

Evaluation of Four Different Row Widths in Soybeans

Andy Kleinschmidt, AGNR Extension Educator- Van Wert County
Gary Prill, Program Manager- Farm Focus Research

Objective

The objective of this study was to evaluate the yield response of soybeans to four different row widths planted at seeding populations recommended by the seed supplier.

Background

Soil Type:	Hoytville clay	Herbicide (continued):	
Drainage:	Non-systematic Tile	POST(July 11)	32 oz/A Roundup
Previous Crop:	Corn		WeatherMax + 17 lb/100
Tillage:	No-till		gallons AMS
Soil Test(2005):	pH 6.6, P 21 ppm, K 128 ppm	Variety:	Gries Seed Farms GSF293RR
Fertilizer:	285 lb/A 4-18-39 surface broadcast (November 2005)	Row Width:	Variable-See Methods
Herbicide:	2.8 oz/A Scepter 70DG + 1.5 EPP(April 24) pt/A Prowl H2O + 1 pt/A Roundup OriginalMax + 1 pt/A 2,4-D LVE + 17 lbs/100 gallons AMS	Planting Rate:	Variable-See Methods
		Planting Date:	May 31, 2006
		Harvest Date:	October 9, 2006

Methods

This study was set up with four production systems consisting of four different row widths at specified planting populations replicated three times. The planting populations used were based on recommendations from the seed company for the specific seed supplied. The treatments were:

- 1) 7.5 inch row spacing @ 235,000 seeds per acre
- 2) 15 inch row spacing @ 210,000 seeds per acre
- 3) Twin row spacing @ 190,000 seeds per acre
- 4) 30 inch row spacing @ 185,000 seeds per acre

The twin row spacing plots consisted of two soybean rows spaced 7.5 inches apart with a 22.5 inch gap between each set of twin rows. The twin row plots were planted using a Great Plains Precision Planter model 1525P that planted six twin rows in a pass. Both 30 and 15 inch row width plots were planted using a John Deere 7000 Maxemerge six row planter equipped with a five row splitter attachment. The splitter attachment was engaged for planting 15 inch rows and disengaged when 30 inch rows were planted. The 7.5 inch row spacing was planted with a John Deere 750 no-till drill. Each plot consisted of three passes of the planting equipment. Plot length for all plots was 600 feet long.

Harvest populations (September 29) were estimated by counting the number of plants in the row on each side of a 10 foot section at three different locations in each plot. The average number of plants counted per 10 feet was converted to plants per acre. Yields were determined by harvesting one round out of the center of each plot with a John Deere 6620 combine equipped with a calibrated AgLeader PF3000 yield monitor. Plot weights were measured with a calibrated

weigh wagon and moistures were taken from the combine yield monitor. Yields are adjusted to 13% moisture.

Results

Table 1. Soybean harvest population, moisture, and yield means¹.

Treatment	Harvest Population (plants/A)	Moisture (%)	Yield (bu/A)
7.5 inch rows @ 235,000	175,800	10.7	56.6
15 inch rows @ 210,000	150,400	10.8	56.1
Twin rows @ 190,000	128,800	10.7	54.4
30 inch rows @ 185,000	117,300	10.7	50.0
LSD (P=0.05)	17,500	NS	4.5
F-test	26.0	<1	5.2
CV(%)	6.1	<1	4.2

NS= not significant

Summary

The results of this one year trial suggest there were statistical differences between the treatments for harvest populations and yield. It would be expected to see some significant differences in harvest populations because of the variations in planting populations. Yields however were not statistically different for the 7.5-inch, 15-inch, and twin row spacing row widths, only the 30-inch rows.

Past research has shown that narrower row soybeans typically yield better than wider row spacings. This yield advantage is even more pronounced with later planting dates. The date (May 31) when it was finally possible to get in the field to plant this trial would be considered a later planting date for this area. This study tends to support previous research.

However, it does indicate that twin row soybeans may be a viable option to narrower row soybeans while still allowing gaps to make late season sprayer passes through the soybeans without having to run directly over soybean plants. There were no late season sprayer passes required in this trial field. The last sprayer pass was made on July 11 to apply postemergence herbicides.

The results from this one year trial would also suggest that 15-inch and twin row soybeans can provide an opportunity to reduce seed cost without sacrificing yield. As always it is best to consider multiple years of research results, and multiple sources of information when making the decision to adopt a particular production practice.

Acknowledgement

OSU Extension- Van Wert and Farm Focus express appreciation to John Sites, Great Plains Manufacturing territory manager, for supplying the twin row planter and his assistance in getting it set up properly for planting the twin row plots. Thanks also to Gries Seed Farms for supplying the seed, and to BASF and Monsanto for supplying the herbicides used in this study.