

Soybean Population Study, Darke County

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Objective

To determine the effects of soybean seeding rate on soybean yields that will provide data for determining BMPs for soybean seeding rates and may provide data points for determining variable rates for soybean seeding.

Background

Crop Year:	2017	Tillage:	No-Till
Location:	Adams Township	Soil Test:	pH 6.3, P 24 ppm BP1, K 129 ppm
County/Town:	Darke/Bradford	Planting Date:	May 16, 2017
Soil Type:	Celina Silt Loam Brookston Silty Loam	Seeding Rate:	Varied
Drainage:	Systematic Pattern	Harvest Date:	October 3, 2017
Previous Crop:	Corn	Rainfall:	26.66 in. - 4/15-9/15

Methods

Five soybean populations were replicated three times in a randomized complete block design. Treatments were planted with a 12 row Kinze planter with split row units (resulting in 15 inch row spacing) 500 feet in length. All treatments received the same tillage and herbicide applications. Varieties used in a split planter were Asgrow 3832 and 38X2. Stand counts were taken at V4 by obtaining 2 counts using 1/1,000th of an acre per treatment and calculating the simple average. Plots were harvested with a commercial combine equipped with a 30 foot grain header. Yields and moistures were obtained by using a calibrated yield monitor. Yields were verified using a grain cart. Yields were adjusted to 13% moisture. Precipitation data were obtained from cocorahs.org and recorded daily.

Results

No.	Target Planting Population	V4 Stand Count	Treatment Average (bu./acre)
1	80,000	75,700	54.87
2	120,000	114,750	54.53
3	165,000	153,000	58.03
4	200,000	191,000	53.13
5	240,000	210,250	52.83

CV % 5.06; Not significant, LSD = .1



Summary

As expected from previous research, which has shown that the soybean is adaptive in relation to planted population, soybean yield was not influenced by planting population.

Acknowledgement

The author expresses appreciation to on-farm collaborators Overholser Farms for the land use, planting and harvesting of this plot.



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