<b>56.6</b>	<b>209.2</b>	<b>0.7</b>	<b>-0.4</b>	<b>22.1</b>



# GRAIN CORN FUNGICIDE STUDY - 2021 (Continued)

## Decker, MI:

Hybrids ranging from 87-104 day RM were planted at 40,000 seeds per acre in 22-inch rows on May 6, 2021. Aproach Prima fungicide was ground applied for the R1 treatment. This study was also conducted in 2020 (see results on next page).

## Treatments:

1. No foliar fungicide
2. Aproach Prima at 6.8 fl oz/A applied at R1 (silking)

## Results - 2021:

HYBRID	% MOIST	TWT	YIELD	% MOIST	TWT	YIELD	% MOIST	TWT	YIELD
	WITH FOLIAR FUNGICIDE			W/O FOLIAR FUNGICIDE			FUNGICIDE ADVANTAGE		
EXP-08707™	18.1	57	212.8	17.1	57	211.35	1.0	0	1.5
DS-3022AM™	17.5	56	235.2	16.8	55	225.84	0.7	1	9.3
DS-3162Q™	17.6	53	234.2	17.8	55	225.16	-0.2	-2	9.1
DS-3366AM™	17.7	58	220.8	17.3	58	212.66	0.4	0	8.2
DS-3550AM™	18.5	56	247.9	18.3	56	237.05	0.2	0	10.9
DS-3519AM™	19.6	57	230.5	18.9	58	225.72	0.7	-1	4.8
EXP-09608™	18.4	57	241.1	18.8	57	227.78	-0.4	0	13.3
DS-3727AM™	18.7	57	239.3	18.5	58	230.98	0.2	-1	8.3
DS-3715AM™	19.1	54	249.7	19.0	55	233.35	0.1	-1	16.4
DS-3750AM™	18.7	59	214.7	18.7	57	206.3	0.0	2	8.5
DS-3810Q™	19.2	56	240.0	18.7	56	232.1	0.5	0	7.9
DS-3959AM™	18.8	56	248.9	18.5	55	235.2	0.3	1	13.7
DS-4000AMXT™	18.9	57	251.3	19.0	55	237.8	-0.1	2	13.5
DS-4014Q™	19.0	55	261.4	19.3	56	246.2	-0.3	-1	15.1
EXP-10107™	18.7	57	246.8	19.0	57	231.8	-0.3	0	15.0
DS-4440AMXT™	19.7	55	242.7	20.4	55	236.9	-0.7	0	5.8
<b>AVG ALL RM'S</b>	<b>18.6</b>	<b>56.3</b>	<b>238.6</b>	<b>18.5</b>	<b>56.3</b>	<b>228.5</b>	<b>0.1</b>	<b>0.0</b>	<b>10.1</b>





