



NITROGEN APPLICATION UTILIZING THE CLIMATE FIELDVIEW™ PRO NITROGEN MONITORING TOOL

TRIAL OVERVIEW

- Each year, farmers need to make important decisions about nitrogen (N) fertilization: the right source, right rate, right time, and right placement.
- Farmers typically apply a standard fertilizer rate before planting and adjust for corn-on-corn versus corn/soybean rotation, or adjust for yield target.
- The nitrogen monitoring tool by Climate FieldView™ Pro adjusts N forecasts based on factors including soil type, tillage, percent organic matter, cation exchange capacity, and yield target.

Table 2. Nitrogen Treatments Planned for Preplant and Sidedress

Treatment	Nitrogen Rates Planned for Preplant and Sidedress
1	175 lbs/acre Preplant applied per regional standard.
2	Based on Climate FieldView™ Pro nitrogen management tool all Preplant. At day of application, a target of 40 lbs N left at maturity was set in the Climate FieldView™ Pro nitrogen management tool.
3	115 lbs Preplant fb 60 lbs side dress at V5 growth stage.
4	115 lbs Preplant fb Climate FieldView™ Pro nitrogen management tool at V5 growth stage. At day of application, a target of 30 lbs N left at maturity was set in the Climate FieldView™ Pro nitrogen management tool.
5	145 lbs Preplant fb 30 lbs 360 Y-DROP® type nozzle at VT growth stage.
6	145 lbs Preplant fb Climate FieldView™ Pro nitrogen management tool with 360 Y-DROP® at VT growth stage. At day of application, a target of 20 lbs N left at maturity was set in the Climate FieldView™ Pro nitrogen management tool.

Table 1. Total Nitrogen (lbs/acre) Applied by Location.

Iowa Site	175 lbs @ Pre-Plant	Climate FieldView™ Pro N Monitoring Tool @ Preplant	115 lbs Preplant fb 60 Side Dress @ V5	115 lbs Preplant fb Climate FieldView™ Pro N Monitoring Tool @ V5	145 lbs Preplant fb 30 lbs by the 360 Y-DROP® @ VT	145 lbs Preplant fb Climate FieldView™ Pro N Monitoring Tool by 360 Y-DROP® @ VT
Atlantic	175	215	175	205	175	190
Huxley	175	225	175	185	175	180
Manchester	175	150	175	150	175	145
Storm Lake	175	165	175	155	175	145
Williamsburg	175	155	175	150	175	145

fb = followed by

RESEARCH OBJECTIVE

- This study was developed to provide information for farmers on how the Climate FieldView™ Pro nitrogen monitoring tool may assist farmers in managing their nitrogen application and usage in the most profitable way when compared to local standards.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Atlantic, IA	Silty Clay Loam	Soybean	Reduced	04/16/2016	10/04/2016	220	36,000
Huxley, IA	Loam	Soybean	Conventional	04/18/2016	10/18/2016	220	34,000
Manchester, IA	Loam	Soybean	No-till	04/25/2016	10/19/2016	220	36,000
Storm Lake, IA	Silty Clay Loam	Soybean	Conventional	05/01/2016	10/03/2016	220	36,000
Williamsburg	Silty Clay Loam	Soybean	Conventional	04/24/2016	10/04/2016	220	34,000



SITE NOTES:

- A 108 RM SmartStax® RIB Complete® corn blend product was planted in 30-inch rows. Standard pre- and post-emergent herbicides were used, and individual trials were set up as strip trials without replication at each location.

UNDERSTANDING THE RESULTS

Table 3. Average N and Revenue by Treatment.

Treatment	Trt #1 175 lbs @Preplant	Trt #2 N Monitoring Tool @Preplant	Trt #3 115 lbs Preplant fb 60 lbs Sidedress @ V5	Trt #4 115 lbs Preplant fb N Monitoring Tool @ V5	Trt #5 145 lbs Preplant fb 30 lbs with 360 Y-DROP® @ VT	Trt #6 145 lbs Preplant fb N Monitoring Tool with 360 Y- DROP® @ VT
Average Nitrogen Applied (lbs)	175	182	175	169	175	161
Average Revenue — N Cost	\$758.66	\$767.23	\$779.05	\$783.07	\$765.82	\$794.76

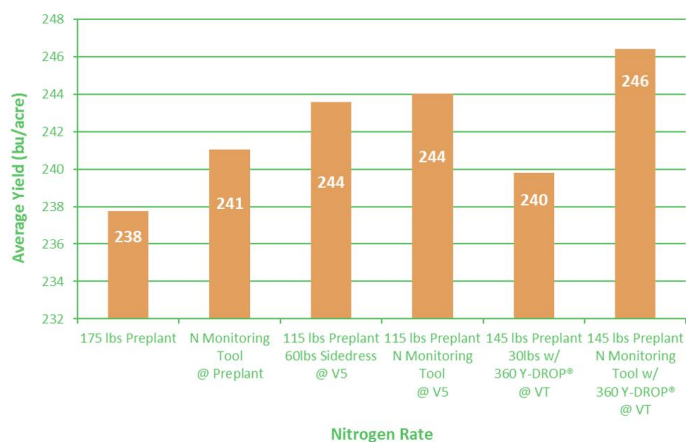


Figure 1. Average Yield by Location Calculated from Five Trial Locations.

