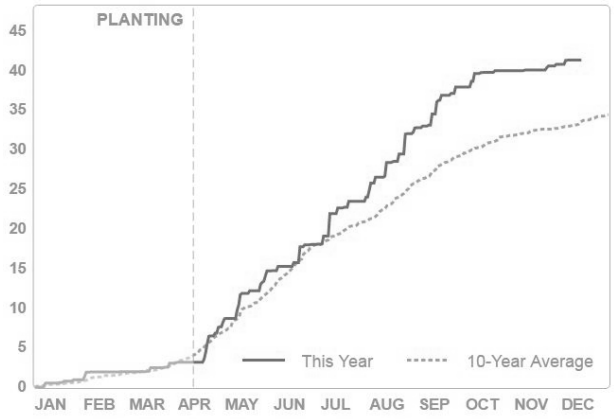
10-34-0 Starter Fertilizer on Rainfed Corn

Study ID: 030109201601
County: Lancaster
Soil Type: Aksarben silty clay loam 6-11% slopes; Aksarben silty clay loam 2-6% slopes
Planting Date: 4/11/16
Harvest Date: 9/26/16
Population: 30000
Row Spacing (in): 30
Hybrid: Dekalb 62-98
Reps: 8
Previous Crop: Soybean
Tillage: No-Till
Herbicides: 4 pt/ac Halex® GT
Foliar Insecticides: None
Foliar Fungicides: None

Fertilizer: 160 lb/ac actual N as fall applied NH3
Irrigation: None
Rainfall (in):



Soil Test: (Soil was sampled on a 2.5 acre grid. The following eight samples were within the area of the research study. These points are not correlated to each replication or treatment strip.)

O.M.	C.E.C.	Ca	pH	BpH	Mg	P1	P2	K	S	Zn
--%--		ppm			Ppm	----------ppm----------				
2.4	28.70	2757	5.4	6.3	687	16	25	368	14	0.9
3.2	26.50	3272	6.3	6.6	746	44	98	420	16	1.3
2.3	32.30	3093	5.4	6.2	820	12	19	309	12	0.4
2.2	30.30	3195	5.7	6.4	845	16	38	356	10	0.4
2.2	25.70	2432	5.3	6.2	586	10	21	269	14	0.3
2.1	28.20	2733	5.4	6.3	689	9	15	298	13	0.3
2.3	27.10	2178	5.0	6.0	545	14	18	220	14	0.4
2.0	23.90	2288	5.3	6.3	523	16	26	273	14	0.4

Approximately 27 ton/ac bio-solids were applied in fall 2013 for the 2014 corn crop; this resulted in approximately 130 lb N/ac applied.

Introduction: The objective of this study was to determine if using 5 gal/acre of 10-34-0 starter fertilizer (6 lb/acre actual N and 20 lb/acre actual P) at planting resulted in higher yield and profit.

Results:

	Moisture (%)	Yield (bu/acre)†	Marginal Net Return‡ ($/ac)
Check	17.5 A*	219 A	667.95
Starter (5 gal 10-34-0)	17.3 B	219 A	652.20
P-Value	0.0035	0.8844	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 and $15.75/ac starter fertilizer cost.

Summary: There was no yield difference between the starter treatment and the unfertilized check. Due to the additional starter fertilizer cost, the check was more profitable.

Sponsored by: University of Nebraska Lincoln; Nebraska Corn Board

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