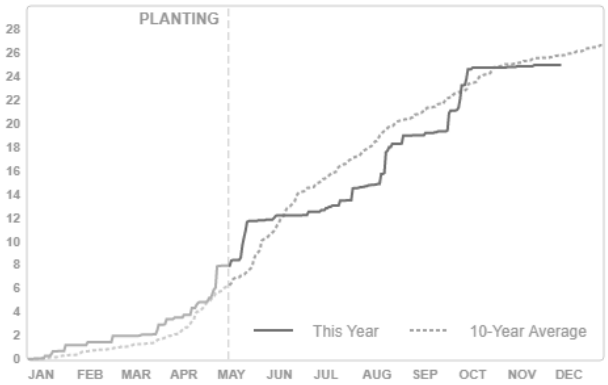
Starter Fertilizer on Irrigated Corn

Study ID: 708077201701
County: Greeley
Soil Type: Gates silt loam; Hersh fine sandy loam
Planting Date: 5/8/17
Harvest Date: 11/15/17
Population: 31,000
Row Spacing (in): 30
Hybrid: DKC 61-55
Reps: 4
Previous Crop: Soybean
Tillage: No-Till
Herbicides: ***Pre:*** 16 oz/ac 2,4-D LV4 and 24 oz/ac Durango® DMA® on 4/18/17 ***Post:*** 3 qt/ac Lexar® EZ and 24 oz/ac Durango® DMA® on 6/15/17
Foliar Insecticides: None
Foliar Fungicides: None

Fertilizer: 52 lb/ac N as 32% UAN on 4/22/17; 150 lb/ac P and 80 lb/ac K on 4/29/17; 120 lb/ac N and S (28-0-0-6) applied through fertigation
Irrigation: Pivot
Rainfall (in):



Soil Tests (spring 2014):

OM	pH	BpH	CEC	Bray P1	Bray P2	K	Mg	Ca	NO_3	S	Zn	K	Mg	Ca	H
%				----------ppm----------								----------%----------			
0.7	5.4	6.7	8.4	49	64	175	159	843	8	15	1.5	5.3	15.8	50.2	28.7
0.6	5.8	6.8	6.9	41	54	151	157	783	4	13	1.6	5.6	19	56.7	18.7
0.7	5.6	6.7	8.5	51	61	147	186	920	6	7	1.3	4.4	18.2	54.1	23.3
0.5	5.5	6.7	6.7	56	63	143	136	691	4	7	1.2	5.5	16.9	51.6	26
1.2	7.6	7.1	17.2	26	137	257	364	2699	9	9	1.4	3.8	17.6	78.6	0
1.0	6.1	6.8	10.6	44	66	201	222	1349	7	7	1.6	4.9	17.5	63.6	14

Introduction: The purpose of this study was to evaluate starter fertilizer on corn production. The starter fertilizer included 5 gal/ac 10-34-0 and 1 qt/ac Zn. The starter treatment was compared with a no starter check.

Previous on-farm research on starter fertilizer on corn found that for soils with phosphorus levels <10 ppm, an increase of 12 bu/ac was realized due to starter, for soils with phosphorus levels of 10-20 ppm, an increase of 3 bu/ac was realized, and for soils with phosphorus levels of 20-30 ppm, only 1 bu/ac yield increase was realized due to starter fertilizer (https://go.unl.edu/starter). Studies have shown there can be an early growth and yield response from N in an N-P starter fertilizer (https://go.unl.edu/starterfert).

Results:

	Test Weight	Moisture (%)	Yield (bu/acre)†	Marginal Net Return‡ ($/ac)
Check	60 A*	16.8 A	201 B	633.89 A
Starter (5 gal 10-34-0 + 1 qt Zinc)	60 A	16.7 A	214 A	658.87 A
P-Value	0.607	0.718	0.041	0.141

*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 $3.15/bu corn and $16.41/ac cost for starter products.

Summary:

- There was no difference in moisture or test weight between the starter fertilizer and the check.
- The starter fertilizer resulted in a yield increase of 13 bu/ac.

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