

Seeding Rates for Late-Planted Soybeans

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Objective

To evaluate the effects of seeding rate on the yield of late-planted soybeans.

Background

Cooperator:	OARDC Northwestern Branch	Fertilizer:	100 lbs. 0-46-0
County:	Wood		150 lbs. 0-0-60
Nearest Town:	Hoytville	Planting Date:	June 17, 2002
Drainage:	Systematically tiled	Seeding Rate:	See Methods
Soil type:	Hoytville clay	Row Width:	7.5-inch
Tillage:	Disk	Herbicides:	
Previous Crop:	Corn	PRE:	3.4 oz/A Canopy SP
Variety:	Pioneer 93B01		16 oz/A 2, 4-D Ester
Soil test:	pH 6.5, P 104 ppm	POST:	26 oz/A Roundup Ultra Max + AMS
	K 208 ppm	Harvest Date:	October 9, 2002

Methods

Experimental design was a randomized complete block with four treatments replicated four times. Treatments were four seeding rates — 150,000; 200,000; 250,000; and 300,000 seeds/ A. A Great Plains No-Till Drill was used for planting. Drill was calibrated by using a seed counter before planting. Plots were 10 feet wide and 74 feet long. The center 11 rows of each plot were harvested for grain yield. A plot combine scale and moisture sensor was used to estimate grain weight and moisture. Yield was adjusted to 13% moisture. Harvest population was estimated by counting plants from four adjacent rows for 6.5 feet from three areas of each plot.

Results

Table 1. The Soybean Grain Yield, Harvest Moisture, and Harvest Population.^a

Planted Population (seeds/A)	Yield (bu/A)	Harvest Moisture (%)	Harvest Population (plants/A)
300,000	47.2 a	13.7	272,082 a
250,000	45.8 a	13.2	230,533 b
200,000	43.7 a	12.9	169,772 c
150,000	37.9 b	12.2	124,872 d
LSD (0.05)	5.7	NS	12,873
F-test	5.3	<1	261

^a Means followed by the same letter in the same column are not significantly different.
NS = Not Significant

Discussion and Summary

Grain yields were similar for seeding rates 200,000 seeds/ A and above. The 150,000 treatment had significantly lower yields than other treatments. Harvest moisture was not affected by seeding rate. Significant separation was observed for harvest populations among treatments. Conditions were good for stand establishment as evidenced by the stand being 88% of the target-seeding rate across treatments.

Higher seeding rates are generally recommended for later plantings. This study would suggest that 200,000 seeds/ A would be adequate for optimal yields under good growing conditions for late plantings. Reducing seeding rate 50,000 seeds/ A, assuming a 50lb bag of Roundup Ready Soybeans cost \$20, and 3,000 seeds/ lb, may save approximately \$7/ A.

Further studies are required to determine which seeding rate would be adequate for more stressful conditions during emergence.

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