

CLIMATE NITROGEN MONITORING TOOL SUPPORT TRIAL

TRIAL OVERVIEW

- Climate FieldView™ provides in-season field-level N monitoring based on fertility applications, crop stage, soil type, and weather. This tool can provide assistance to farmers to help with proper N management and nitrogen use efficiency (NUE).

RESEARCH OBJECTIVE

- This study was conducted to help build confidence in and validate the utility of Climate FieldView Nitrogen Monitoring Tool.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Ypsilanti, ND	Silt Loam	Corn	Minimum	05/04/2016	10/20/2016	170	32,500
Bruning, NE	Silt Loam	Soybean	Conventional	05/13/2016	10/20/2016	240	32,000
Chester, SD	Silt Loam	Soybean	Minimum	04/16/2016	10/15/2016	200	30,000
Redfield, SD	Silt Loam	Soybean	No-Till	04/28/2016	10/14/2016	200	32,000
Battle Creek, NE	Loamy Sand	Corn	Minimum	04/24/2016	10/26/2016		

SITE NOTES:

- Five locations across ND, NE, and SD. Irrigation was applied at the Bruning and Battle Creek, Nebraska locations.
- Two corn products were tested at each location. Total of 10 corn products ranging from a relative maturity of 82 to 117.
- Four N Treatments: *Check: No N applied *50 % N at planting + 50% N at growth stage V6. *50 % N at planting + Nitrogen Monitoring insights at growth stage V6. *100 % N at planting
- Nitrogen Monitoring Insights. The goal in using the Nitrogen Monitoring Tool was to determine how much N was needed and to adjust the rate so there was a surplus of 20 lbs of N available at black layer growth stage.
- N amounts were determined based on the yield goal selected for the area – 1 lb N for 1 bu/acre. Soil type, previous crop, and tillage practice are all accounted for when determining the yield goal and the amount of N to apply at individual locations.

UNDERSTANDING THE RESULTS

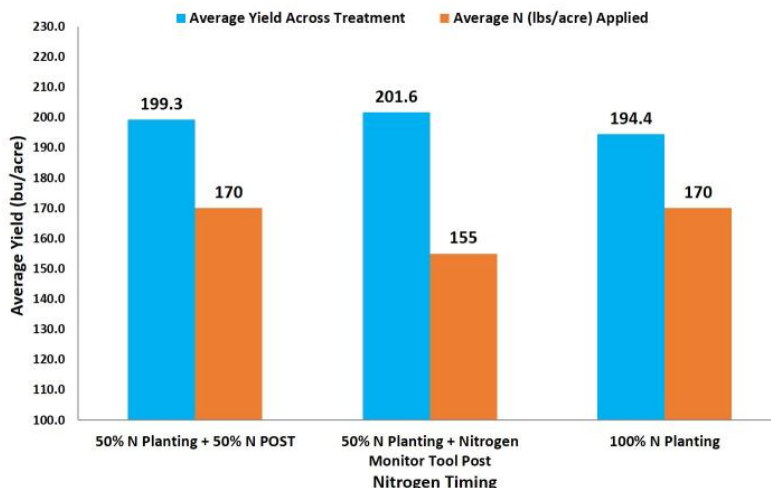


Figure 1. Yield response to nitrogen treatment across corn product relative maturities.



Table 1. Economic return of nitrogen treatments summarized across all corn products.

Nitrogen Treatment: Planting Time	Total Nitrogen Applied (lbs/acre)	Application Cost (\$/acre)	Cost Nitrogen/acre	Yield (bu/acre)	Income/acre (\$3.50)	Income/acre – Nitrogen Cost – Application Cost*	Nitrogen Use Efficiency (yield/ lbs N applied)	Net Return Difference from Check
0% N Applied (Check)	0	\$0	\$0	161.3	\$564.55	\$564.55	0	
50% N at Planting + 50% N POST	170	\$16	\$61.20	199.3	\$697.55	\$620.35	1.17	\$55.80
50% N Planting + Nitrogen Monitoring POST	155	\$16	\$55.80	201.6	\$705.60	\$633.80	1.30	\$69.25
100% N at Planting	170	\$8	\$61.20	194.4	\$680.40	\$611.20	1.14	\$46.65

*Application costs, commodity prices, and fertilizer costs are based on local retail and commodity pricing and individual rates/prices may vary.

- In this study, it was found that a split N application with half in the spring followed by a post application in-season when the crop is actively growing is more economical and efficient than applying 100% N at planting.
- Using the Nitrogen Monitoring Tool in combination with a split application provided the highest NUE (1.30).
- Using the Nitrogen Monitoring insights versus just a 50/50 split application resulted in applying 15 lbs less N which resulted in saving \$5.50/acre with a ROI of \$13.50/acre.

WHAT DOES THIS MEAN FOR YOUR FARM?

- Results from this trial highlight the value that Climate FieldView Nitrogen Monitoring Tool provides growers for in-season monitoring and management of corn products. In this study, similar trends of NUE and cost savings were observed across locations (3 states) with different environments, reinforcing that Climate FieldView is a wise investment for producers.
- The Nitrogen Monitoring Tool is a reliable source for predicting N needs in corn to help obtain maximum yield potential and economic return while minimizing environmental impacts.

LEGAL STATEMENT

For additional agronomic information, please contact your local brand representative. Developed in partnership with Technology, Development & Agronomy by Monsanto.

The information discussed in this report is from a multiple site, replicated demonstration. This information piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** All trademarks are the property of their respective owners. ©2017 Monsanto Company. 170110133809 021017AMH