Aspire® Cotton Sidedress Study

Objective
- Evaluate the yield response of cotton to various preplant applications of potassium (K) and boron (B) sources: [1] MOP (0-0-60), [2] MOP + Granular B, [3] Aspire® (0-0-58-0.5B) compared to preplant + sidedress applications of K + Granular B.

Introduction
- Preplant applications of MOP are a common practice in cotton production. Additionally, many growers add B to their preplant and sidedress blends.
- Cotton requires B in relatively large amounts compared to other plants. If not present, B is the micronutrient most likely to limit cotton production.
- Boron deficiency in cotton may cause a distorted, stunted terminal, abnormal uppermost leaves and aborted flowers (Fig. A).
- Aspire is the first-of-its-kind micronutrient-enhanced potash fertilizer. Manufactured using Nutriform® technology, Aspire premium potash combines K and B in each granule to help achieve uniform nutrient distribution.

Trial Details
Locations and Crop Management:
- CROP: Cotton (Gossypium hirsutum L.)
- YEAR: 2014
- DATA SOURCE: Field studies conducted by independent third-party researchers.
- EXPERIMENTAL DESIGN: Small-plot RCBD with 4 replications.
- CROPPING CONDITIONS: All trials conformed to local cropping practices.
  - Total K Applied: 90 lbs K₂O/ac
  - Total B Applied:
    - MOP: 0 lb B/ac
    - Aspire: 0.75 lbs B/ac
    - Granular B: 1.5 lbs B/ac
- Application Method: Broadcast
- Application Timing: Preplant (PP) Sidedress (SD)

Results

<table>
<thead>
<tr>
<th>Cotton Yield by Treatment</th>
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<tbody>
<tr>
<td>Rate:</td>
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<tr>
<td>lbs K₂O/ac</td>
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<tr>
<td>90</td>
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<tr>
<td>60 + 30</td>
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<td>90</td>
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Summary
- Cotton yields increased with applications of boron.
- A preplant application of Aspire (0.75 lbs B/ac) outyielded a preplant application of MOP by 146 lbs lint/ac.
- Even in situations of split application with 2 times as much B applied (preplant: 60 lbs K₂O/ac + 1.0 lbs B/ac | SD: 30 lbs K₂O/ac + 0.5 lbs B/ac), PP Aspire (90 lbs K₂O/ac + 0.75 lbs B/ac) increased yield by 101 lbs lint/ac.
- With only half as much boron applied, the preplant Aspire application (0.75 lbs B/ac) outyielded the preplant application of MOP + Granular B (1.5 lbs B/ac) by 44 lbs lint/ac.
- The higher yields with preplant Aspire compared to other treatments demonstrates the advantages of the uniform nutrient distribution of boron compared to traditional MOP + Granular B blends and split-application methods.

FIGURE A: Boron deficiency in cotton

LOCATIONS: 5 trials across regions of the U.S. (AL, GA, MS, NC, SC)