# GRAIN CORN FUNGICIDE STUDY - 2021 (Continued)

## Results - 2020:

HYBRID	% MOIST	TWT	YIELD	% MOIST	TWT	YIELD	% MOIST	TWT	YIELD
	WITH FOLIAR FUNGICIDE			W/O FOLIAR FUNGICIDE			FUNGICIDE ADVANTAGE		
DS-2505AM™	18.0	56.6	137.6	18.1	56.5	152.5	0.1	0.0	-14.9
DS-2716Q™	19.5	54.5	132.7	19.1	54.3	150.6	-0.4	0.2	-17.9
DS-3030AM™	20.2	54.2	166.4	18.9	54.0	176.5	-1.3	0.2	-10.1
DS-3162Q™	18.9	53.7	168.3	18.9	54.0	188.7	0.0	-0.3	-20.4
DS-3193AM™	19.8	55.8	189.1	19.9	54.1	183.5	0.1	1.7	5.7
DS-3366Q™	19.0	56.3	194.8	19.6	56.5	194.9	0.6	-0.2	-0.1
DS-3345AM™	19.4	57.2	194.4	19.8	56.0	196.9	0.4	1.2	-2.5
DS-3550Q™	21.0	53.0	214.2	21.0	54.0	220.8	0.0	1.0	-6.7
DS-3518AMXT™	21.9	53.0	200.5	22.1	54.1	202.6	0.2	-1.1	-2.1
DS-3519AM™	20.2	56.8	214.6	20.3	57.0	204.6	0.1	-0.2	10.0
DS-3715AM™	20.8	56.9	203.5	23.2	52.5	205.1	2.4	4.4	-1.6
X 09710™	23.5	54.1	217.6	24.9	52.2	211.1	1.4	1.9	6.5
DS-3750AM™	21.0	57.1	213.0	22.0	56.0	208.4	1.0	1.1	4.5
DS-3810Q™	22.2	53.4	209.0	22.1	54.3	205.8	-0.1	-0.9	3.1
DS-4000AMXT™	23.3	53.3	240.4	23.9	51.8	226.5	0.6	1.5	13.8
DS-4014Q™	24.2	52.6	214.0	23.5	52.9	223.8	-0.7	-0.3	-9.8
DS-4018AMXT™	22.6	55.1	214.8	22.6	54.4	208.2	0.0	0.7	6.6
DS-4310Q™	24.7	52.8	228.7	24.8	52.4	221.0	0.1	0.4	7.7
DS-4440AMXT™	26.5	53.8	229.8	26.5	53.3	209.5	0.0	0.5	20.2
DS-4580Q™	23.3	54.9	222.8	25.1	54.2	208.7	1.8	0.7	14.2
HIDF-4545Q™	26.0	54.4	250.7	29.0	52.8	219.6	3.0	1.6	31.1
DS-4440AMXT™	25.7	53.7	224.2	28.5	51.2	202.5	2.8	2.5	21.7
DS-4318AMXT™	28.0	52.7	228.2	28.6	53.6	211.9	0.6	-0.9	16.3
DS-3802Q™	27.6	52.3	215.2	29.6	50.8	205.2	2.0	1.5	10.1
<b>AVG ALL RM'S</b>	<b>21.9</b>	<b>54.6</b>	<b>201.8</b>	<b>22.5</b>	<b>54.0</b>	<b>199.6</b>	<b>0.6</b>	<b>0.6</b>	<b>2.2</b>

## Conclusion:

Visual disease notes and ratings for the Wabash, IN location indicated tar spot was the prominent disease present with 25-30% leaf area coverage. All fungicide treatments at the Wabash site resulted in a statistically significant +10 bu/A advantage compared with the untreated. Across treatments and hybrids, there was a 15.3 bu/A average advantage to fungicide this year.

Similar to Wabash, the St. Johns, MI location had tar spot as the prominent disease with visual ratings of 25-35% leaf area coverage. Northern corn leaf blight and gray leaf spot were also noted but in low infestation. Across all hybrids, the average advantage to fungicide at the St. Johns location this year was 22.1 bu/A.

The Decker, MI location had tar spot noted at about 15-20% leaf area coverage and anthracnose leaf blight. Across hybrids this year, there was a 10.1 bu/A average advantage to using fungicide. This study was conducted in 2020 with the main disease present being anthracnose leaf blight and the average advantage was 2.2 bu/A. Last year's results also indicated a possible slight advantage in moisture and test weight. This year's results did not follow the same trend, which indicates factors other than treatment are influencing moisture and test weight.

Overall, hybrid response to fungicide application will vary based on weather conditions, hybrid tolerance, disease presence and disease pressure. In studies where we have multiple years of data, including low disease pressure years, we are still seeing a significant average advantage to using fungicide. In order to ensure the highest return on investment, be sure you are making the fungicide application at the best timing. Consider using a disease modeling tool that factors in weather conditions to predict risk of infection before scheduling an application. Spreading out maturity risks and using foliar fungicides at the proper timing will help preserve yield potential.

# FOLIAR DISEASE CONTROL IN SILAGE CORN FOR INCREASED TONNAGE

## Description:

Concern over corn foliar diseases has increased in recent growing seasons. Specifically, we wanted to focus on corn silage and the impact fungicides may have on the quantity and quality of silage produced. To accomplish this, three types of corn silage hybrids (HiDF-4999Q™, BMR-3508RA™ and DS-5279Q™) were treated with Approach Prima. They were planted at 33,600 and managed at standard agronomic levels. We utilized four replications, hand harvesting silage, machine harvesting grain as well as noted visual leaf disease ratings.

