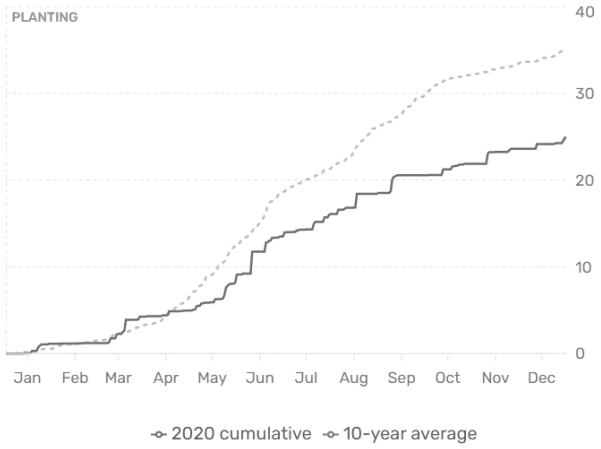
Soybean Benchmarking: Baseline vs Improved Soybean Practices

Study ID: 1133053202001
County: Dodge
Soil Type: Gibbon loam 0-2% slope; Saltine-Gibbon complex occasionally flooded
Harvest Date: 9/25/20
Row Spacing (in): 30
Variety: Pioneer® P29A25X
Reps: 4
Previous Crop: Corn
Tillage: Disked twice in fall, field cultivated in spring
Herbicides: ***Pre:*** 9.8 oz/ac Authority® Supreme on 5/1/20 ***Post:*** 22 oz/ac XtendiMax® with VaporGrip® Technology, 1 pt/ac Medal® EC, 8 oz/ac Targa®, and 24 oz/ac Roundup PowerMAX® on 6/9/20
Seed Treatment: PPST

Fertilizer: 40 lb/ac N as 44% ESN
Irrigation: Pivot, Total: 2.5"
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 positive at a low rate of 120 eggs per 100 cc's of soil (3 oz).

Baseline: Soybeans planted on May 14, at a rate of 154,500 seeds/ac, with no foliar fungicide or insecticide.

Improved: Soybeans planted on April 30, at a rate of 120,000 seeds/ac with a foliar fungicide (14 oz/ac Affiance®) and insecticide (3.8 oz/ac lambda-cyhalothrin) application on July 2.

Results:

	Stand Count (plants/ac)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
Baseline	134,544 A*	11.2 A	58 A	505.87 A
Improved	102,541 B	11.2 A	53 A	452.18 A
P-Value	0.003	0.731	0.223	0.175

*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, $43.50/unit seed ($48/ac for baseline and $36/ac for improved), $19.19/ac for fungicide and insecticide for improved treatment, and $6.94/ac for application of fungicide and insecticide on improved treatments.

Summary: The improved treatment at this site did not result in a statistically higher yield or profit.

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