A CASE FOR POLY4

- The state of Maranhão grew 950,000 hectares of soybean in 2017-2018 with a total production of 3 million metric tonnes.

- Potassium fertilizer is usually applied as an NPK blend at planting or as a straight K application broadcast before planting. The latter allows quicker planting operations.

- POLY4 is highly compatible with other fertilizers in NPK formulations.

- POLY4’s sustained nutrient delivery can make it particularly suitable for pre-plant applications.
**Trial Focus**
To compare the POLY4 0:18:18 blend’s performance to a standard 0:18:18 MOP-K blend applied at planting and pre-planting.

**Partner**
EMBRAPA

**Location**
Maranhão, Brazil

**Date**
2018

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**Improved Outputs with POLY4 Blend at Planting**
When fertilizer was applied at planting, soybean fertilized with the POLY4 blend had greater yield than the standard blend.

**Improved Nutrition with POLY4 Blend at Planting**
Soybean, fertilized with the POLY4 blend at planting, had greater grain K and S than soybean fertilized with the standard blend.

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<table>
<thead>
<tr>
<th>Treatments</th>
<th>Nutrients applied (kg ha⁻¹)</th>
<th>Timing</th>
<th>P₂O₅</th>
<th>K₂O</th>
<th>S</th>
<th>MgO</th>
<th>CaO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard blend (0:18:18)</td>
<td></td>
<td>Planting</td>
<td>90</td>
<td>90</td>
<td>28</td>
<td>0</td>
<td>89</td>
</tr>
<tr>
<td>POLY4 blend (0:18:18)</td>
<td></td>
<td>Planting</td>
<td>90</td>
<td>90</td>
<td>38</td>
<td>12</td>
<td>73</td>
</tr>
</tbody>
</table>

*All treatments received standard application of N and P fertilizer.*
**IMPROVED OUTPUTS WITH POLY4 APPLIED PRE-PLANTING**

When fertilizing pre-planting the POLY4 plan again had the highest yield increasing revenue by US$31/ha. It is worth noting that even though MOP + gypsum + kieserite supplied the same nutrients, POLY4 still achieved higher grain yield.

**IMPROVED NUTRITION WITH POLY4 APPLIED PRE-PLANTING**

POLY4 applied pre-planting had the greatest grain K. Pre-planting application of POLY4 or MOP + gypsum + kieserite improved grain S compared to MOP.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Timing</td>
</tr>
<tr>
<td>MOP</td>
<td>Pre-planting</td>
</tr>
<tr>
<td>POLY4</td>
<td>Pre-planting</td>
</tr>
<tr>
<td>MOP + gypsum + kieserite</td>
<td>Pre-planting</td>
</tr>
</tbody>
</table>

*All treatments received standard application of N and P fertilizer.*

**TRIAL FOCUS**

To compare the POLY4 0:18:18 blend’s performance to a standard 0:18:18 MOP-K blend applied at planting and pre-planting.

**PARTNER**

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Notes: 1) Statistical information on soybean production from Acompanhamento da safra brasileira de grãos – v.6, Companhia Nacional de Abastecimento; 2) 0:18:18 standard blend contained TSP, SSP, and MOP; 0:18:18 POLY4 blend contained TSP, MOP and POLY4; 3) Phosphorus application to pre-planting treatments was from MAP; 19 kg of urea applied to the planting treatments to match MAP-N input in pre-planting treatments; 4) Soybean price US$382/t.