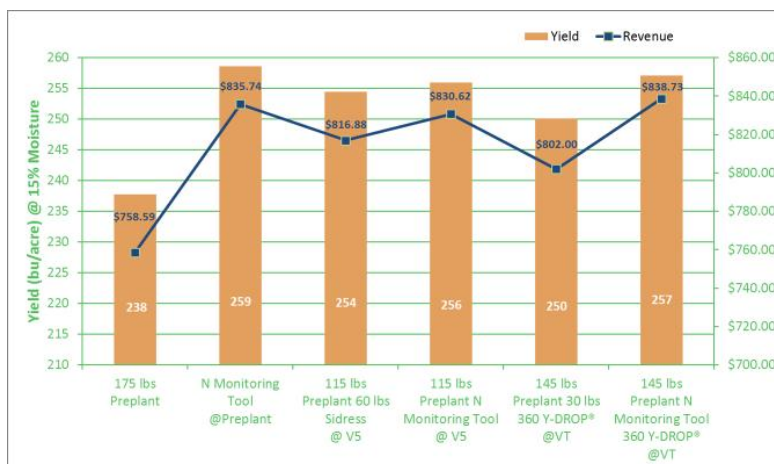


Figure 2. Yield (bu/acre) by Treatment at Storm Lake, IA. Total Pounds Per Acre Applied For Each Treatment Are Shown Inside Bars With Gross Revenue Minus N Costs in the Line Graph.

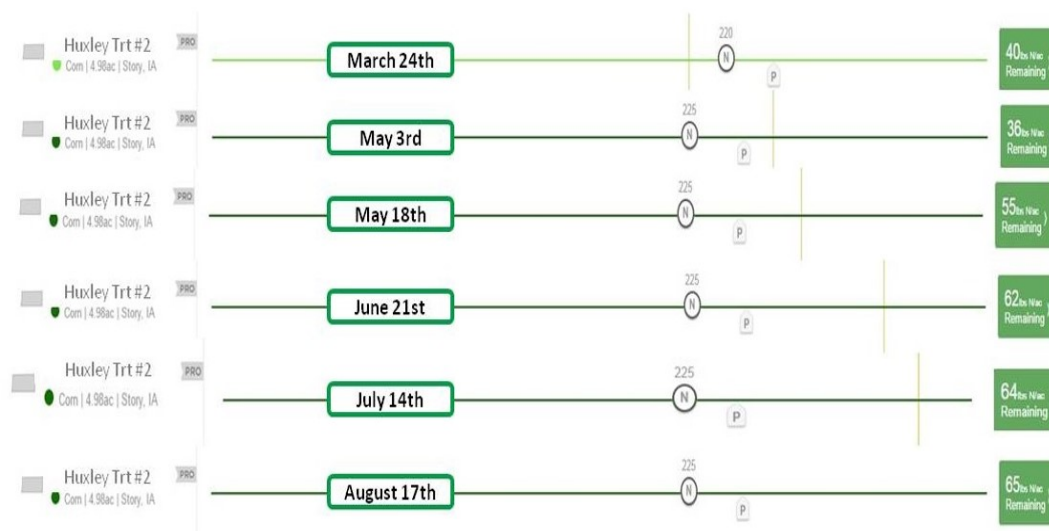


Figure 3. Screenshot of Climate FieldView™ Pro Nitrogen Monitoring Tool. Nitrogen remaining after each date is shown on the right for Treatment #2 at Huxley, Iowa.

- As the season progressed, the target for N remaining at maturity was lowered in treatments with Climate FieldView™ Pro nitrogen monitoring tool. This was due to the fact there would be less weather variable left in the model.

WHAT DOES THIS MEAN FOR YOUR FARM?

- Climate FieldView™ Pro nitrogen monitoring tool can help add value throughout the growing season.
- In a challenging year to research N, Climate FieldView™ Pro nitrogen management tool gave insights throughout the season at these five locations to improve potential profit (Table 3).
- As the growing season progressed, the Climate FieldView™ Pro nitrogen monitoring tool continued adjusting to current conditions and gave insights to apply, on average, 14 pounds less N on Treatment #6 while maintaining yield levels to push profitability greater than \$28/acre compared to Treatment #5.
- The nitrogen monitoring tool adjusted throughout the growing season as conditions changed (Figure 3).
- The starting target was an extra 40 lbs on March 24th. By the middle of August, conditions were favorable for increased mineralization which led to an increase of 25 lbs of N forecasted to remain at maturity.
- How can a nitrogen stabilizer be used to affect the results? - At the Storm Lake, IA location, N-Serve® nitrogen stabilizer was applied to the field. The nitrogen monitoring tool forecasted reduced rates of N in Treatments #2, #4, and #6 which led to greater profitability in all three comparisons at that location (Figure 2).
- Conditions by year and location may have variable effects on available nitrogen.

LEGAL STATEMENT

For additional agronomic information, please contact your local brand representative.

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