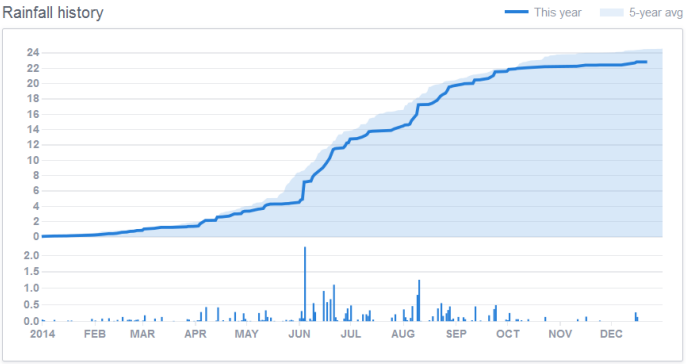
Nebraska On-Farm Research Network

Foliar Micronutrient Application on Corn

Study ID: 017003201401
County: Antelope
Soil Type: Thurman and Nora Loamy Sand
Planting Date: 4/27/2014
Harvest Date: 11/3/2014
Population: 32,000 seeds/acre
Row Spacing: 30”
Hybrid: Pioneer 1625 HR
Reps: 4
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: None

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
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----------						
1.4	6.2	6	2	18 (M)	22 (M)	83 (M)	10 (L0	6 (L)	0.3 (VL)	4.6 (H)

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

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

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 1qt/ac and was applied 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.

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Results:

	Yield†	Plant Tissue Samples							Net Return ‡
		N	P	K	S	Mn	B	Zn	
	(bu/acre)	*----------(%)----------*				*----------(ppm)----------*			
Check	202 B*	2.2 A	0.26 A	2.1 A	0.16 A	38.0 A	6.5 A	19.0 B	$707
Micronutrient	213 A	2.0 A	0.23 A	1.9 A	0.16 A	58.5 A	5.5 A	25.5 A	$730.05
P-Value	*0.0065*	*0.4795*	*0.1257*	*0.542*	--	*0.1955*	*0.7048*	*0.0489*	--

†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 aerial application cost.

Summary: At this location, the foliar micronutrient treatments had significantly higher yields than the 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 the foliar micronutrient treatments had higher Zn levels in plant tissue than the check. At this site, the increased yield more than covered the cost of application and resulted in higher net return for the foliar treated area.

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