Corn Population Study

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Objective

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

Background

Crop Year:	2017	Soil Test:	pH 6.3, P 24 ppm BP1, K 129 ppm
Location:	Adams Township		
County/Town:	Darke/Bradford	Planting Date:	April 21, 2017
Soil Type:	Celina Silt Loam Brookston Silty Loam	Nitrogen:	200 pounds per acre
		Seeding Rate:	Varied
Drainage:	Systematic Pattern Tile	Harvest Date:	October 26, 2017
Previous Crop:	Soybeans	Rainfall:	26.66 in. - 4/15-9/15
Tillage:	No-Till		

Methods

Five corn populations were replicated three times in a randomized complete block design. Treatments were planted with a 12 row Kinze planter, 500 feet in length. All treatments received the same tillage and herbicide applications. Variety used was Dekalb 6188 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 6 row header. Yields and moistures were obtained by using a calibrated yield monitor. Yields were verified using a grain cart. Yields were adjusted to 15.5% moisture. Precipitation data was obtained from cocorahs.org and recorded daily.

Results

No.	Target Planting Population	V4 Stand Count	Grain Moisture %	Treatment Average (bu./acre)
1	22,000	21,166	16.82 d	183.12
2	26,000	26,000	16.65 cd	191.85
3	30,000	29,833	16.52 bc	209.97
4	34,000	30,166	16.20 a	199.15
5	38,000	37,500	16.25 ab	215.32

Grain Moisture LSD (0.10): 0.29, CV %: 1.39

Yield CV % 9.61; Not significant

Summary

In this plot there was a small but significant difference in the grain moisture at harvest. The lower populations had a significantly higher moisture content compared to the higher populations. There was no significant difference in yield.

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