



2019 Fantasy Farming Challenge

Trial Objective

- In 2013, the Monmouth Learning Center created an educational competition for area high school agriculture programs. Since that time, the Fantasy Farming Challenge has grown each year. In 2019, we had 22 participating schools from Illinois. Through this program, thousands of high school students have had the opportunity to learn more about crop production and the agriculture industry.
- The Challenge begins in February when students in the participating schools attend a presentation where they learn about basic corn production, the key decisions a grower must make every season, and the risks and costs associated with those decisions. From there, the students must design a corn production “field” and make the following key decisions:
 - Select a corn product from a list of several different genetic families and trait packages
 - Whether to add a soil insecticide
 - Planting date (early, mid, or late)
 - Seeding rate
 - Row spacing (20 or 30 inches)
 - Pounds of nitrogen/acre
 - Timing of nitrogen application (all preplant or split between preplant and in-season application)
 - Whether to apply a foliar fungicide
 - Most of these decisions have a cost associated with them, and there are several fixed costs for each plot based on equipment, fuel, herbicides, land rent, etc.
- Once their decisions have been submitted, the Learning Center staff plants each school’s plot, implementing the production decisions of the students. During the season, each school takes a field trip to the Monmouth Learning Center to see their plot and learn more about agronomy as well as career opportunities in the industry.
- At the end of the season, all plots are harvested, yields are adjusted to 15% moisture, and the grain is sold on the cash market. There are two prizes given out: one is awarded to the school who produces the highest yield, and one is awarded to the school who returns the highest profit based on their decisions.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield (bu/acre)	Seeding Rate (seeds/acre)
Monmouth, IL	Silt loam	Soybean	Conventional	See Table 1	10/8/19	250	See Table 1



2019 Fantasy Farming Challenge

Table. 1 Management Choices								
School	Maturity	Trait	Insecticide?	Seeding Rate	Row Spacing (inches)	Nitrogen Rate	Planting Date	Fungicide?
Riverdale	105 Day RM	VT2PRIB	N	35500	30	260	Early	N
Spoon River Valley	105 Day RM	VT2PRIB	N	42000	20	160/65	Mid	Y
Kewanee	103 Day RM	VT2PRIB	N	35000	20	150/100	Mid	Y
ROWVA	104 Day RM	SSRIB	N	38000	20	220	Early	Y
Princeville	104 Day RM	SSRIB	N	38000	30	120/60	Early	Y
Farmington	104 Day RM	SSRIB	N	38000	30	160/80	Early	Y
Mercer County	105 Day RM	VT2PRIB	Y	38000	30	90/165	Early	N
Sherrard	106 Day RM	VT2PRIB	N	39000	20	180/80	Early	N
AlWood	104 Day RM	SSRIB	Y	42000	20	60/90	Early	Y
West Central	104 Day RM	SSRIB	N	42000	20	100/120	Early	Y
Williamsfield	105 Day RM	VT2PRIB	N	37000	30	100/120	Early	Y
United	104 Day RM	SSRIB	N	37000	30	150/100	Early	Y
Wethersfield	104 Day RM	SSRIB	Y	36000	30	100/150	Early	N
Geneseo	104 Day RM	SSRIB	N	32000	30	100/150	Early	Y
Monmouth-Roseville	102 Day RM	VT2PRIB	N	40000	20	70/105	Early	Y
Cambridge	105 Day RM	VT2PRIB	N	34000	30	100/100	Early	Y
Galva	104 Day RM	SSRIB	N	39000	20	80/120	Mid	Y
Annawan	103 Day RM	SSRIB	Y	32000	30	160	Mid	Y
Rockridge	104 Day RM	SSRIB	N	38000	20	100/80	Mid	Y
Orion	105 Day RM	VT2PRIB	N	35000	30	70/150	Mid	N
Knoxville	102 Day RM	SSRIB	N	37000	30	100/100	Mid	N
VIT	103 Day RM	SSRIB	N	30000	30	60/140	Mid	N

SSRIB = SmartStax® RIB Complete®, corn blend, VT2PRIB = VT Double PRO® RIB Complete® corn blend

Understanding the Results

2019 Fantasy Farming Challenge:
Yield vs. Profitability

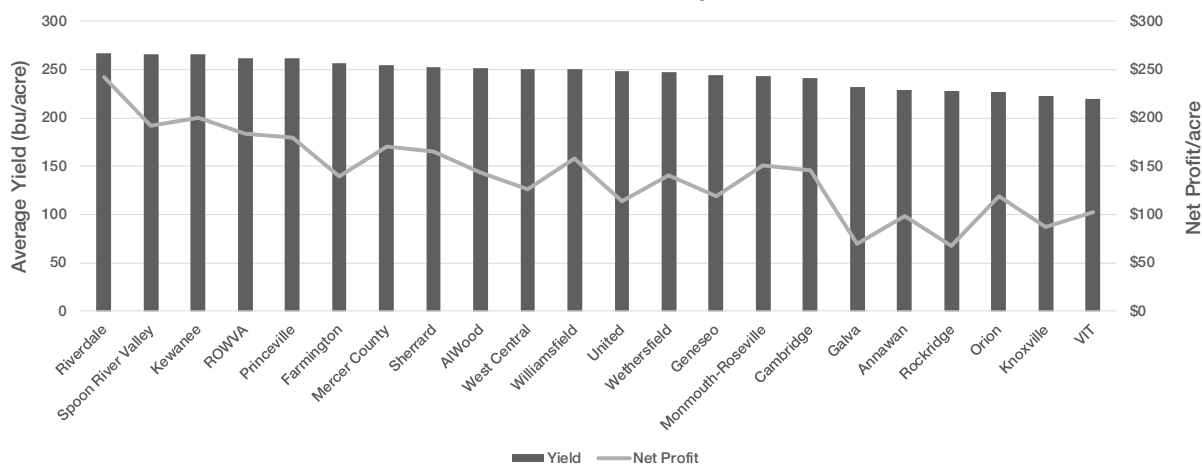


Figure 1. Average yields and net profits of the different plots in the 2019 Fantasy Farming Challenge.



2019 Fantasy Farming Challenge

- Corn maturity and trait package were not major factors with regard to yield. However, when analyzing profitability, the VT Double PRO® RIB Complete® corn blend trait packages tended to be the more profitable choice. This was not surprising as these plots were planted on soybean stubble, so corn rootworm was not a factor.
- Nitrogen management was also critical this year. Schools that went with 'front-heavy' applications of nitrogen tended to yield and perform better. Cutting back on nitrogen rates resulted in much lower productivity.
- For the most part, early planting outperformed later planting.
- The top five schools (yields) were within 6 bu/acre of each other but were separated by as much as \$62.79 in net profit/acre.
- The plot with the highest per-acre cost was 6th in yield.
- Similarly, the plot with the lowest per-acre cost ranked 18 out of 22 in overall profitability.

Key Learnings

- These are excellent lessons for students in that the goal of a farmer is not just to produce high yields, but to do so efficiently and profitably. Continuing to add inputs does not guarantee higher yield and cutting costs does not necessarily lead to better profitability.
- It is very seldom in this competition that the highest yielding plot is also the most profitable, but in 2019 that was the case. Congratulations to the students at Riverdale High School in Port Byron, IL for putting together the winning plot! Thank you to all schools who participated, and we look forward to conducting this competition again in 2020!



Figure 2. Students from the Riverdale High School Agriculture program designed the highest yielding and most profitable plot in the 2019 Fantasy Farming Challenge.



2019 Fantasy Farming Challenge

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