

Soybean Seeding Rate

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Objective

To determine the effects of seeding rate on soybean yield and profitability.

Background

Crop Year: 2015	Soil Test (grid avg):	pH 6.7
Location: Archbold, OH		P 139 ppm*
County: Fulton		K 303 ppm
Soil Type: Fulton & Latty clay		CEC 15.9
Drainage: Systematic, 50' laterals		O.M. 2.8%
Previous Crop: Corn	Planting Date: May 8, 2014	
Planting Date: May 22, 2015	Fertility: applied in corn year with VRT	
Herbicide:	Harvest Date: October 21, 2015	
3.5 oz Envive, 6 oz Glory, 1 pt 2,4d (Preplant)	Rainfall (Apr-Sept): 25.6"	
22 oz RoundUp PowerMax (Post Emerge)	*Mehlich-3 Extractant	
Tillage: Minimum		

Methods

Five treatments of different soybean populations were replicated four times in a randomized complete block design. Treatments were planted with a 40 foot John Deere 1790 air seeder. All treatments received the same tillage and herbicide applications. Seed used was Rupp 7332. Plot centers were harvested with a commercial combine equipped with a 35 foot grain header. Yields and moistures were obtained by using a calibrated GreenStar 2630 monitor. Yields were shrunk to 13% moisture. Precipitation data was obtained from the National Weather Service Wauseon WTP Station.

Results

Seeding rate (x1,000)	Yield Bu/acre	Gross Revenue per acre	Seed Cost per acre	Net Revenue per acre
97	46.1 cd	\$414.90	\$41.71	\$373.19
121	48.5 bc	\$436.50	\$52.03	\$384.47
145	51.7 ab	\$465.30	\$62.35	\$402.95
170	51.1 b	\$459.90	\$73.10	\$386.8
191	54.2 a	\$487.89	\$82.13	\$405.67
LSD (p<.05)	2.98 (cv 3.84)			

Economics: Gross income= yield x \$9.00/bu; Seed cost= \$0.43 per 1,000 seeds x seeding rate;
Net revenue= Gross revenue – seed cost.



Discussion:

There was no statistically significant difference in yield (or economics) between the 145,000 and 191,000 seeds per acre treatments, however, those seeding rates yielded significantly better than any of the other three rates. Further data in the form of multi-year replications will add to the validity of these results.

Acknowledgement

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