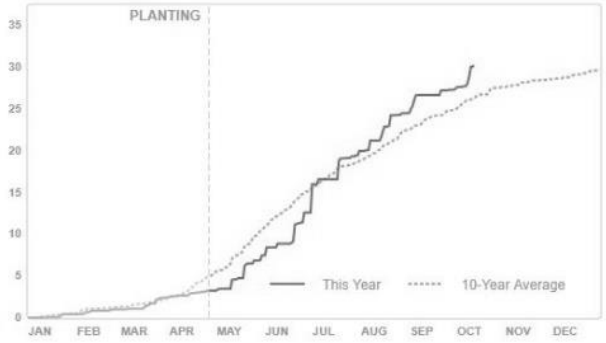
Starter Fertilizer on Irrigated Corn

Study ID: 0718185201802
County: York
Soil Type: Hastings silt loam 0-1% slope; Uly-Hobbs silt loam 11-30% slopes; Hastings silt loam 3-7% slopes
Planting Date: 4/24/18
Harvest Date: 10/4/18
Population: 32,000
Row Spacing (in): 30
Hybrid: Pioneer® P1828AM
Reps: 6
Previous Crop: Soybean
Tillage: Ridge-Till
Herbicides: ***Pre:*** 3 pt/ac Weedmaster® in December 2017; 1 qt/ac Staunch® II and 1 qt/ac Atrazine at planting in April 2018 ***Post:*** 32 oz/ac Durango®, 1 oz/ac Impact®, and 1 pt/ac Atrazine in June 2018
Seed Treatment: None

Insecticides: 1 oz/ac Perm-Up® on top of the soil for cutworm control at planting
Foliar Fungicides: 6 oz/ac Aframe™ and 3 oz/ac Onset® on 7/31/18
Fertilizer: 150 lb/ac 11-52-0, 100 lb/ac AMS, and 175 lb/ac N as anhydrous in November 2017; 3 gal/ac 10-34-0 as starter at planting
Note: Light hail and wind
Irrigation: Pivot, Total: 1.5"
Rainfall (in):



Soil Test (Nov. 2017) – 2 samples were taken in the study area:

Soil pH 1:1	Soluble Salts 1:1 mmho/cm	Excess Lime Rating	Organic Matter LOI %	Nitrate – N ppm N	Nitrate lb N/A 0-10"	Mehlich P-III ppm P	Ca-P Sulfate ppm S	Zn (ppm)	Ammonium Acetate (ppm) K	Ca	Mg	Na	CEC me/100g	% Base Saturation H	K	Ca	Mg	Na
7.0	0.18	NONE	3.0	7.3	22	6	10.1	1.76	421	2311	326	52	15.6	0	7	74	17	1
6.6	0.23	NONE	2.5	6.5	20	24	10	0.98	485	2635	575	53	19.4	0	6	68	25	1

Introduction: The purpose of this study was to evaluate starter fertilizer in irrigated corn production. Previous on-farm research starter fertilizer studies showed minimal yield and economic gains if soil test phosphorus levels were 10 ppm or greater in a corn and soybean rotation (https://go.unl.edu/starter). Yet a number of growers still utilize starter fertilizer for various reasons. Studies have shown that there can be an early growth and yield response from N in an N-P starter fertilizer (https://go.unl.edu/starterfert). In this study, the starter fertilizer included 3 gal/ac 10-34-0 and was compared with a no starter check.

Results:

	Harvest Stand Count (plants/acre)	Moisture (%)	Stalk Rot (%)	Yield† (bu/acre)	Marginal Net Return‡ ($/ac)
Check	30,583 A*	21.3 A	46.25 A	246 A	795.09 A
Starter (3 gal 10-34-0)	29,750 A	21.2 A	45.00 A	246 A	786.19 A
P-Value	0.296	0.363	0.797	0.940	0.746

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre adjusted to 15.5% moisture.
‡Marginal net return based on $3.23/bu corn and$6.85/ac for starter fertilizer.

Summary: Using a starter fertilizer did not result in differences in stand count, grain moisture, stalk rot ratings, yield, or marginal net return.

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