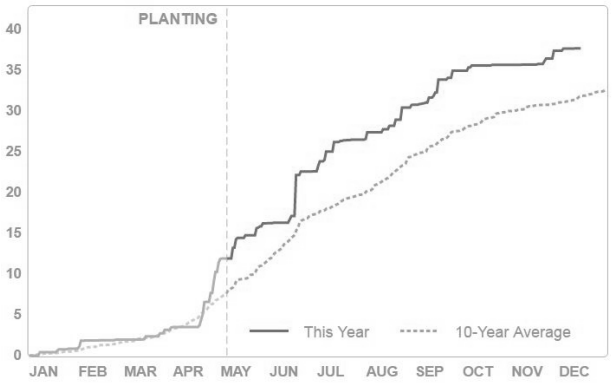
Sidedress Nitrogen Application with the Climate FieldView™ Advisor

Study ID: 359053201602
County: Dodge
Soil Type: Moody silty clay loam
Planting Date: 5/5/16
Harvest Date: 11/1/16
Population: 29,173
Row Spacing (in): 30
Hybrid: Croplan 6065VT2P/RIB
Reps: 4
Previous Crop: Soybean
Tillage: No-Till
Herbicides: ***Pre:*** Burndown: 24 oz/ac Roundup®, 1 oz/ac Vida, 10 oz/ac 2,4-D, 1 qt/100 gal Hel-Fire® on 4/16/16;
5 oz/ac Corvus®, 1 lb/ac Atrazine, 8 oz/ac 2,4-D on 5/6/16 ***Post:*** 1 pt/ac Soil Boost + AMS, 3 oz/ac Status®, 40 oz/ac Warrant®, and 32 oz/ac Roundup on 6/16/16
Seed Treatment: Amplify-D® Seed Treatment
Foliar Insecticides: 4 oz/ac Capture® LFR® with starter on 5/5/16; 3.2 oz/ac Lambda-Cy® Gold by plane on 7/12/16
Foliar Fungicides: 9 oz/ac Affiance® fungicide with post herbicide on 6/6/16; 10.5 oz/ac Quilt Xcel® fungicide and 3.2 oz/ac Lambdacy Gold + Crop Oil by plane on 7/12/16
Fertilizer: 75 lb N/ac as 32% (10%ATS) with herbicide; 5 gal/ac 6-24-6 starter and 3 pt/ac Mn, 0.5 pt/ac Ca, 10 oz/ac Soil X-CYTO® with starter and variable sidedress rates
Note: Fremont Biosolids were applied on this farm 3 years ago at 10 ton/ac.
Irrigation: None
Rainfall (in):



Introduction: The objective of this study was to evaluate the Climate FieldView™ Nitrogen Advisor Tool. Nitrogen Advisor is built on a detailed process model that takes into account the major physical, chemical, and biological processes that affect nitrogen in agricultural fields. The model takes into account a field's soil, weather and management conditions in order to make daily calculations of nitrogen gains, losses and transformations, all of which are specific to that field. The tool's calculated in-season N recommendation was 60 lb N/acre. To test this recommendation, three N treatments were used: the Climate FieldView rate, the Climate FieldView rate + 30 lb N/acre, and the Climate FieldView rate - 30 lb N/acre. Sidedress application treatments were made on June 10, 2016 with 32% UAN and 10% ATS. Additionally, 0.5 pt/acre Mn, 2 pt/acre B were included in the fluid fertilizer mixture. There was additional S, Mn, and B applied with the +30 lb N/acre rate and less with the -30 lb N/acre, which could confound the N rate treatments.

Results:

Sidedress N Treatment§	Harvest Stand Count (plants/ac)	Moisture (%)	Yield (bu/acre)†	Marginal Net Return‡ ($/ac)
Climate FieldView Rate - 30 lb N/ac (30 lb N/ac)	29,208 A	13.4 B	224 A	668.50
Climate FieldView Rate (60 lb N/ac)	29,167 A*	13.5 AB	226 A	659.90
Climate FieldView Rate + 30 lb N/ac (90 lb N/ac)	28,417 B	13.6 A	239 A	684.85
P-Value	0.0232	0.0723	0.2006	N/A

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre corrected to 15.5% moisture.
‡Marginal net return based on $3.05/bu corn and $0.49/lb nitrogen fertilizer.
§Sidedress rates are in addition to 78 lb N/ac already applied

Summary: There were minor differences in population and moisture. Although there were up to 15 bu/acre yield variations between treatments, they were not statistically significant due to variability in response. The recommended nitrogen rate using the UNL N rate calculator (pre-season model) was 117 lb N/acre and Climate FV Nitrogen Advisor recommended a total of 137 lb N/acre for the season. Therefore, the UNL N Rate and Climate FV Nitrogen Advisor recommended N rates were within 20 lb N/acre.

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