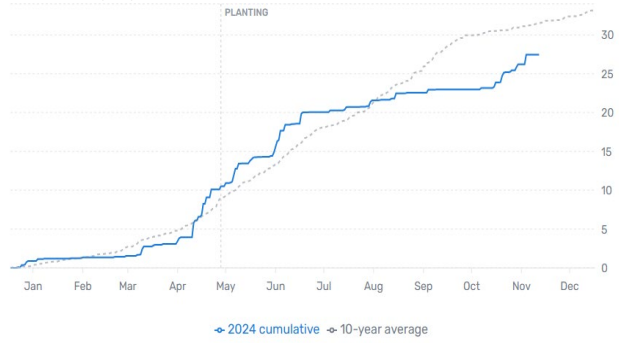
Irrigated Soybean Population Study

Study ID: 1537021202401
County: Burt
Soil Type: Onawa silty clay; Blyburg silt loam
Planting Date: 5/12/24
Harvest Date: 10/02/24
Population: Variable
Row Spacing (in): 15”
Reps: 4
Previous Crop: Corn
Herbicides: ***Pre:*** Authority First® ***Post:*** 1 qt/ac Liberty®
Foliar Insecticides: Hero® with fungicide
Foliar Fungicides: 8 oz/ac Delaro®
Fertilizer: None

Irrigation: Pivot
Rainfall (in):



Introduction: Previous on-farm research in Nebraska has demonstrated that soybean planting rates of 80,000 to 120,000 seeds/ac resulted in the highest profitability. The purpose of this study was to evaluate the impact of seeding rates on the grower operation. Three seeding rates were evaluated: 100,000 seeds/ac, 125,000 seeds/ac, and 150,000 seeds/ac (grower rate). Treatments were randomized and replicated in field-length strips. Yield monitor data were collected at the end of the growing season and post-processed to remove errors. Stand counts were taken one month after planting in each replication.

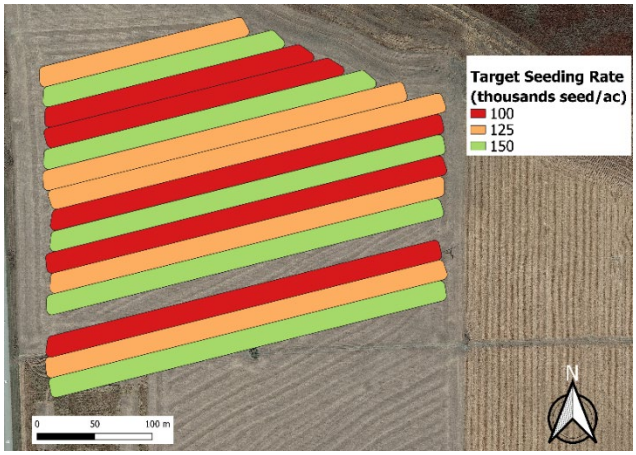


Figure 1: Treatment design with strip trials of 100,000, 125,000, and 150,000 target populations.

Results:

	Stand Counts (plants/acre)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
100,000 seeds/ac	94,541 A*	8.3 A	86 A	888 A
120,000 seeds/ac	103,306 A	8.3 A	79 A	796 A
150,000 seeds/ac	114,900 A	8,3 A	83 A	819 A
P-Value:	0.18	0.46	0.45	0.40

*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 $11/bu soybeans, $38.6/ac cost of 60,000 seeds/ac, $47.4/ac cost of 80,000 seeds/ac, $59.3/ac cost of 100,000 seeds/ac, and $71.1/ac cost of 120,000 seeds/ac.

Summary:

- No significant differences were found in stand counts, moisture, yield or marginal net return between the three target populations.