## Results:

**2021 Silage Corn Fungicide Trial**

PRODUCT	TONS/A	STARCH	NDFD	TONS/A	STARCH	NDFD
	NO FUNGICIDE			FUNGICIDE		
BMR-3508RA™	25.1	37.7	58.5	24.8	39.0	60.4
HiDF-4999Q™	25.2	38.4	55.8	28.4	40.1	57.7
DS-5279Q™	31.1	38.4	56.2	30.1	39.0	56.5
Average	27.1	38.2	56.8	27.8	39.4	58.2

PRODUCT	GLS %	NCLB %	TAR SPOT %	GLS %	NCLB %	TAR SPOT %
	NO FUNGICIDE			FUNGICIDE		
BMR-3508RA™	7.5	1.5	0.0	17.5	5.0	0.25
HiDF-4999Q™	5.0	0.0	0.5	1.0	0.0	0.25
DS-5279Q™	6.5	0.0	0.0	2.0	0.5	0.25

## Conclusion:

As we reviewed the data some interesting trends surfaced. First, all three diseases rated (gray leaf spot, northern corn leaf blight and tar spot) were at fairly low infestation levels. The one exception was on the BMR product. In most cases across the Dairyland Seed footprint tar spot infestations increased precipitously in the month following our ratings (Aug. 25). Even with relatively low disease levels we did record a reduction in observed disease infections. Fungicide seemed to increase all areas of major interest in silage production. Yield was improved by approximately 1,400 lbs an acre and increased starch by 1.2 and NDFD30 by 1.4. The increase in tons roughly covered the cost of fungicide with a few dollars extra. Keep in mind our check ratings for disease were low. The extra value from a fungicide application in this year's environment really comes from the increase in silage quality. Another factor to consider is increased "feed hygiene" limiting the amount of any disease lesions on the leaf tissue.







# STRATEGIES FOR EARLY SOYBEAN HARVEST

## Description:

There are several reasons growers have questions related to harvesting soybeans early. Cover crop establishment is one of the reasons and the initial purpose for conducting this project. Other reasons include tile projects, manure management, early soybean contracts or simply an early start on harvest. To investigate two methods of achieving early soybean harvest. The first is using ultra early soybean varieties and second using desiccation of soybean in the late R7 and early R8 stage of development using herbicides. We will then evaluate yield performance and economic returns for this system. In 2020 we used 15" rows and in 2021 30" rows were planted as early as soils were ready at 150,000 seeds per acre.

## Treatments for 2020:

1. DSR-0847E™
2. DSR-1673E™
3. DSR-2259E™
4. DSR-3058E™ and desiccant at R7
5. DSR-3365E™ and desiccant at R7
6. DSR-3058E™ and desiccant at R8
7. DSR-3365E™ and desiccant at R8
8. DSR-3587E™
9. DSR-3058E™

## Treatments for 2021:

1. DSR-1673E™
2. DSR-2040E™
3. DSR-2640E™
4. DSR-3177E™ and desiccant at R7
5. DSR-3587E™ and desiccant at R7
6. DSR-3177E™ and desiccant at R8
7. DSR-3587E™ and desiccant at R8
8. DSR-3587E™
9. DSR-3177E™

## Results 2020:

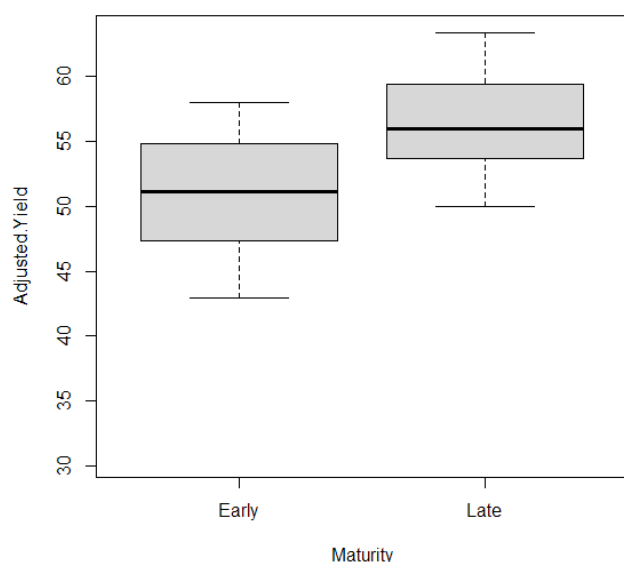
### Wabash, IN - Treatment, Harvest Date and Yield Averages

