

## Starter Fertilizer Response in Corn Study

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### Objective

To determine the effects of starter fertilizer, sulfur and zinc on corn yields and provide data for nitrogen and phosphorous response curves.

### Background

Crop Year:	2017	Soil Test:	pH 6.6, P 23 ppm M3, K 141 ppm
Location:	Allen Township	Planting Date:	April 21, 2017
County/Town:	Darke/Bradford	Nitrogen:	200 pounds per acre
Soil Type:	Celina Silt Loam	Seeding Rate:	33,000 seeds per acre
Drainage:	Not patterned	Harvest Date:	October 21, 2017
Previous Crop:	Soybeans	Rainfall:	26.66 in. - 4/15-9/15
Tillage:	No-Till		

### Methods

Five starter fertilizer treatments were replicated three times in a randomized complete block design. Treatments were planted with a 12 row Kinze planter. All treatments received the same tillage and herbicide applications. Seed used was Dekalb 6188. Treatments were made at planting as a 2x2 fertilizer application. Nitrogen levels were balanced at sidedress with appropriate rates of 28% to equal 200 pounds per acre total N applied. Stand counts were taken at V6 by obtaining 2 counts per treatment and calculating the simple average. Plots were harvested with a commercial combine equipped with a 6 row corn head. 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.

#### *Treatments:*

1. 28% only – 43 lbs actual N/acre
2. Starter fertilizer (10-34-0 and 28%) 43 lbs N, 23# P2O5/acre
3. Starter fertilizer (10-34-0 and 28%) with 2 gallons sulfur per acre
4. Starter fertilizer (10-34-0 and 28%) with 2 gallons sulfur and 1 quart zinc per acre
5. No starter fertilizer



## Results

Treatment #	Wet Moisture %	Treatment Average Yield (Bu.)
1	19.49	201.9
2	19.43	194.83
3	18.84	183.10
4	19.02	202.63
5	20.09	203.03

LSD (0.10)CV 4.53; No Significant Difference in yield.

## Summary

Corn yield was not influenced by the addition of any form of starter fertilizer including 10-34-0, sulfur and zinc. There was no significant difference in yield of the corn as affected by the addition of starter.

## 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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