Growing RICE IN CHINA

A CASE FOR POLY4

- China is the largest rice producer in the world with 214 million tonnes of rice harvested in 2018 from 30 million hectares.
- Sichuan Province produces 2 million hectares of rice.
- Soil potassium (K) is often deficient in Sichuan. Soils are also sulphur (S) deficient in some areas.
- In 2017 rice yield compared to standard MOP-K, was increased by 7% when half of the potassium was replaced with POLY4.
- For this trial, three POLY4 inclusion ratios were tested with three cultivars.

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**IMPROVED GRAIN YIELD**

In a 2017 rice trial (Click here to read more), MOP + POLY4 (50:50) improved the yield by 7% compared to MOP with cultivar Rong18You1015. In 2018, three varieties (Rong18You1015, Nei6You103, and JingliangYou534) were tested at different inclusion rates. They tended to have the best performance when half of the K was supplied by POLY4. Across the three varieties there was a 4% increase on average between the 40% and 50% POLY4 inclusion rates.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Nutrient application rate (kg ha⁻¹)</th>
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<tbody>
<tr>
<td></td>
<td>K₂O</td>
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<tr>
<td>N + P (control)</td>
<td>0</td>
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<tr>
<td>MOP + POLY4 (60:40)</td>
<td>135</td>
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<tr>
<td>MOP + POLY4 (50:50)</td>
<td>135</td>
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<tr>
<td>MOP + POLY4 (40:60)</td>
<td>135</td>
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</tbody>
</table>

*All treatments received 150 kg N ha⁻¹ and 75 kg P₂O₅ ha⁻¹ from urea and MAP.*

**TRIAL FOCUS**

To identify the optimal inclusion rate of POLY4 for rice cultivars as an enhancement for MOP in fertilizer blends.

**PARTNER**

Soil and Fertilizer Institute, Sichuan Academy of Agricultural Science

**LOCATION**

Sichuan, China

**DATE**

2018

Notes: China data from FAOSTAT (2017); Sichuan data from China Statistical Yearbook 2013; MOP + POLY4 ratios are the proportion of potassium supplied from each source; pre-trial soil analysis: pH: 5.7, P : 12 mg kg⁻¹, K : 59 mg kg⁻¹, Ca : 2950 mg kg⁻¹, Mg : 650 mg kg⁻¹; S : 145 mg kg⁻¹; OM: 3%. Source: Soil and Fertilizer Institute, Sichuan Academy of Agricultural Science (2018), 19000-SAAS-19017-17 & 19000-SAAS-19020-18 (rice).