MicroEssentials® SZ™ Phosphorus Uptake (Greenhouse Trial)

Objective
• Quantify the increase of phosphorus uptake with MicroEssentials® SZ™ (12-40-0-10S-1Zn) applied to corn compared to DAP-based blends that supply the same rate of nitrogen, phosphorus, sulfur and zinc.

Overview
• Balanced crop nutrition is critical for corn production.
• MicroEssentials SZ supplies nitrogen, phosphorus, sulfur and zinc in one nutritionally-balanced granule.
• The MicroEssentials patented Fusion™ technology process creates a unique chemistry that results in increased nutrient uptake and crop yield compared to alternative sources.

Trial Details
CROP: Corn (Zea mays)
YEAR: 2013
LOCATION: Sabanci University, Turkey
DATA SOURCE: Dr. Ismail Cakmak
EXPERIMENTAL DESIGN: Pot trials conducted under greenhouse conditions on a clay loam soil.
CROPPING CONDITIONS:
Treatments:
• MicroEssentials SZ
• DAP + AS + ZnSO₄
• DAP + AS
• DAP

Study Details:
• All sulfur in the blend was supplied in the sulfate form.
• Fertilizers were homogeneously mixed with the soil, simulating broadcast incorporation.
• Corn above-ground dry matter and nutrient uptake were determined 20 days after planting.

Summary
• Corn phosphorus uptake was significantly higher for MicroEssentials SZ than any other treatment.
• MicroEssentials SZ increased P uptake by 28% compared to the DAP + AS + ZnSO₄ blend.
• MicroEssentials SZ resulted in a 100% phosphorus uptake increase compared to DAP and the DAP + AS blend.
• Through the MicroEssentials patented Fusion manufacturing process, nitrogen, phosphorus, sulfur and zinc are combined into one nutritionally balanced granule—creating a single source for balanced crop nutrition.
• The unique formulation of MicroEssentials SZ increases phosphorus uptake.

Phosphorus Uptake Rates by Source

<table>
<thead>
<tr>
<th>Treatment</th>
<th>P Uptake (mg P/plant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MicroEssentials SZ</td>
<td>4.07 A</td>
</tr>
<tr>
<td>DAP + AS + ZnSO₄</td>
<td>3.17 B</td>
</tr>
<tr>
<td>DAP + AS</td>
<td>2.08 C</td>
</tr>
<tr>
<td>DAP</td>
<td>1.93 C</td>
</tr>
</tbody>
</table>

Letters indicate statistically significant differences among treatments.

Increased P uptake with MicroEssentials SZ compared to DAP + AS + ZnSO₄.

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