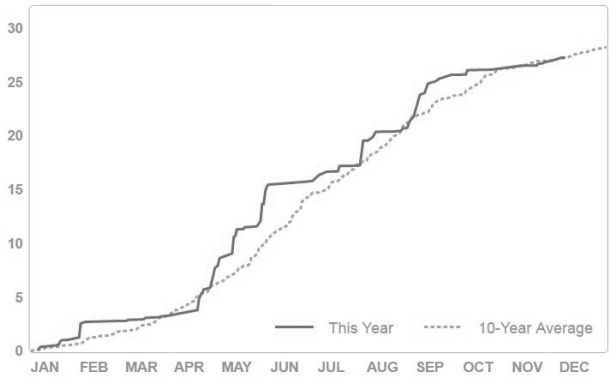
Comparing Two Starter Fertilizers and an Untreated Check on Corn

Study ID: 441035201602
County: Clay
Soil Type: Hastings silt loam 0-1% slope; Crete silt loam 0-1% slope; Fillmore silt loam frequently ponded
Planting Date: 5/6/16
Harvest Date: 10/21/16
Population: 34,000
Row Spacing (in): 30
Hybrid: DeKalb 60-69 RIB
Reps: 4
Previous Crop: Soybean
Tillage: No-Till
Herbicides: Lexar®, Roundup PowerMAX®, ClassAct® on 5/15/16
Seed Treatment: Acceleron® 250
Foliar Insecticides: None
Foliar Fungicides: None
Fertilizer: 61 lb/ac 11-52-0, 5 lb/ac zinc, 15 lb/ac sulfur in fall 2015; 146 lb/ac 46-0-0 on 4/15/16; 100 lb/ac 32-0-0 through pivot
Irrigation: Pivot, Total: 7.2
Rainfall (in):



Soil Sample:

								Ammonium Acetate ---------ppm--------					DTPA ---------ppm---------			
Soil pH 1:1	Buffer pH	Soluble Salts 1:1 mmho/cm	Excess Lime Rating	OM LOI-%	Nitrate-N ppm N	0-8" Nitrate-N Lbs N/A	Phos ppm	K	Ca	Mg	Na	S	Zn	Fe	Mn	Cu
5.6	6.6	0.14	NONE	2.2	7	17	35	453	1490	229	16	12	0.6	54.0	14.0	0.6

Introduction: The objective of this study is to determine if in-furrow starter fertilizers would affect yield, even when soil test P levels are high. Two starter fertilizer products were compared to an untreated check. The two starters used were: 10-34-0 at 6 gal/acre (7 lb/acre actual N and 24 lb/acre actual P) and 9-24-3 at 3 gal/acre (3 lb/acre actual N, 8 lb/acre actual P, and 1 lb/acre actual K). The starter fertilizer was applied in-furrow.

Results:

	Harvest Stand Count	Stalk Lodging (%)	Test Weight (lb/bu)	Moisture (%)	Yield (bu/acre)†	Marginal Net Return‡ ($/ac)
Check	32,500 A*	35 A	62 A	17.1 B	242 A	$738.10
Starter (6 gal 10-34-0)	31,000 A	35 A	62 A	17.3 A	241 A	$717.22
Starter (3 gal 9-24-3)	32,000 A	49 A	62 A	17.8 A	243 A	$724.65
P-Value	0.7182	0.2124	0.812	0.0174	0.2192	N/A

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre corrected to 15.5% moisture.
‡Marginal net return based on $3.05/bu corn, $17.83/ac product cost for 10-34-0, and $16.50/ac product cost for 9-24-0.

Summary: Soil test P levels were high and 61 lb/acre of 11-52-0 was applied the previous fall, amounting to 32 lb of P_2O_5/acre. The starter fertilizer products did not result in differences in stand, stalk lodging, test weight, or yield. This is consistent with previous research which has documented that when soil test P levels are adequate, there is little chance of yield response to starter fertilizer. The two starter treatments did increase grain moisture at harvest. Due to additional product costs, the check resulted in the highest marginal net return.

Sponsored by: University of Nebraska Lincoln; Nebraska Corn Board

In Partnership with: Nebraska Soybean Checkoff; Nebraska Corn Growers Association; Nebraska Dry Bean Commission