

TIMING OF NITROGEN APPLICATION

TRIAL OVERVIEW

- There is considerable interest in applying nitrogen (N) later in the growing season; therefore, farmers and agronomists want to know when is the best time to sidedress N in a later-season application.
- Because N is a major and required investment in corn production, knowing when corn plants are most responsive to an application of N can help farmers determine the application time for the best return on their investment.

RESEARCH OBJECTIVE

- To compare the effectiveness of different N application times during the growing season.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Monmouth, IL	Silt Loam	Corn	Conventional	04/25/2017	09/28/2017	290 bu/acre	36,000 seeds/acre

SITE NOTES:

- A 114 RM SmartStax[®] RIB Complete[®] corn blend product was utilized in the trial.
- Nitrogen in the form of 32% UAN (32-0-0) was used as the N source.
- 80 lbs/acre of N was applied before planting and incorporated.
- Nitrogen was sidedressed with a high-clearance sprayer using 360 Y-DROP[®] at an application rate of 100 lbs/acre with a urease inhibitor at three growth stages:
 - V4 (4 leaf collars) on 6/09/17
 - V8 (8 leaf collars) on 6/19/17
 - V12 (12 leaf collars) on 7/05/17
- The trial consisted of 3 replications.
- Data from 2016 was added for supporting information.

UNDERSTANDING THE RESULTS

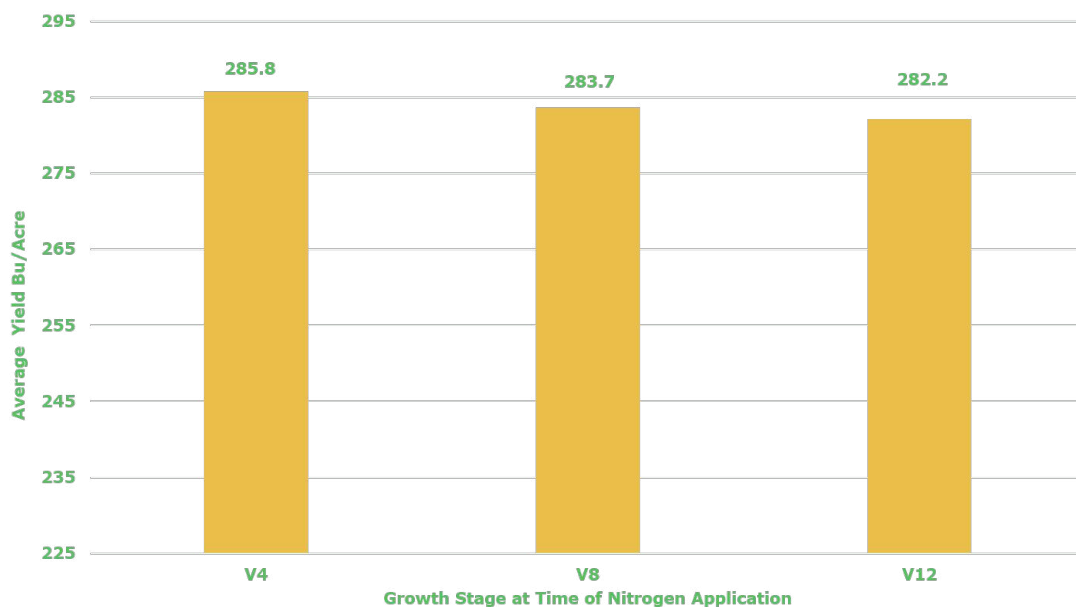


Figure 1. Average yield (bu/acre) response to nitrogen application timing in 2017 at Monmouth, IL (3 replications).

- Individual corn products may respond differently to the timing of an application of N.

