TRIAL RESULTS

TOMATOES

BRAZIL (2014)
**TRIAL OBJECTIVE**

Evaluate POLY4 fertilizer options in comparison to other K sources.

**HIGHLIGHTS**

HIGHEST YIELD AND FRUIT NUMBERS WHEN USING POLY4 AS A K SOURCE

POLY4 BLENDS REMOVE EXCESS CALCIUM IN FAVOUR OF MAGNESIUM

POLY4 BLENDS INCREASE YIELD BY 3% AND FRUIT NUMBERS BY 7 %

BRIX, FIRMNESS, pH AND TITRATABLE ACIDITY IMPROVED WITH POLY4 BLENDS

**TRIAL DESIGN**

PARTNER: UNIVERSITY OF SÃO PAULO

LOCATION: BRAZIL

YEAR: 2014

- Brazil is the seventh largest tomato market in the world¹.
- South American tomato market is worth US$4.79 billion of which Brazil accounts for 66%¹.
- Tomatoes are a chloride sensitive crop that should respond to calcium.
- This trial was conducted in silty soils with in São Paulo state.

**TREATMENT TABLES**

### STRAIGHT TRIAL

<table>
<thead>
<tr>
<th>TREATMENTS</th>
<th>AVERAGE NUTRIENTS APPLIED IN TRIAL (kg ha⁻¹)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
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<tr>
<td>Control</td>
<td>281</td>
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<tr>
<td>MOP</td>
<td>281</td>
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<tr>
<td>SOP</td>
<td>281</td>
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<td>SOP-M</td>
<td>281</td>
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<td>POLY4</td>
<td>281</td>
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### BLEND TRIAL

<table>
<thead>
<tr>
<th>TREATMENTS</th>
<th>AVERAGE NUTRIENTS APPLIED IN TRIAL (kg ha⁻¹)</th>
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<tbody>
<tr>
<td></td>
<td>N</td>
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<tr>
<td>MOP</td>
<td>250</td>
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<tr>
<td>POLY4</td>
<td>250</td>
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STRAIGHT STUDY

YIELD

• In an NPK balanced trial, contribution of sulphur magnesium and calcium improves yield potential.

• Crop responses to calcium from POLY4 is seen to be supportive of a meaningful yield increase.

• Overall, POLY4 improved yields by 6% over the control and 3% over.

NUMBER OF TOMATOES
(No. of fruit plant)$^{1,2,3,4}$

• Increasing the number of fruits in the desired size category is essential for the salad market.

• POLY4 improved tomato numbers by 15% over the control and 3% over SOP-M which lacks calcium.

• The tomato crop clearly benefits from the additional nutrients supplied by POLY4.
**BLEND STUDY**

**YIELD**

- In this NPK, calcium and sulphur balanced trial we compared the POLY4 option to the commercial MOP blend.
- POLY4 blends outperformed its commercial MOP equivalent by 3%.
- Using POLY4 in blends led to a 3% increase in desirable large tomatoes over that achieved with commercial MOP blends.
- The multi-nutrient supply from POLY4 enhances the nutrient spectrum beyond the commercial option.

**NUMBER OF TOMATOES**

- Increasing the number of fruits is a prerequisite for meeting the fruit size category demanded by the market.
- POLY4 blends outperformed the commercial MOP equivalent by 7%.
- POLY4 blends increased fruit numbers in the desirable large size category by 6%.

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**Tomato yield**

- Large: 126.3
- Small: 111.7

**Number of tomatoes**

- Large: 63.6
- Small: 53.9

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Notes: 1) FAOSTAT 2017; 2) GENSTAT means; 3) Small = 50 – 60 mm diameter; Large = 60 – 80 mm diameter; 4) All treatments received 250 kg N ha\(^{-1}\) and 275 kg P\(_2\)O\(_5\) ha\(^{-1}\); 5) All treatments received 250 kg N ha\(^{-1}\) and 875 kg P\(_2\)O\(_5\) ha\(^{-1}\); 6) Made with MOP, Urea, TSP and SSP for 4:14:08 and 10:5:20; 7) Made with POL4, Urea and MAP for 4:14:8 and additional MOP for 5:2.5:10. Initial soil analysis pH 5.8, P 76 mg kg\(^{-1}\), K 101 mg kg\(^{-1}\), Ca 380 mg kg\(^{-1}\), Mg 96 mg kg\(^{-1}\), S 6 mg kg\(^{-1}\), CEC 4.28 meq 100g\(^{-1}\).