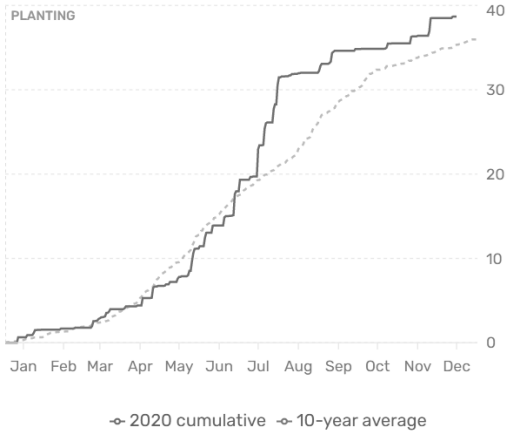
Soybean Benchmarking: Baseline vs Improved Soybean Practices

Study ID: 1124147202001
County: Richardson
Soil Type: Nodaway silt loam occasionally flooded; Zook silty clay loam occasionally flooded
Harvest Date: 10/30/20
Row Spacing (in): 15
Hybrid: Pioneer® P42A96X
Reps: 4
Previous Crop: Corn
Tillage: No-Till
Herbicides: ***Pre:*** 9 oz/ac Authority® Supreme, 8 oz/ac 2,4-D LV6, 12 oz/ac Veritas™ LV, and 20 oz/ac glyphosate on 4/30/20 ***Post:*** 30 oz/ac glyphosate, 1 qt/ac Warrant®, 12.8 oz/ac Engenia®, and 8 oz/ac clethodim on 6/16/20
Seed Treatment: PPST 120+, PPST 2030 G, Gaucho®, EverGol® Energy, Lumisena™, ILeVO®

Fertilizer: 109 lb K/ac as 0-0-60; 5.7 lb N/ac and 27 lb P/ac as 11-52-0; 13 oz/ac ENC®FLEX foliar applied on 6/16/20
Irrigation: None
Rainfall (in):



Soil Tests (June 2020 - average of study area)

pH	BpH	CEC	1:1 S Salts	OM	Nitrate-N	K	S	Zn	Fe	Mn	Cu	Ca	Mg	Na	H	K	Ca	Mg	Na	Mehlich P-III
		meq/100g	mmho/cm	%	ppm	ppm									%					ppm
7.3	7.2	15.4	0.15	2.7	5.7	207	4.2	1.73	42.3	8	1.21	2522	271	10	0	3	82	15	0	59

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 13, at a rate of 160,000 seeds/ac, with no foliar fungicide or insecticide.

Improved: Soybeans planted on May 1, at a rate of 128,000 seeds/ac with a foliar fungicide (4 oz/ac Priaxor® and 4 oz/ac Propi-Star® EC) and insecticide (4 oz/ac Hero®) aerially applied on August 6, 2020.

Results:

	Stand Count (plants/ac)	Test Weight (lb/bu)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
Baseline	146,500 A*	57 A	11.9 A	67 B	553.27 B
Improved	110,833 B	57 A	11.8 A	70 A	564.97 A
P-Value	0.006	0.214	0.799	0.016	0.060

*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, $76.25/unit seed with seed treatments ($87.14/ac for baseline and $67.71/ac for improved), $403.20/gal Priaxor®, $60/gal for Propi-Star® EC, and $151.70/gal Hero® ($20.40/ac for fungicide and insecticide for improved treatment), and $9.00/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 an 3 bu/ac yield increase and a $11.70/ac increase in profit.

Sponsored by: University of Nebraska Lincoln

In Partnership with: Nebraska Corn Board; Nebraska Soybean Checkoff; Nebraska Corn Growers Association; Nebraska Dry Bean Commission

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