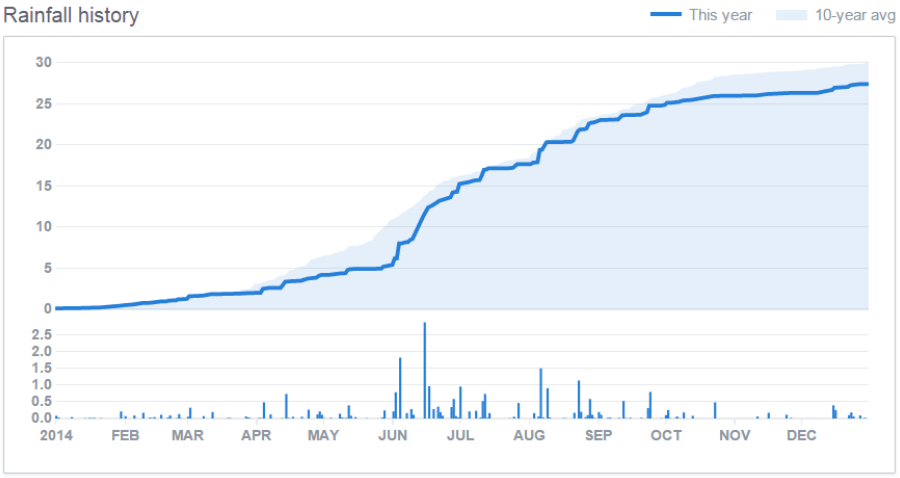
Nebraska On-Farm Research Network

Foliar Micronutrient Application on Corn

Study ID: 036139201401
County: Pierce
Soil Type: Thurman loamy sand
Planting Date: 4/29/2014
Harvest Date: Unknown
Population: 33,000 seeds/acre
Row Spacing: 30”
Hybrid: Pioneer 1266
Reps: 4
Previous Crop: Soybeans
Tillage: No-till

Herbicides: Pre: 1.5 qt/ac Cinch ATZ Lite 4/30/14
Post: 24 oz/acre Roundup PowerMAX on 5/22/14
2 oz/acre Callisto on 5/22/14
Insecticides/Fungicides: Poncho/VOTiVO and CruiserMaxx Seed Treatments
Fertilizer:
100 lbs MAP on 4/5/14
75 lbs Potassium chloride on 4/5/14
35 lbs actual N as Ammonium thiosulfate by pivot from 4/30 to 8/20
211 lbs actual N as UAN 32% by sprayer and pivot from 4/30 to 8/20
125 lbs 8-20-5-5-0.5 starter on 4/29/14

Irrigation: Pivot – Amounts unknown



Soil Test Values:

OM	pH	NO_3–N (0-4”)	NO_3-N (4-8”)	P Bray 1	P Bray 2	K	Mn	B	Zn
--%---		----------lbs/acre----------		----------ppm----------					
2.6	6.3	8	8	28 (H)	53 (VH)	301 (VH)	7 (L)	0.4 (VL)	2.1 (M)

*VH=Very High, H=High, M=Medium, L=Low, VL=Very Low

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Introduction: This study is looking at the effects of foliar fertilizers on corn yield and concentrations of nutrients in leaf tissue samples. Two foliar fertilizers were used in this study. Product 1 (analysis below) was applied at a rate of 1 qt/ac and product 2 (analysis below) was applied at a rate of 1 pt/ac. Both products were applied with a high clearance applicator at V13. Leaf samples were collected from treated and untreated strips approximately 1 month after application and analyzed for nutrient concentrations. Yields were harvested from treated and untreated strips and weighed using a weigh wagon.

Product 1:
Guaranteed Analysis
Sulfur (S) ……..3.6%
Boron (B) ……0.1%
Manganese (Mn)……3.0%
Zinc (Zn) ……4.0%

Product 2:
Guaranteed Analysis
Boron (B) ……8%

Results:

	Yield†	Plant Tissue Samples						Net Return ‡
		N	P	K	Mn	B	Zn	
	(bu/acre)	*----------(%)----------*			*----------(ppm)----------*			
Check	204 A*	2.73 A	0.34 A	2.58 A	58.75 A	7.75 A	17.75 A	$714.00
Foliar Treatment	203 A	2.86 A	0.34 A	2.53 A	53.50 A	6.50 A	22.75 A	$692.44
P-Value	*0.7168*	*0.1717*	*0.9360*	*0.6015*	*0.2774*	*0.1942*	*0.1036*	--

†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 $3.50/bu corn, $23.79/gal product 1, $31.93/gal product 2, and $8.12 ground applicator cost.

Summary: At this location, the foliar micronutrient treatments did not result in significantly different yields when compared to the non-treated areas. We looked at the tissue sample values for the nutrients applied in the foliar treatment (S, Mn, B, and Zn). There was no difference in plant tissue samples values for any of these nutrients. The cost of product and application was not recouped.

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