Nitrogen Source in Corn

Chris Bruynis, Ohio State University Extension Educator, Ross County and Emily Bauman, Ohio State University ACRE Intern, Ross County

Objective
To determine the optimal source of nitrogen to be applied to corn at the V5-6 growth stage to produce the best economic return to inputs.

Background
Crop Year: 2017
Location: Bosh Valley Farms LLC
County/Town: Fayette/Washington Courthouse
Soil Type: Brookstone, Crosby, Celina
Drainage: Surface Only
Previous Crop: Soybeans
Tillage: Conventional
Planting Date: May 17, 2017
Nitrogen: 190 lb/ac
Seeding Rate: 36,000
Harvest Date: November 11, 2017

Methods
This was a randomized complete block design with three replications. A pre-plant application of 30 pounds of nitrogen per acre in the form of 28% UAN was applied to the whole field. Treatments consisted of four sources of nitrogen applied at the V5 growth stage: urea, 28% UAN, anhydrous ammonia, and Extreme N\(^1\). The plots with urea, anhydrous, and Extreme N were injected into the soil profile. The 28% UAN was applied with a slit/spray application. All treatments were applied to add an additional 160 pounds of nitrogen per acre for a total application of 190 pounds N/acre.

Results
Corn Yields based on Nitrogen Source

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield</th>
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<tbody>
<tr>
<td>Urea</td>
<td>225.57(^A)</td>
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<tr>
<td>UAN 28%</td>
<td>208.00(^B)</td>
</tr>
<tr>
<td>Anhydrous</td>
<td>230.84(^A)</td>
</tr>
<tr>
<td>Extreme N</td>
<td>240.08(^A)</td>
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</tbody>
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ANOVA p=0.10 Significant LSD 16.27

Summary
Results showed that yield differences in plots receiving Urea, Anhydrous, and Extreme N were not statistically significant. However, plots receiving 28% UAN had statistically significantly lower yield. In examining the application method and weather patterns following application, the yield difference could be due to application differences and not nitrogen source. This trial will be repeated in 2018 with the 28% being knifed into the soil profile to eliminate this potential factor.
Acknowledgement
The author expresses appreciation to Shane Sowers for his cooperation in conducting this research.

Xtreme-N Stabilized Nitrogen Fertilizer is a trademarked product at Precision Ag. Formulated precisely to our liking, Xtreme-N is a versatile urea nitrogen product with top notch stabilization traits.

For more information, contact:
Chris Bruynis
OSU Extension, Ross County
475 Western Ave., Suite F
Chillicothe, OH 45601
bruynis.1@osu.edu