TIMING OF NITROGEN SIDEDRESS APPLICATION IN CORN

TRIAL OVERVIEW

- There is substantial interest among farmers in mid-season nitrogen (N) application.
- N uptake by corn plants is usually greatest from V8 (8 leaf collars) growth stage through pollination and is weather dependent.
- Adequate N from V5 (5 leaf collars) through V8 growth stages can be critical as the plant is determining the number of potential ears and ear girth at this time.
- Sidedressing can help minimize N losses because N is applied closer to the time of plant uptake.
- N is a significant input cost. Determining when corn responds best to N sidedress application timing might contribute to maximizing net return.

RESEARCH OBJECTIVE

- The objective of the trial was to evaluate different timings for N sidedress applications.

<table>
<thead>
<tr>
<th>Location</th>
<th>Soil</th>
<th>Previous Crop</th>
<th>Tillage Type</th>
<th>Planting Date</th>
<th>Harvest Date</th>
<th>Potential Yield/Acre</th>
<th>Planting Rate/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monmouth, IL</td>
<td>Silt loam</td>
<td>corn</td>
<td>conventional</td>
<td>04/26/2016</td>
<td>09/20/2016</td>
<td>240 bu/acre</td>
<td>36,000 seeds</td>
</tr>
</tbody>
</table>

SITE NOTES:
- A 114 relative maturity SmartStax® RIB Complete® corn blend product was planted in all treatments.
- 80 lbs/acre of 32% UAN (32-0-0) was applied before planting in the spring and incorporated for all treatments.
- 100 lbs/acre UAN with a urease inhibitor was sidedressed using a high-clearance sprayer with 360 Y-DROP® at three different corn growth stages.
- Treatment timings were:
  - V4 (4 leaf collars) on June 3, 2016
  - V8 (8 leaf collars) on June 21, 2016
  - V12 (12 leaf collars) on July 5, 2016
- The trial had three replications.

UNDERSTANDING THE RESULTS

Figure 1. Average Yield by Timing of Sidedress Application.
2016 Monsanto Learning Center at Monmouth, IL.
Sidedress application at the V8 growth stage had the largest yield response in this study.

High clearance equipment with 360 Y-DROP® allows application timing flexibility and allows later application of N in taller corn.

WHAT DOES THIS MEAN FOR YOUR FARM?

- Ideal later season N application timing could vary from year to year due to weather and environmental conditions.
- Individual seed products may respond differently to timing of N application. Consult your local DSM or Technical Agronomist for timing recommendations.
- All costs should be considered when making N management decisions, as yield differences due to N sidedress applications may not be economically justified in all cases.

SOURCES


Figure 2. Percent of total N uptake for corn by growth stage. Source: Nitrogen data adapted from "How a corn plant develops". Special Report 48. Iowa State University.