Roundup Ready Soybean Population Study

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Objective

To evaluate the response of Roundup Ready soybeans to different seeding rates.

Background

Cooperator:	Marsh Foundation/ Farm Focus	Fertilizer:	None
		Herbicides:	EPOST: Roundup Ultra (1.5 pt/A)
County:	Van Wert		MPOST: Roundup Ultra (1.0 qt/A)
Nearest Town:	Van Wert	Variety:	Callahan 8297 RR (treated)
Soil type:	Hoytville silty clay loam	Planting Date:	May 11, 1999
Drainage:	Tile	Harvest Date:	September 27, 1999
Tillage:	No-till		
Previous Crop:	Corn		

Methods

A study using four replicates in a randomized complete block design was established to determine the effect of seeding rate on Roundup Ready Soybean yields. Seeding rate treatments were 100,000, 150,000, and 200,000 seeds/A. Plots were 45 feet wide x 1,415 feet long. Soybeans were planted with a John Deere 750 No-Till Drill. The center 28 feet of each plot was harvested and weighed by a weigh wagon to determine grain yield at 13% moisture. Harvest populations were estimated by counting the number of plants in three-foot sections from two adjacent rows. Counts were made at three different locations in each plot.

Results

Planted Population (seeds/A)	Harvest Population (plants/A)	Yield (bu/A)
100,000	151,008 A	37.1 A
150,000	166,496 A	38.0 A
200,000	216,832 B	39.4 B
LSD (P = 0.05)	48,825	0.99
CV	15.84%	1.43%

Means with the same letter are not significantly different.

Summary and Notes

The data shows that the drill setting was not correct for the 100,000 seeding treatment. The drill was not calibrated to determine the actual seeding rates. Rather, settings on the drill were used as a guide for population seeding rates. This would indicate that planter settings might be variable with regards to comparing target-seeding rates with final harvest populations. However, populations were valid and statistically different between the 150,000 and 200,000 treatments. Yield was also significantly different between these two treatments.

In conclusion, data from this one-year study would suggest higher yields at the targeted planting population of 200,000 seeds/A. However, a one bushel increase may not recover the increased cost of additional seed. Also, results may be different in another year with normal rainfall, since yields were reduced at this site due to dry weather. Harvest populations from this study indicate the importance of proper drill calibration for seeding rates.

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