Adding Sulfur and Zinc to Starter Fertilizer for Corn
Steve D. Ruhl, Agriculture and Natural Resources Extension Agent

Objective

To evaluate the effect of adding sulfur and zinc to row starter fertilizer on yields of corn.

Background

Cooperator: Tom Weiler
County: Morrow
Nearest town: Chesterville
Soil Type: Sloan silty clay loam
Previous Crop: Soybeans
Drainage: Naturally well-drained
Tillage: Conventional
Soil Test: pH 7.0, P 23 ppm, K 154 ppm
County: Morrow
Herbicides: PRE: Atrazine (1.5 lb/A), Balance (1 oz/A)
Nearest town: Chesterville
Soil Type: Sloan silty clay loam
Previous Crop: Soybeans
Drainage: Naturally well-drained
Tillage: Conventional
Soil Test: pH 7.0, P 23 ppm, K 154 ppm

Methods

This study is a split-planter design comparing starter fertilizer with starter fertilizer plus 4.1 lbs. per acre of sulfur and 0.22 lbs. per acre of zinc. The treatments were replicated four times. The size of each treatment plot was 3/10 of one acre (12 rows times 435 feet in length). The starter fertilizer used in the study was 20 gallons per acre (N 9.5 lbs., P2O5 22.5 lbs., and K2O 4.1 lbs.). The entire treatment area was harvested and weighed using a weigh wagon.

Results

Table 1. Starter Fertilizer Treatments

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Yield (bu/A)</th>
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</thead>
<tbody>
<tr>
<td>Starter Fertilizer</td>
<td>197.5</td>
</tr>
<tr>
<td>Starter Fertilizer plus S and Z</td>
<td>195.2</td>
</tr>
<tr>
<td>F = 1.7</td>
<td>NS</td>
</tr>
<tr>
<td>CV = 1.3%</td>
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Summary and Notes

Some companies are advocating the use of zinc and sulfur to increase yields of corn. This increases the cost of production and further limits the profit per acre. University studies previously conducted only support the use of zinc and sulfur under special soil conditions (low organic matter, soils high in pH and available phosphorus, mucks, or some peats). Plant analysis and field tests are ways to tell if the corn is responsive to these micronutrients. In this one-year, one-site study, the addition of zinc and sulfur to the starter fertilizer did not increase yields.

Acknowledgment
For additional information, contact:       Steve Ruhl
                                             The Ohio State University Extension
                                             ruhl.1@osu.edu