Late Season Foliar Nitrogen Application for Corn Yield
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Objective
To determine the effects of foliar nitrogen on corn grain yield and profit.

Background
Crop Year: 2016
County: Fulton
Location: Wauseon, Ohio
Drainage: systematic, 50’ laterals
Previous Crop: Soybeans
Variety: Pioneer 0604
Seeding rate: 33,000 seeds per acre
Plant Date: May 21, 2016
Harvest Date: October 31, 2016
Herbicide: Acuron

Soil Type: Haskins loam, Rimer sand
Tillage: conventional
Soil Test (grid avg): pH 6.3
P 43 ppm (Bray-p1)
K 145 ppm
O.M. 2.8%
CEC 8.1 meq/100g
Starter Fertilizer: 70-20-90-5S-3B/acre

Methods
Two treatments were replicated three times in an alternating block design. Plots were 24 rows wide (60 feet) by 2200 feet long. The trial was planted, sprayed and harvested with commercial farm equipment. Prior to the foliar nitrogen treatment, both treatments had received 200 lbs of total nitrogen. Treatment 1 received 2.5 gallons per acre of CoRoN foliar nitrogen at tassel (VT) using commercial aerial application equipment. This treatment netted an additional 7 lbs of nitrogen and .15 lb of boron per acre. The untreated check received no additional foliar nitrogen. Yields and moistures were measured using a calibrated yield monitor and shrunk to 15% moisture. Rainfall data was recorded by farmer at field level.

Treatments:
1. Foliar CoRoN at VT – 2.5 gallon per acre (7 lbs N/acre)
2. Untreated check

Results

Table 1. Foliar N application in Corn at VT

<table>
<thead>
<tr>
<th>Nitrogen Application and Source**</th>
<th>Yield (bu/ac)</th>
<th>System Application Cost ($/ac)*</th>
<th>Return Minus Application Cost ($/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoRoN - 2.5 gal/ac</td>
<td>211.5 a</td>
<td>$18.55</td>
<td>$722</td>
</tr>
<tr>
<td>Untreated check</td>
<td>208.0 a</td>
<td>-</td>
<td>$728</td>
</tr>
<tr>
<td>LSD (P&lt;.05, CV 2.6)</td>
<td>19.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Based on $12.30 aerial application, $2.50/gal product cost and $3.50/bu corn (Source: 2016 Ohio Farm Custom Rates)
Discussion
There was no statistically significant difference for yield between the foliar nitrogen treatment and the untreated check in this 2016 trial. A standard economic calculation shows that the untreated check was more profitable at $728 per acre.

Further data in the former multi-year replications will add to the validity of these results.

Acknowledgement
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