TREATMENT	AVG YIELD	SPRAY DATE	HARVEST DATE
DSR-0847E™	38.9	N/A	5-Sep
DSR-1673E™	54.2	N/A	15-Sep
DSR-2259E™	57.7	N/A	17-Sep
DSR-3058E™ at R7	53.5	13-Sep	22-Sep
DSR-3058E™ at R8	60.2	15-Sep	6-Oct
DSR-3587E™ at R7	57.9	17-Sep	6-Oct
DSR-3587E™ at R8	59.8	20-Sep	6-Oct
DSR-3058E™	49.3	N/A	22-Sep
DSR-3587E™	46.9	N/A	29-Sep
Average	53.2		

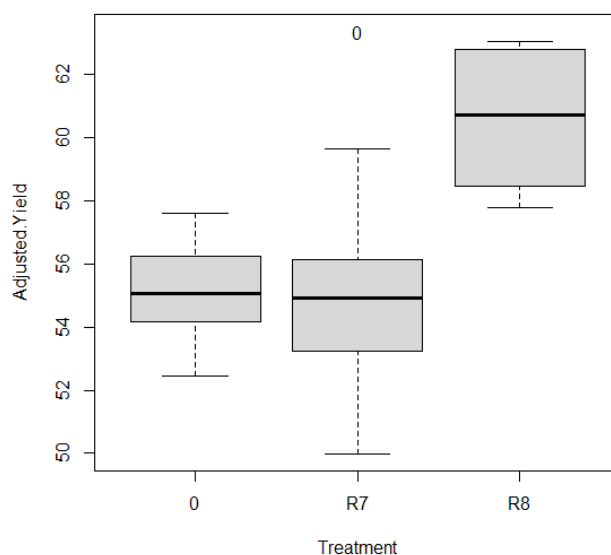
### Mt. Hope, WI - Early Soybean Strategies

VARIETY	HARVEST DATE	YIELD BU/A
DSR-2030E™	15-Sep	78.0
DSR-2112E™	15-Sep	76.6
DSR-2424E™	15-Sep	77.0
DSR-1673E™	15-Sep	80.7
DSR-1318E™	15-Sep	75.1
DSR-0847E™	15-Sep	63.8

# STRATEGIES FOR EARLY SOYBEAN HARVEST (Continued)



Early = very short maturity soybean  
Late = typical maturity soybeans sprayed with desiccant



Cropping system = Ultra early  
vs. typical maturity and desiccation

LSD(0.10)=2.1bu

## Results 2021:

TREATMENT	AVG YIELD	SPRAY DATE	THEORETICAL HARVEST DATE
DSR-1673E™	63.58		9/6/2021
DSR-2040E™	64.28		9/10/2021
DSR-2640E™	67.11		9/16/2021
DSR-3177E™ at R7	73.00	9/9/2021	9/16/2021
DSR-3587E™ at R7	69.31	9/14/2021	9/21/2021
DSR-3177E™ at R8	71.69	9/13/2021	9/20/2021
DSR-3587E™ at R8	70.69	9/18/2021	9/23/2021
DSR-3177E™	70.84		9/21/2021
DSR-3587E™	71.72		9/25/2021
Average	69.14		Actual Harvest 9/28/2021

## Multi-Year Combined Analysis:

TREATMENT	AVG YIELD	ESTIMATE YIELD (LSD(0.10)=2.3)	YIELD DIFF
Early maturity (1.6, 2.0, 2.6)	57.7	56.3	C
Standard maturity (3.1, 3.5) desiccated at R7	60.8	60.6	B
Standard desiccated at R8	64.8	63.5	A
Check standard maturity	60.5	60.5	B

## Conclusion:

This is the second year of this investigation. As we suggested in 2020, conclusions from this study really come down to personal preference from the producer standpoint. Two years data indicate penalties for certain early soybean harvest strategies and other strategies may have a yield advantage. It comes down to how much yield is one willing to forgo, how much time is needed for early harvest and how much one wants to spend on early desiccation?

