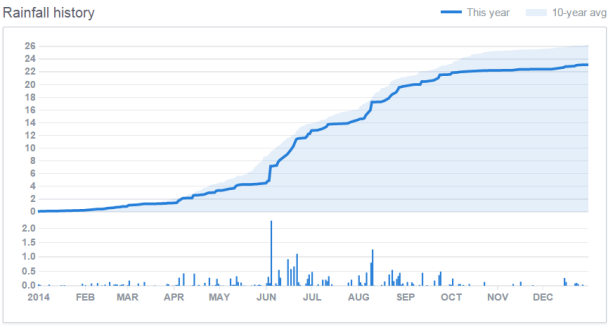
Nebraska On-Farm Research Network

Foliar Micronutrient Application to Corn

Study ID: 017003201404
County: Antelope
Soil Type: Thurman and Nora loamy sand
Planting Date: 4/27/2014
Harvest Date: 10/26/2014
Population: 32,000 seeds/acre
Row Spacing: 30”
Hybrid: 213-40 VT3
Reps: 4
Soil Test Values: Manganese: 5 (low), Boron: 0.3 (very low), Zinc: 5.9 (high)
Previous Crop: Corn
Tillage: Disk
Herbicides: Post (5/28/14): 1 pt/acre Atrazine
3.65 pt/acre Halex GT
12 oz/acre Roundup PowerMAX
Insecticides/Fungicides: Brigade 2EC and Headline EC through Pivot on 8/10/14

Fertilizer: 24 gpa 17-15-0-7 starter at planting
24-0-0-10 through pivot: 14 gpa on 6/9/14
UAN 32% through pivot: 14 gpa on 6/19/14
12 gpa on 7/2/14
14 gpa on 7/19/14
Note: Site was hailed at V3-4
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	S	Mn	B	Zn
---%---		----------lbs/acre----------		----------ppm----------						
1.3	6.1	6	1	19 (M)	26 (M)	74 (M)	10 (L)	5 (L)	0.3 (VL)	5.9 (H)

*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 fertilizer on corn yield and concentrations of nutrients in leaf tissue samples. The foliar fertilizer used in this study supplied S, B, Mn, and Zn and was applied at a rate of 2qt/ac aerially on July 10th. 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 collected from yield monitor data.

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

Results:

	Yield†	Plant Tissue Samples							Net Return‡
		N	P	K	S	Mn	B	Zn	
	(bu/acre)	*----------(%)----------*				*----------(ppm)----------*			
Check	202 A*	2.35 B	0.31 A	1.47 A	0.18 A	57.5 A	6.5 A	25.5 B	$707.00
Micronutrient	199 A	2.63 A	0.32 A	1.59 A	0.21 A	48.0 A	5.5 A	41.0 A	$675.10
P-Value	*0.7080*	*0.0454*	*0.8305*	*0.1257*	*0.1257*	*0.6308*	*0.7048*	*0.0614*	--

†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 foliar micronutrient, and $9.50/ac aerial application cost.

Summary: At this location, foliar micronutrient treatments were not significantly different than non-treated areas. We looked at the tissue sample values for the nutrients applied in the foliar treatment. There was no difference in plant tissue samples values for S, Mn, or B; however foliar micronutrient treatments had higher Zn levels in plant tissue than the check.

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