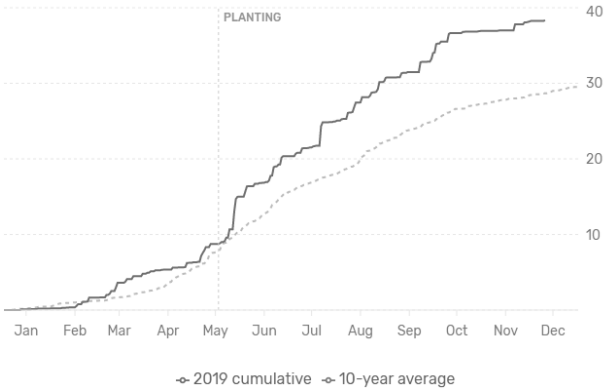
Irrigated Soybean Population Study

Study ID: 0811023201901
County: Butler
Soil Type: Hastings silt loam 0-1% slope
Planting Date: 5/17/19
Harvest Date: 10/19/19
Row Spacing (in): 30
Variety: Pioneer® P28T71X
Reps: 4
Previous Crop: Corn
Tillage: Disk, Harrow
Herbicides: ***Pre:*** 1 pt/ac 2-4D LV EST, 4 oz/ac Authority® First, 2 pt/ac Boundary®, 24 oz/ac Durango® ***Post:*** 32 oz/ac Durango®, 1 pt/ac Ultra Blazer®, 8 oz/ac clethodim, 2 oz/ac Anthem®MAXX
Seed Treatment: Gaucho® and Lumivia™
Foliar Insecticides: None
Foliar Fungicides: None
Fertilizer: None
Irrigation: Pivot, Total: 2"
Rainfall (in):



Introduction: Previous on-farm research 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 three seeding rates to determine the seeding rate that maximized yield and profit. The target seeding rates were 90,000, 120,000, and 150,000 seeds/ac. Stand counts and Dectes stem borer counts were taken on September 23. High wind laid beans over.

Results:

Treatment (seeds/ac)	Stand Count (plants/ac)	% of Planted Seeds Present at Harvest	Dectes Stem Borer Infestation %	Moisture (%)	Test Weight (lb/bu)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
90,000	76,000 C*	85 B	6 A	11.3 A	56 A	69 A	528.04 A
120,000	111,500 B	93 A	8 A	11.2 A	56 A	69 A	519.62 AB
150,000	132,125 A	88 AB	9 A	11.5 A	56 A	69 A	501.73 B
P-Value	<0.0001	0.029	0.867	0.135	0.664	0.608	0.028

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre adjusted to 13% moisture.
‡Marginal net return based on $8.10/bu soybean and $49.45/unit seed ($31.79/ac for 90,000 seeds/ac; $42.39/ac for 120,000 seeds/ac; $52.98/ac for 150,000 seeds/ac)

Summary:

- Final plant stands at harvest ranged from 85% to 93% of the planting rate.
- There was no difference in test weight, grain moisture, Dectes stem borer counts, or yield between the seeding rates evaluated.
- The lowest seeding rate had the highest net return.

Sponsored by: **In Partnership with:**