

Early and Late Planted Soybeans

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Objective

To evaluate the effects planting date may have on soybean yields.

Background

Cooperator:	Northwestern Branch, OARDC	Fertilizer:	100 lbs. 0-46-0
County:	Wood		150 lbs. 0-0-60
Nearest Town:	Hoytville	Planting Date:	See Methods
Drainage:	Tiled	Seeding Rate:	200,000 seeds/A
Soil type:	Hoytville clay	Row Width:	7.5-inch
Tillage:	Disk	Herbicides:	PRE: 3.4 oz. Canopy SP; 16 oz. 2, 4-D Ester
Previous Crop:	Corn		POST: 26 oz. Roundup
Variety:	Pioneer 93B01		Ultra Max +AMS
Soil test:	pH 6.5, P 104 ppm, K 208 ppm	Harvest Date:	October 9, 2002

Methods

Experimental design was a randomized complete block with three treatments replicated four times. Treatments were three planting dates: May 1, June 11, and June 17. A Great Plains No-till drill was used at planting. Plots were 10 feet wide and 74 feet long. The center 11 rows of each plot were harvested for grain yield. A plot combine scale and moisture sensor was used to estimate grain weight and moisture, respectively. Yield was adjusted to 13% moisture. Harvest population was estimated by counting plants from four adjacent rows for 6.5 feet from three areas of each plot.

Results

The average soybean grain yield and other agronomic traits response to planting date are given in the table on the following page.

Table 1. Soybean Yield, Moisture, and Population.^a

Planting Date	Yield (bu/A)	Harvest Moisture (%)	Harvest Population (plants/A)
June 11	43.7 a	14.1 b	169,772 a
May 1	41.9 ab	12.7 b	140,509 b
June 17	34.7 b	12.2 a	137,605 b
LSD (0.05)	7.6	1.1	19,824
F-test	5	9.6	9.7

^aMeans followed by the same letter in a column are not statistically different.

Discussion and Summary

Yields were similar for the May 1 and June 11 planting date. Even though only six days later, the June 17 planting had statistically lower yields than June 11. The June 11 planting date was significantly higher in moisture but well within a desirable level for harvest. Populations were best for the June 11 planting, reduced for the May planting because of slow emergence from cool and wet soils, and reduced for the June 17 plantings because of unusually hot and dry conditions. Historically, early May plantings have larger yields than June; however, the May 1 planting was more like a late May planting since emergence did not begin until about May 20.

Conditions were also relatively wet and cool until the June 11 planting, then soils began to dry out with warmer conditions. The June 11 planting probably had the best conditions for stand establishment. After the June 17 planting, significant rain events did not occur until the end of July, affecting growth and yields.

In summary, at this site in 2002, conditions were best for soybean growth around June 10. Earlier plantings had poorer and less uniform stands from an extended emergence period caused by abnormally cool and wet conditions, and later plantings were affected by abnormally hot and dry conditions. Yields would be expected to be larger for early May plantings than June in a normal year.

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