

Soybean Seeding Rate Comparison

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Objective

To evaluate 3 soybean seeding rates over yield and profit.

Background

Cooperator:	Bob Moser	Soil test:	pH 6.4, P 50 lbs/ac, K 259
County:	Wood		lbs/ac
Nearest Town:	Perrysburg	Fertilizer:	none
Drainage:	Tile, well-drained	Planting Date:	5-11-11
Soil type:	Hoytville, clay	Planting Rate:	see below
Tillage:	notill	Row Width:	15 in.
Previous Crop:	corn	Herbicides:	Roundup 1 qt/ac pre-plant, 2 nd application June 15 1 qt/ac
Variety:	GroMor 30R10	Harvest Date:	10-25-11

Methods

The entries were replicated four times in a randomized complete block design. Plot size- 80 x 1,000 feet each entry. All treatments received the same tillage, herbicide, and pre-season fertilizer applications. GroMor 30R10 is a 3.0 maturity. Seeding rate was drill setting calibrated for population desired, harvest population was actual plant count. Yields were taken from center of each treatment with a full width combine head.

Results

Treatment	Seeding Rate Plants/acre	Harvest Population	Yield Bu/acre
1	125,000	145,600	65.92 A
2	175,000	198,400	64.59 B
3	225,000	260,000	64.29 B

LSD (.05) 1.04

Seed Cost Table

All calculations on a per acre basis

Seed costs \$0.35/ 1,000 seed

Treatment 1 : 145,600 seeds = \$ 50.96

Treatment 2 : 198,400 seeds = \$ 69.44

Treatment 3 : 260.000 seeds = \$ 91.00

Income comparison Soybean market price \$ 11.25 / bushel

Treatment	Yield	Gross Income	Seed Cost	Income Remaining
1	65.92	\$741.60	- \$50.96	= \$690.64
2	64.59	\$726.64	\$69.44	\$657.20
3	64.29	\$723.26	\$91.00	\$632.26

Summary

Study yields showed the lowest population had significant difference with increased yield. The most profitable treatment was the seeding rate of 145,600 seeds/acre; due to increased seeding cost as populations increased. For each additional 50,000 seeds planted, cost increased \$17.50 and requires 1.6 bushel per acre (\$11.25 per bushel price) increased yield to cover the additional seed cost. Target seeding rates varied significantly from harvest populations. This illustrates the challenge of correctly adjusting planter settings to deliver the proper seeding rate. As soybean seed size (number of seeds per pound) changes, producers need to recalibrate planters to ensure accurate planting populations.

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