

Seeding Rate and Planting Date Effect on Soybeans

Alan Sundermeier, Ohio State University Extension Educator, Wood County

Objective

To determine the soybean yield effect of seeding rate and date of planting.

Background

Crop Year:	2014	Previous Crop:	corn
Location:	O.A.R.D.C. NW Ag Research Station	Tillage:	Disk
County/Town:	Custar, OH , Wood County	Planting Date:	see below
Soil Type:	Hoytville clay loam	Nitrogen:	none
Drainage:	systematic subsoil	Seeding Rate:	see below
		Harvest Date:	9-22-14, 10-25-14, 10-27-14

Methods

The entries were replicated four times in a randomized complete block design. Plot size- 10 x 70 feet each entry. Harvest data was collected from the center 7 feet. All treatments received the same tillage and herbicide application. Corn stalks were chopped with rotary mower then disked to create a stale seedbed on 11/13/13 on all treatments. No spring tillage performed. Planting occurred on the various dates with a Great Plains no-till drill into the stale seedbed with Pioneer 92Y92 soybeans. Herbicides applied on 4-24-14, Authority XL,2,4-D, Makaze, and Choice were applied pre-plant. On 6-23-14, Mad Dog+ and Choice were applied.

Results

Treatment	Date of Planting	Seeding Rate	Harvest Population	Yield Bu/acre
1	May 8, 2014	125,000	112,000	55.0 C
2	May 8, 2014	175,000	160,000	56.6 C
3	May 8, 2014	225,000	224,000	58.1 C
4	May 29, 2014	125,000	112,000	52.3 C
5	May 29, 2014	175,000	166,400	53.1 C
6	May 29, 2014	225,000	214,400	55.6 C
7	July 2, 2014	125,000	108,800	31.9 A
8	July 2, 2014	175,000	169,600	36.9 AB
9	July 2, 2014	225,000	220,800	40.6 B

LSD (0.05) = 7.3

Summary

Treatment	Yield Bu/acre	Gross Income	Seed Cost	Net Income
1	55.0	\$ 605.00	\$ 51.25	\$ 553.75
2	56.6	\$ 622.60	\$ 71.75	\$ 550.85
3	58.1	\$ 639.10	\$ 92.25	\$ 546.85
4	52.3	\$ 575.30	\$ 51.25	\$ 524.05
5	53.1	\$ 584.10	\$ 71.75	\$ 512.35
6	55.6	\$ 611.60	\$ 92.25	\$ 519.35
7	31.9	\$ 350.90	\$ 51.25	\$ 299.65
8	36.9	\$ 405.90	\$ 71.75	\$ 334.15
9	40.6	\$ 446.60	\$ 92.25	\$ 354.35

Economics: Gross income = yield x \$11.00 /bu; Seed cost = \$0.41 per 1,000 seeds x seeding rate; Income remaining = gross income – seed cost.

Discussion:

Harvest populations are nearly 90% of seeded rate which is expected with 90% seed germination.

Yield for the two early planting dates was not significantly different but net income after seed cost was greatest for the 125,000 seeding rate. The July 2 seeding date was significantly lower yielding than the two May dates. The 175,000 and 225,000 seeding rate on July 2 were not significantly different yields. Current recommendations suggest higher seeding rates with later planting due to the reduced period of vegetative growth and are supported by this study.

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For more information, contact:
Alan Sundermeier
Wood County Extension
639 Dunbridge Rd, Suite 1
Bowling Green, Ohio 43402
sundermeier.5@osu.edu



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