

Soybean Population Study

Samuel G. Custer, Ohio State University Extension Educator, Darke County

Objective

To determine the effects of soybean seeding rate on soybean yields and provide data for soybean population response curves.

Background

Crop Year: 2014

Location: Adams Township

County/Town: Darke/Bradford

Soil Type: Celina Silt Loam

Brookston Silty Loam

Drainage: Systematic with 40 foot Laterals

Previous Crop: Corn

Tillage: No-Till

Soil Test: pH 6.4, P 45 ppm M III, K 168 ppm

Planting Date: May 17, 2014

Nitrogen: None

Seeding Rate: Varied

Harvest Date: October 30, 2014

Methods

Six 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. All treatments received the same tillage and herbicide applications. Seed used was Asgrow 3634. Stand counts were taken at V4 and R7 by obtaining 2 counts 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 can be viewed at cocorahs.org.

Results

No.	Population Planted	Wet Moisture (%)	Treatment Average (bu./acre)
1	60,000	12.5	63.0
2	95,000	12.5	62.4
3	130,000	12.6	64.8
4	165,000	12.6	65.7
5	200,000	12.6	65.9
6	235,000	12.5	66.5

LSD = 4.14 ($p < .38$); CV 4.39; No significant difference.

Summary

As expected from previous research, soybean yield was not influenced by planting population. An economic comparison between the planting populations of 60,000 and 235,000 revealed a \$57.02 per acre advantage over seed costs. Assumptions were soybean seed cost \$.41/1000 and cash beans cost\$9.82/bushel.

Acknowledgement

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



THE OHIO STATE UNIVERSITY

For more information, contact:

Sam Custer

OSU Extension, Darke County

603 Wagner Avenue

Greenville, Ohio 45331

custer.2@osu.edu



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

agcrops.osu.edu

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information: go.osu.edu/cfaesdiversity.