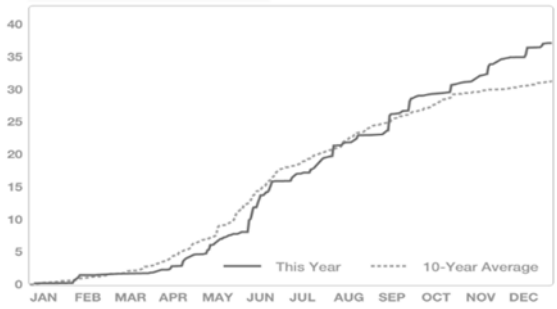
Nebraska On-Farm Research Network

Foliar Micronutrients on Corn

Study ID: 192121201501
County: Merrick
Soil Type: Cozad loam; Alda loam; Platte-Gothenburg complex;
Planting Date: 4/25/15
Harvest Date: 11/9/15
Population: 32,000
Row Spacing (in.) 36
Hybrid: Unknown
Reps: 6
Previous Crop: Unknown
Tillage: Minimum Till
Herbicides: 2 qt/ac Keystone
Seed Treatment: Unknown

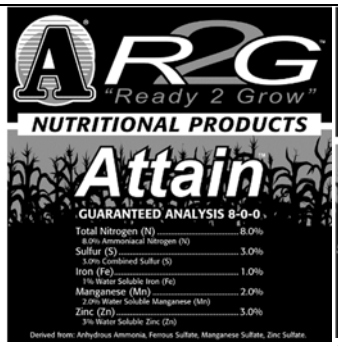
Foliar Insecticides: Unknown
Foliar Fungicides: Unknown
Fertilizer: Unknown
Irrigation: Gravity, Total: Unknown
Rainfall (in.):



Soil Sample:

Depth	O.M.	pH	C.E.C.	Total NO3	P Bray 1	P Bray 2	K	Mg	Ca	S	Zn	Mn	Fe	Cu	B
	--%--			---lb/ac---	----------ppm----------										
0-8"	2.7	7.1	14.1	47.3	45.0	99.4	595	301	1983	36.6	4.1	6.8	14.3	0.4	0.9

Introduction: This study is looking at the effect of foliarly-applied Attain (N, S, Fe, Mn, Zn) and N-Cline Slow Release Nitrogen (28-0-0) on corn yield and nutrient concentrations in leaf tissue samples. The foliar treatment used in this study was applied at a rate of 1.0 qt/ac, tank mixed with N-Cline which was applied at a rate of 1.0 gal/ac, and was applied with a high clearance applicator on June 23rd at the V7 growth stage. Leaf samples were collected from treated and untreated strips approximately 1 month after application and analyzed for nutrient concentrations. Yields from treated and untreated strips were recorded with a yield monitor.



Product information from:
http://www.kellysolutions.com/erenewals/documentsubmit/KellyData/ND%5CFertilizer%5CProduct%20Label%5CATTAIN_8_0_0_5_9_2013_12_17_32_PM.pdf

Product information from:
http://www.kellysolutions.com/erenewals/documentsubmit/KellyData/ND%5CFertilizer%5CProduct%20Label%5CN_CLINE_28_0_0_5_9_2013_12_17_46_PM.pdf

Results:	Yield (bu/ac)†	Marginal Net Return ($/ac)‡
Check	218 A*	$795.70
Attain + N-Cline	227 A	$806.93
P-Value	0.1249	N/A

†Bushels per acre corrected to 15.5% moisture.
*Values with the same letter are not significantly different at a 90% confidence level.
‡Net return based on $3.65/bu corn, $22/gal Attain, $8/gal N-Cline, and $8.12 ground application cost.

Plant Tissue Samples

	N	P	K	Mg	Ca	S	Na	Fe	Mn	B	Cu	Zn
	----------(%)----------							----------ppm----------				
Check	2.97 A	0.29 B	2.63 A	0.15 A	0.31 A	0.19 A	0.004 A	72 A	60 B	6 A	7.83 A	21 A
Attain + N-Cline	3.14 A	0.31 A	2.68 A	0.14 A	0.29 A	0.18 A	0.007 A	79 A	69 A	7 A	7.50 A	21 A
P-Value	0.2135	0.0812	0.7374	0.4838	0.5045	0.8417	0.3339	0.1767	0.0484	0.5007	0.6109	0.8717

Summary: While there was not a significant yield difference at the alpha level of 0.10, there was a 9.5 bu/ac increase for using the Attain + N-Cline treatment and the p-value was nearing significance (p=0.0.1249). Foliar samples showed phosphorus and manganese were significantly higher for the Attain + N-Cline treatment. Because two products were used together, it is not known which is responsible for potential yield differences.

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