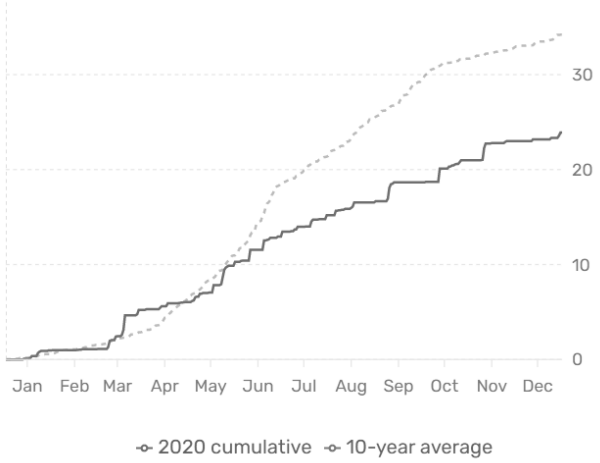
Soybean Benchmarking: Baseline vs Improved Soybean Practices

Study ID: 0926039202001
County: Cuming
Soil Type: Moody silty clay loam 6-11% slopes; Alcester silty clay loam 2-6% slopes; Moody silty clay loam 2-6% slopes, eroded; Calco silty clay loam occasionally flooded
Harvest Date: 9/25/20
Row Spacing (in): 30
Variety: Midland Genetics® 2990
Reps: 4
Previous Crop: Corn
Tillage: Disk
Herbicides: ***Pre:*** Treflan® ***Post:*** Enlist®
Fertilizer: None

Irrigation: None
Rainfall (in):



Introduction: Analysis of producer survey data revealed: (1) an average yield gap of 20-30% between current farmer yield and potential yield as determined by climate, soil, and genetics, and (2) a number of agronomic practices that, for a given soil-climate context, can be fine-tuned to close the gap and improve soybean producer profit. In Nebraska, three practices were identified as being important for improving yield and producer profit. These practices relate to planting date, seeding rate, and the use of foliar fungicides and insecticides. This study collectively tested the "baseline" practices versus the "improved" practices. Across four Nebraska sites in 2019, the improved treatment resulted in an average 8 bu/ac yield increase and $46/ac profit increase compared to the baseline treatment. Soybean cyst nematode tests for this field came back negative.

Baseline: Soybeans planted on May 15, at a rate of 160,000 seeds/ac, with no foliar fungicide or insecticide.

Improved: Soybeans planted on May 4, at a rate of 135,000 seeds/ac with a foliar fungicide (8 oz/ac Delaro®) and insecticide (8 oz/ac Tundra® Supreme) application on July 23.

Results:

	Stand Count (plants/ac)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
Baseline	127,500 A*	12.9 A	55 B	476.50 B
Improved	113,667 B	12.3 A	60 A	503.95 A
P-Value	0.015	0.118	0.038	0.090

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre corrected to 13% moisture.
‡Marginal net return based on $9.50/bu soybean, $43.56/unit seed ($50/ac for baseline and $42/ac for improved), $12.50/ac for fungicide and insecticide for improved treatment, and $7.50/ac for application of fungicide and insecticide on improved treatments.

Summary: In 2020, the improved treatment (lower seeding rate, early planting, and fungicide and insecticide application) resulted in a 5 bu/ac yield increase and a $27.45/ac increase in profit.

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