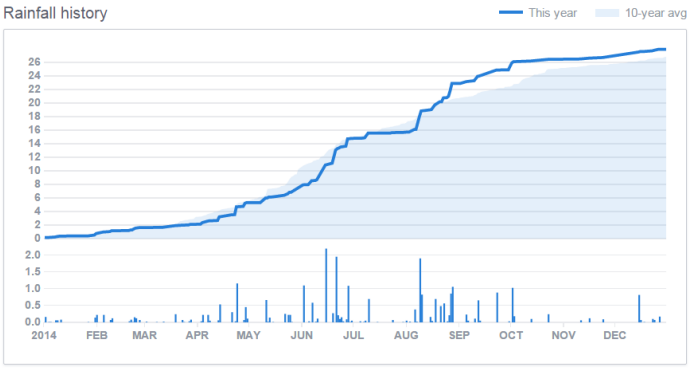
Nebraska On-Farm Research Network

Foliar Micronutrient Application on Corn

Study ID: 033099201401
County: Kearney
Soil Type: Boel fine sandy loam, Valentine loamy fine sand
Planting Date: Unknown
Harvest Date: 10/21/2014
Population: Unknown
Row Spacing: Unknown
Hybrid: Unknown
Reps: 4
Previous Crop: Unknown
Tillage: Unknown

Herbicides: **Pre:** Unknown
Post: Unknown
Insecticides/Fungicides: Unknown
Irrigation: Flood irrigated



Soil Test Values:

OM	pH	NO_3–N (0-4")	NO_3-N (4-8")	P Bray 1	P Bray 2	K	Mn	Zn
---%---		----------lbs/acre----------		----------ppm----------				
1.4	7.6	6	5	74 (VH)	175 (VH)	220 (VH)	3 (VL)	5.2 (H)

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

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 was applied at a rate of 5 fl oz/ac at V5 on June 12th with a high clearance applicator. Leaf samples were collected from treated and untreated strips approximately 2 months after application and analyzed for nutrient concentrations. Yields were harvested from treated and untreated strips and collected from yield monitor data.

Product:
Guaranteed Analysis
Available Phosphate (P_2O_5).....30.0%
Water Soluble Manganese (Mn).....8.0%
8.00% Chelated Manganese (Mn)
Water Soluble Zinc (Zn).....3.0%
3.00%Chelated Zinc (Zn)

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Results:

	Yield†	Plant Tissue Sample			Net Return ‡
		P	Mn	Zn	
	bu/acre	----%----	----------ppm----------		
Check	258 A*	0.27 A	61.9 A	18.4 A	$903.00
Foliar	258 A	0.29 A	49.8 B	17.1 A	$886.66
P-Value	*0.6870*	*0.5027*	*0.0539*	*0.2417*	--

†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, $8.22/acre foliar product, and $8.12/acre ground applicator cost.

Summary: At this location, the foliar micronutrient treatments were not significantly different in yield when compared to the non-treated areas. We looked at the tissue sample values for the nutrients applied in the foliar treatment (P, Mn, and Zn). There was no difference between the foliar applied treatment and the check for P or Zn; however the check had significantly higher Mn levels than the foliar micronutrient treated area. Overall, with no yield difference, the foliar micronutrient treatment resulted in a loss of $16.34/acre due to increased production costs.

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