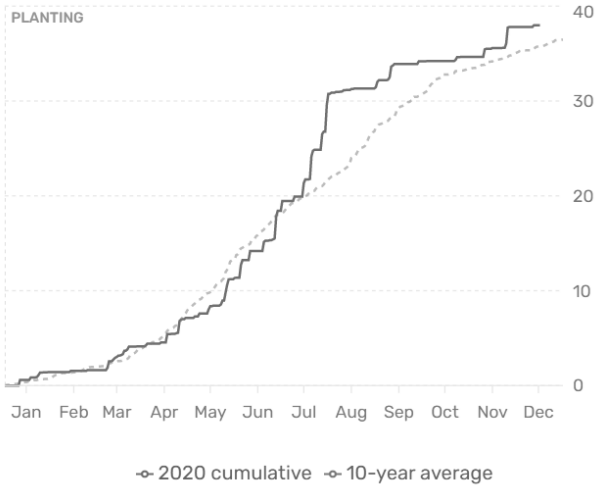
# Soybean Benchmarking: Baseline vs Improved Soybean Practices

**Study ID:** 0821KS013202001
**County:** Brown, KS
**Soil Type:** Wymore silty clay loam 1-3% slope
**Harvest Date:** 10/12/20
**Row Spacing (in):** 15
**Hybrid:** Pioneer® P37A27X
**Reps:** 4
**Previous Crop:** Corn
**Tillage:** No-Till

**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 |
| 6.8 | 7.2 | 13.1 | 0.1 | 4 | 5.4 | 224 | 6.2 | 2.69 | 47.9 | 18.7 | 0.81 | 2176 | 190 | 8 | 0 | 4 | 83 | 12 | 0 | 15 |

**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. This is part of a multi-state effort; to view the entire 2019 report visit https://cropwatch.unl.edu/OnFarmResearch/2020_BootsOnTheGround_final.pdf. Soybean cyst nematode tests for this field came back negative.

***Baseline:*** Soybeans planted on May 12, at a rate of 160,000 seeds/ac, with no foliar fungicide or insecticide.

***Improved:*** Soybeans planted on April 23, at a rate of 130,000 seeds/ac with a foliar fungicide (4 oz/ac Priaxor®) and insecticide (4 oz/ac Hero®) application on July 24.

**Results:**

| | Stand Count (plants/ac) | Yield (bu/ac)† | Marginal Net Return‡ ($/ac) |
|---|---|---|---|
| Baseline | 150,000 A* | 69 B | 595.16 B |
| Improved | 119,500 B | 78 A | 665.80 A |
| P-Value | 0.003 | 0.001 | 0.002 |

*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, $49.45/unit seed ($56.51/ac for baseline and $45.92/ac for improved), $452/gal Priaxor® and $138/gal Hero® ($18.44/ac for fungicide and insecticide for improved treatment), and $6.94/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 9 bu/ac yield increase and a $70.00/ac increase in profit.

*This study was conducted in cooperation with a regional study funded by the North Central Region Soybean Research Program.*

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