

## Corn Population Study, Darke County

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### Objective

To determine the effects of corn seeding rate on corn yields to determine best management practices for corn seeding rates and provide data points for determining variable rates for corn seeding.

### Background

Crop Year: 2018

Location: Monroe Township

County/Town: Darke/Gordon

Soil Type: Crosby Silt Loam

Brookston Silty Loam

Drainage: non-systematic

Previous Crop: Soybeans

Tillage: No Till

Planting Date: May 7, 2018

Nitrogen: 200 units/acre

Seeding Rate: Varied

Harvest Date: October 12, 2018

Rainfall: 18.17, April - August

### Methods

Six corn populations, including the farmer's typical variable rate, were replicated three times in a randomized complete block design. Treatments were planted with a 16 row Kinze planter, field length and 1.36 acres each. The farmer's variable rate ranged from 26,000 to 38,000 in 4,000 unit increments and were prescribed based on soil organic matter. All treatments received the same tillage and herbicide applications. Variety used was Channel 210-26VT2PRIB. Stand counts were taken at V4 by obtaining two counts using 1/1,000<sup>th</sup> of an acre per treatment and calculating the simple average. Plots were harvested with a commercial combine equipped with an eight row header. Yields and moistures were obtained using a calibrated yield monitor. Yields were adjusted to 15.5% moisture. Precipitation data were obtained from cocorahs.org and recorded daily.

### Results

No.	Target Planting Population	V4 Stand Count	Grain Moisture %	Treatment Average (bu./acre)	Return above seed (\$/ac)
1	22,000	21,125	14.6 a	206 d	644
2	26,000	25,750	15.7 b	214 c	658
3	30,000	28,688	16.0 b	220 bc	665
4	34,000	32,625	16.1 b	222 b	658
5	38,000	36,688	16.1 b	229 a	669
6	Variable Rate	30,563	15.8 b	223 ab	N/A

Grain Moisture LSD (0.10): 0.49 CV %: 2.50

Yield LSD (0.10): 6.49, CV %: 2.39



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## Summary

In this plot, there was a significant difference in the grain moisture at harvest between the 22,000 population and the other populations. There was a significant difference in yield 38,000 seeding rate yielding significantly better than the other rates. The 38,000 return above seed cost per acre was the best.

## Acknowledgement

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