



Timing of Nitrogen Sidedress Applications

Trial Objective

- There is considerable interest in applying nitrogen (N) later in the growing season; therefore, farmers and agronomists want to know the best time to sidedress N for a later-season application.
- Nitrogen is a major investment in corn production and knowing when corn plants are most responsive to a N application can help farmers determine the optimal application time for the highest return on their investment.
- The Bayer Learning Center at Monmouth, IL has been conducting trials over the past four years to evaluate the impact of N sidedress timing.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield (bu/acre)	Seeding Rate (seeds/acre)
Monmouth, IL	Silt loam	Corn	Conventional	4/25/19	10/9/19	250	36K

- 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.
- Before planting, 80 lb/acre of N was applied and incorporated.
- Nitrogen was sidedressed with a high-clearance sprayer using 360 Y-DROP® at an application rate of 100 lb/acre with a urease inhibitor at three growth stages:
 - V4 (four leaf collars)
 - V8 (eight leaf collars)
 - VT (tassel)
- The trial consisted of three replications.

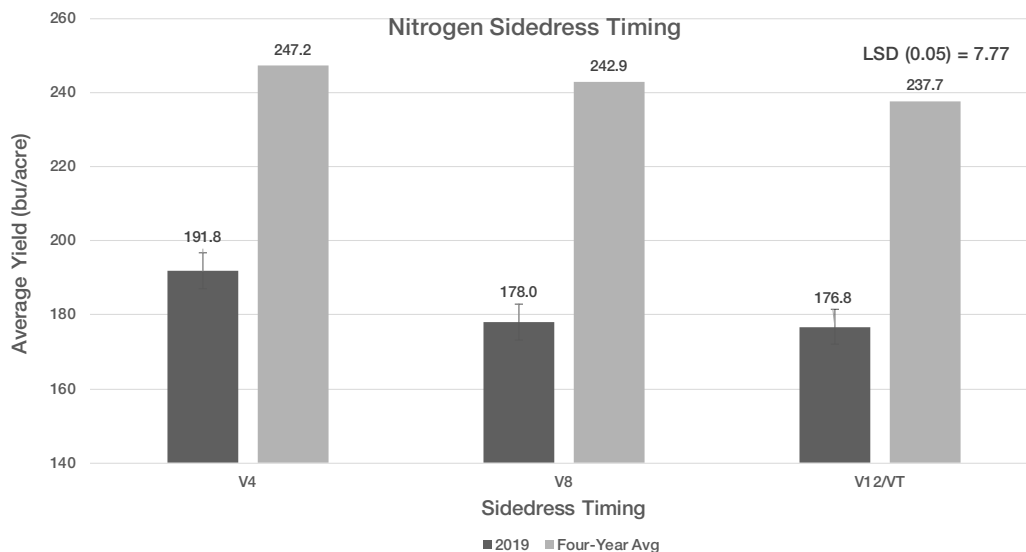


Figure 1. Average corn yield for 2019 and the four-year average for nitrogen sidedress application timing at the V4, V8, or V12/VT growth stage.



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Understanding the Results

- In 2019 at this location, sidedressing N at V4 resulted in significantly higher average yields than later timings.
- This result may have been due to the cold and wet conditions this spring limiting residue decomposition prior to planting. When temperatures increased after planting, rapid residue decomposition may have reduced N availability for the plants during the early season, as microbes utilize soil N as they decompose the residue.
- At this location, front-loading the N application resulted in higher average yields over the past four years.

Key Learnings

- Including 360 Y-DROP® facilitated timing flexibility and later application of N in taller corn.
- The ideal timing of later-season N applications can change from year to year due to weather and environmental conditions.
- The presence of residue from the previous crop can interact with N management practices and yield potential.
- Individual hybrids may respond differently to N application timing. Consult your local Field Sales Representative or Technical Agronomist for recommendations.

Legal Statements

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Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

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