Soybean Seeding Rate x Maturity Comparison

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Objective
To evaluate 4 soybean seeding rates and 2 maturities for maximum yield and profit.

Background

Cooperator:	O.A.R.D.C. NW Branch	Fertilizer:	200lb/ac 10-26-26 fall 2008
County:	Wood	Planting Date:	5-22-09
Nearest Town:	Hoytville	Planting Rate:	see below
Drainage:	Tile, well-drained	Row Width:	7.5 in.
Soil type:	Hoytville, clay	Herbicides:	Canopy, Showdown, Roundup Weathermax, liquid AMS
Tillage:	notill		
Previous Crop:	soybean	Harvest Date:	10-05-09
Variety:	Pioneer 92Y80, Pioneer 93Y20		

Methods
The entries were replicated four times in a randomized complete block design. Plot size- 10 x 70 feet for each entry. Harvest data was collected from the center 13 feet of a 20 feet wide entry. Notill soybeans after notill soybeans. All treatments received the same tillage, herbicide, and pre-season fertilizer applications. Pioneer 92Y80 = 2.8 maturity, Pioneer 93Y20 = 3.2 maturity. Seeding rate was drill setting calibrated for population desired, harvest population was actual plant count.

Results

Maturity	Seeding Rate Plants/acre	Harvest Population	Yield Bu/acre
2.8	60,000	67,200	54.5
2.8	120,000	115,200	52.9
2.8	180,000	150,400	52.6
2.8	240,000	252,800	54.5
3.2	60,000	54,400	54.7
3.2	120,000	137,600	54.8
3.2	180,000	169,600	56.8
3.2	240,000	243,200	58.7
		LSD (.05)	NS

Seed Cost Table
All calculations on a per acre basis

Seed costs $0.44/ 1,000 seed

60,000 seeds = $ 26.40
120,000 seeds = $ 52.80
180,000 seeds = $ 79.20
240,000 seeds = $ 105.60

Summary

Study yields showed no significant differences. The most profitable treatment was seeding rate of 60,000 seeds/acre due to increased seeding cost as populations increased. For each additional 60,000 seeds planted, cost increased $26.40 and requires 2.6 bushel per acre ($10 per bushel price) increased yield just to cover the additional seed cost.

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