Desiccation for early harvest had intriguing results. This data suggests a statistically sound yield increase for desiccating soybeans at the R8 growth stage. Gaining harvest time was difficult to determine as weather conditions played a big role in harvest timing. For 2021 we used "theoretical harvest dates" based on maturity and actual harvest date for all treatments.

Using an early to ultra-early soybean for the geographic area was the other treatment we evaluated. As expected, we lose a little yield by shortening our maturity. The best option seems to be using a maturity soybean which is about a half maturity group earlier than recommended for the area. These beans gained us 5 to 10 days in harvest time. There was a yield loss at about 3-5 bu. versus the fuller season check varieties and fuller season varieties desiccated early.

# WABASH CORN HARVEST DATE/PHANTOM YIELD LOSS

## Description:

University and other studies have shown that optimum harvest moisture is 25%, because of this information there has been a lot of interest in looking at harvest moisture and timing, and the impact on yield. Harvesting at a higher moisture has shown to reduce mechanical damage and loss. The grain yield lost between an earlier harvest and allowing the corn to field dry is often referred to as phantom yield loss. The hybrids used range from 103 day to 112 day in maturity (DS-4310Q™, DS-4510Q™, DS-4878Q™, DS-4917AM™, DS-5250AM™, DS-5279Q™). This trial was plated on May 21 at a population of 33,600 seeds per acre.

## Treatments:

A sample of each hybrid was harvested on the following dates:

1. October 2, 2021
2. October 10, 2021
3. October 14, 2021

## Results:

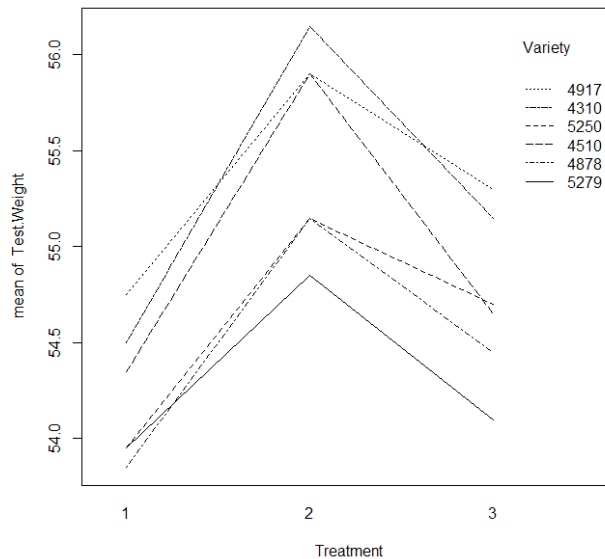
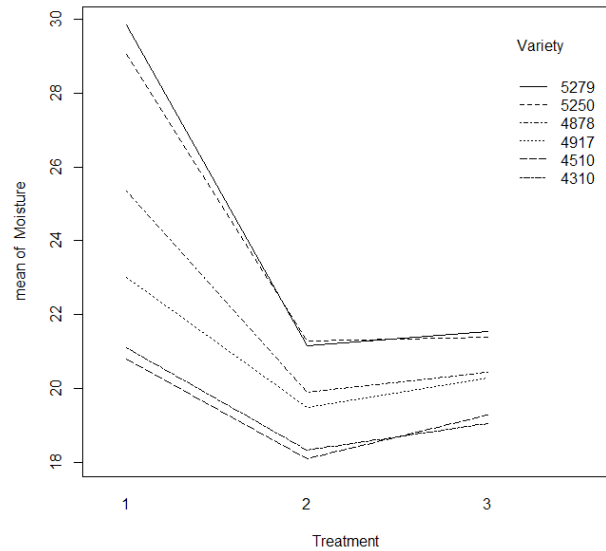
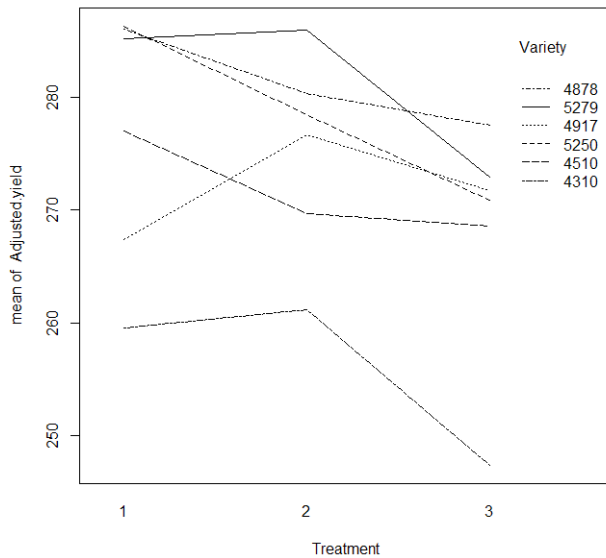
**Table 1: Averages of Yield Components**