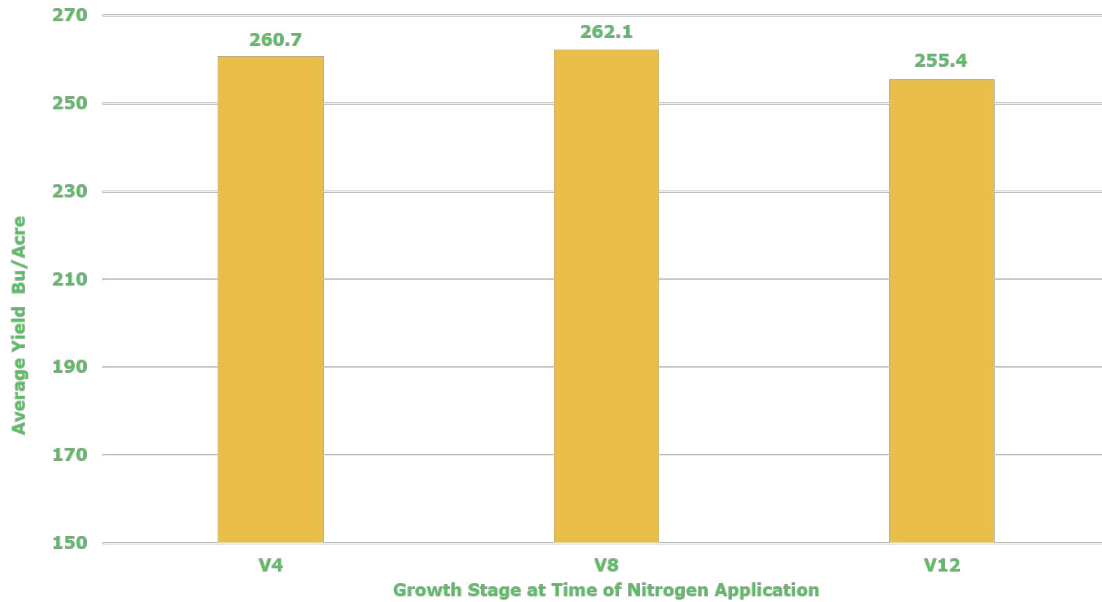


Figure 2. Two-year (2016 - 2017) average yield (bu/acre) response to nitrogen application timing at Monmouth, IL.

- The cost to potentially obtain greater yields, based on the timing of an application of N, may not be economically feasible when all costs are considered.
- The ideal timing of a later-season application could change yearly because of weather and environmental challenges.
- In 2016, the V8 application demonstrated a larger response (2016 response: V4 = 235.7, V8 = 240.4, and V12 = 228.7).² However, the average differences for the combination of 2016 and 2017 were minimal (Figure 2).

WHAT DOES THIS MEAN FOR YOUR FARM?

- Nitrogen applications later in the growing season have the potential to improve yields and reduce the potential for N loss through leaching and nitrification.¹
- Environmental conditions and the costs associated with N applications should be considered when making a N plan for each field.
- Use of 360 Y-DROP[®] for later growth season N applications can allow for greater flexibility in the timing of the application and use in taller corn.

SOURCES

1 Scharf, P.C. and Lory, J.A. 2006. Integrated Pest Management. Best management practices for nitrogen fertilizer in Missouri. IPM1027.

2 Timing of nitrogen sidedress application in corn. 2016. Demonstration Report. Monsanto Learning Center at Monmouth, IL.

LEGAL STATEMENT

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

Developed in partnership with Technology, Development & Agronomy by Monsanto.

Monsanto Company is a member of Excellence Through Stewardship[®] (ETS). Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. This product has been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Excellence Through Stewardship[®] is a registered trademark of Excellence Through Stewardship. **B.t. products** may not yet be registered in all states. Check with your Monsanto representative for the registration status in your state. **IMPORTANT IRM INFORMATION: RIB Complete[®]** corn blend products do not require the planting of a structured refuge except in the Cotton-Growing Area where corn earworm is a significant pest. SmartStax[®] RIB Complete[®] corn blend is not allowed to be sold for planting in the Cotton-Growing Area. See the IRM/Grower Guide for additional information. Always read and follow IRM requirements. **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.** Roundup Ready technology contains genes that confer tolerance to glyphosate, an active ingredient in Roundup[®] brand agricultural herbicides. Agricultural herbicides containing glyphosate will kill crops that are not tolerant to glyphosate. RIB Complete[®], Roundup Ready[®], Roundup[®] and SmartStax[®] are trademarks of Monsanto Technology LLC. LibertyLink[®] and the Water Droplet Design[®] is a registered trademark of Bayer. Herculex[®] is a registered trademark of Dow AgroSciences LLC. Respect the Refuge and Corn Design[®] and Respect the Refuge[®] are registered trademarks of National Corn Growers Association. All other trademarks are the property of their respective owners.

©2017 Monsanto Company All Rights Reserved. 171016095754 102617LGM

