

# Roundup Ready Soybean Population Study

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## Objective

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

## Background

Cooperator:	David Sachs	Fertilizer:	None
County:	Sandusky	Herbicides:	EPOST: Roundup Ultra (2 pt/A)
Nearest Town:	Fremont	Varieties:	Dekalb 285
Soil Type:	Kibbie fine sandy loam	Planting Date:	April 28, 2000
Previous Crop:	Corn	Planting Rate:	See Methods
Drainage:	Tile	Harvest Date:	September 29, 2000
Tillage:	No-till		

## 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 110,000, 165,000, and 220,000 seeds per acre. Plots were 45-foot wide x 3,032-foot long. Soybeans were planted with a John Deere 750 no-till drill. A Case-IH 2366 combine was used to harvest the center 25 feet of each plot. Weights were estimated by an Ag Leader 3000 yield monitor. The average size of the harvested plot was 1.74 acres. Harvest populations were estimated by counting the number of plants in three-foot sections from six adjacent rows. Counts were made at three different locations in each plot.

## Results

**Table 1. Corn Population and Yield.**

<b>Planting Rate (seeds/A)</b>	<b>Yield (bu/A)</b>	<b>Harvest Population (plants/A)</b>
220,000	51.9 a	189,898 a
165,000	48.6 ab	148,635 b
110,000	43.5 b	114,390 c
LSD (0.05)	6.4	18,137

Means followed by the same letter are not significantly different.

## **Summary and Notes**

Drill settings for this study were determined by using seed tag information as to seeds per pound, and then the drill was set for pounds per acre to get the desired population. Seeding rates included a 10% germination loss. The low-end population was within 3% of the desired population whereas the other desired populations were 90% and 85% of desired results. It must be noted that this area received several heavy rains and had water damage to certain areas within the plot.

The high-end seeding rate had yields statistically similar to the middle seeding rate, and 21% larger than the low-end seeding rate. The two lower seeding rates were also statistically similar. Significant differences among the harvest populations validate differences among seeding rate treatments.

This data would support a seeding rate of 165,000 seeds per acre without lowering yields, a cost savings of 55,000 seeds per acre. Yield reductions may occur at the low-end seeding rate.

## **Acknowledgment**

We would like to express our appreciation to Dave Sachs for assisting with the study. This was a very large plot, and without Dave's assistance, this study would not have been possible. It also represents a total field with any differences being seen across the total test.

For additional information, contact:

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