ROW LABELS	AVG OF ADJUSTED YIELD	ESTIMATE OF YIELD (LSD(0.10)=3.9)	YIELD DIFF	AVG OF MST	ESTIMATE OF MOISTURE (LSD(0.10)=1.0)	MST DIFF	AVG TEST WEIGHT	ESTIMATE OF TEST WEIGHT (LSD(0.10)=0.16)	TEST WEIGHT DIFF
1	276.96	259.5	A	24.86	22.72	B	54.23	54.67	C
2	275.40	258.4	A	19.72	17.58	A	55.52	55.96	A
3	268.16	250.6	B	20.34	18.20	A	54.73	55.17	B





# WABASH CORN HARVEST DATE/PHANTOM YIELD LOSS *(Continued)*



## Conclusion:

- This year did show that the early harvest or treatments 1 and 2, did significantly help to retain yield as compared to treatment 3.
- The Harvest moistures of treatments 2 and 3 did have statistical differences from treatment 1 as shown in Table 1 and displayed in the Treatment x Mean of Moisture graph.
- Test weights of all 3 treatments were statistically different as shown in Table 1 and displayed in the Treatment x Mean of Moisture graph.

The range in maturities of the hybrids used in this study allows us to look at the impact of early harvest on a large scale. Early harvest (treatment 1) did show an 8.8 bu increase over the later harvest (treatment 3). The retention in dry matter from earlier harvest this year may have been caused by the rapid drydown during the period following the first harvest. A later 3rd harvest date was planned but the onset of stalk lodging issues experienced across the area forced an earlier than scheduled 3rd treatment. Test weight decreases between the 2nd and 3rd harvest as well, this is likely due to the late season infection tar spot in the corn.

# WABASH SULFUR ON SOYBEANS

## Description:

Atmospheric deposition of Sulfur has decreased and with this decrease, areas have seen positive crop response to the application of Sulfur to row crops. Sulfur is a key nutrient responsible for chlorophyll formation, oil and protein production and enzyme synthesis. These functions are all critical to plant growth and crop production. In this study we look at one method of S application to a soybean crop and its impact on yield. This trial was planted on May 22, 2021 in 30" rows at a population of 130,000 seeds per acre.

## Method:

- Non treated check
- 2x2 application of accesS™ from AgroLiquid at a rate of 4 gallons per acre (7.48lbs of S total)

## Results:

**Table 1: All Trials**

TREATMENT	MOISTURE	TW	YIELD
Sulfur	11.3	57.4	68.9
None	11.3	57.6	68.9
Sulfur	11.4	57.8	69.3
None	11.3	57.8	68.9
Sulfur	11.3	57.9	69.1
None	11.4	57.9	67.4
Sulfur	11.3	57.6	71.2
None	11.1	57.6	72.7
Sulfur	11.3	57.6	72.9

**Table 2: Average of Treatments**

TREATMENT	MOISTURE	TW	YIELD
Sulfur	11.3	57.7	70.28
None	11.3	57.7	69.50

## Conclusion:

This study that we observed in Wabash, IN did not show a response to S applied at planting. The response to sulfur fertilizer is going to depend on several variables such as fertilizer product used, application timing, rate, and soil fertility. We see a 0.78 bushel increase with the application of S at planting. This is one trial in one location with one treatment, many other sulfur applications in other locations have shown to increase yield. We will continue to look at nutrient applications and their impact on yield in future studies.









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