



# Nebraska On-Farm Research Network

## Foliar Micronutrient Application on Corn

**Study ID:** 039155201403

**County:** Saunders

**Soil Type:** Yutan silty clay loam

**Planting Date:** 5/16/2014

**Harvest Date:** 11/13/2014

**Population:** 37,000

**Row Spacing:** 30"

**Hybrid:** Pioneer 1690 HR

**Reps:** 20

**Previous Crop:** Soybeans

**Tillage:** No-till

**Irrigation:** Pivot irrigated, amounts unknown

**Note:** Hailed mid-June, 14% damage

**Herbicides: Pre:** 13 oz/ac Verdict on 5/20/14

22 oz/ac Roundup PowerMAX on 5/20/14

**Post:** 0.6 oz/ac Armezon on 6/20/14

22 oz/ac Roundup PowerMAX on 6/20/14

**Insecticides/Fungicides:** Gaucho Seed Treatment

2 oz/ac Baythroid XL on 7/2/14

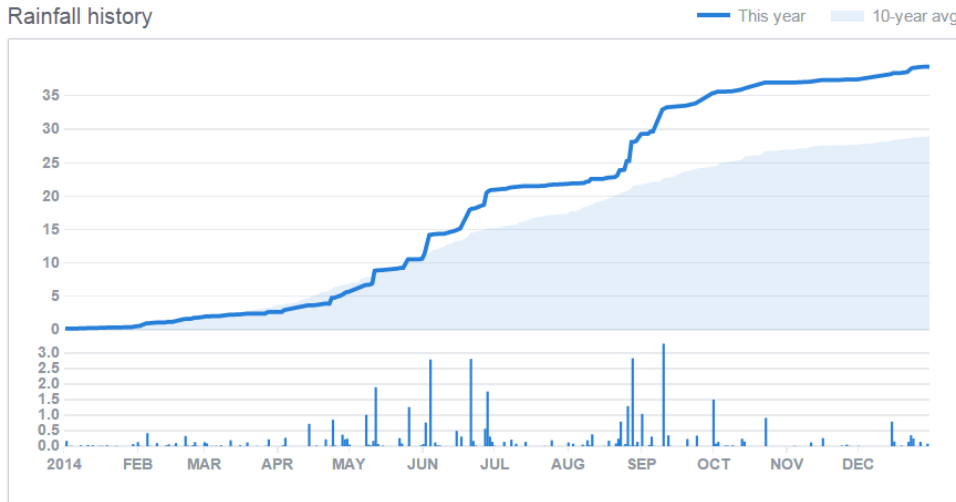
4 oz/ac Priaxor on 7/2/14

10 oz/ac Headline AMP on 8/8/14

**Fertilizer:** 160# N/acre as anhydrous ammonia, spring

2014. 20 gal/acre of 10-34-0 in furrow 2 x 2 on 5/16/14

Rainfall history



### Soil Test Values:

OM	pH	NO <sub>3</sub> -N (0-4")	NO <sub>3</sub> -N (4-8")	P Bray 1	P Bray 2	K	S	Mn	B	Zn
-%		-----lbs/acre-----		-----ppm-----						
2.3	6.0	4	4	24 (H)	43 (H)	219 (VH)	12 (L)	22 (H)	0.5 (L)	1.9 (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 1qt/ac and product 2 (analysis below) was applied at a rate of 1pt/ac. Both products were applied with a high clearance applicator on July 2rd. Applied strips were 100' wide and the sprayer only drove through the treated strips. 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.

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

<b>Product 2:</b>	
<b>Guaranteed Analysis</b>	
Boron (B) .....	8%

**Results:**

	Yield†	Plant Tissue Samples							Net Return ‡
		N	P	K	S	Mn	B	Zn	
	(bu/acre)	-----(%)-----			----- (ppm)-----				
<b>Check</b>	249 A*	2.49 A	0.23 A	2.10 A	0.18 A	81.5 A	4.63 A	17.8 B	\$871.50
<b>Foliar Treatment</b>	250 A	2.45 A	0.23 A	2.23 A	0.18 A	90.1 A	4.88 A	22.5 A	\$856.94
<b>P-Value</b>	0.5167	0.5825	0.6491	0.1538	0.1705	0.3590	0.7110	0.0003	--

†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 significantly increase yield 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 S, Mn, or B; however, the Max-In Ultra ZMB and Max-In Boron treatment had significantly higher plant tissue Zn levels. The cost of the product and application was not recouped.



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