KEY FINDINGS
Improved crop emergence
21% marketable tuber yield increase compared to MOP + elemental S
Improved tuber dry matter

A CASE FOR POLY4

- Uttar Pradesh produced 15.3 million tonnes of potatoes in 2017 – 2018, which amounts to 30% of India’s total potato production.

- 45% of Indian soils are sulphur deficient.

- Low-chloride POLY4 is a good source of sulphate-sulphur delivering at the same time potassium, magnesium and calcium in one product.
**Trial Focus**

To compare the performance of table potatoes to POLY4 fertilization with MOP + elemental sulphur.

**Partner**

Sardar Vallabh Bhai Patel University of Agriculture and Technology (SVPUA&T)

**Location**

Bulandshahar

Uttar Pradesh

India

**Date**

2019

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**Better Crop Emergence**

Improved emergence and establishment can support subsequent potato yield. Higher plant emergence was observed 30 days after planting when POLY4 replaced MOP + S. The potato emergence continued to increase as more POLY4 but less MOP + S was added.

**Increased Marketable Yield**

Good K supply at the bulking stage is important for developing larger tubers. POLY4-fertilized crops had higher total yield and significantly higher marketable yield than MOP + S. At the recommended K₂O rate (100 kg ha⁻¹), POLY4 had 21% higher marketable yield. The POLY4-fertilized potatoes also had more tubers, and a higher proportion of these were marketable.

Higher yield achieved a revenue increase of US$460/ha.

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**Table: Nutrients applied (kg ha⁻¹)**

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Nutrients applied (kg ha⁻¹)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>K₂O</td>
</tr>
<tr>
<td>N + P (control)</td>
<td>0</td>
</tr>
<tr>
<td>MOP + S</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>150</td>
</tr>
<tr>
<td>POLY4</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>100</td>
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<td></td>
<td>150</td>
</tr>
</tbody>
</table>

*All treatments received 180 kg N ha⁻¹ and 80 kg P₂O₅ ha⁻¹ from urea and DAP.*
**TRIAL FOCUS**

To compare the performance of table potatoes to POLY4 fertilization with MOP + elemental sulphur.

**IMPROVED TUBER DRY MATTER**

Tuber dry matter is important for potato frying quality. Dry matter content was 18.9% with MOP + S compared to 19.6% with POLY4 at the recommended K₂O rate.

**LOCATION**

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Notes: 1) Background statistics from Indian Department of Agriculture, Cooperation and Farmers Welfare. Available at: http://agricoop.gov.in/sites/default/files/Monthly%20Report%20on%20Potato%20for%20June%202019%20v2.pdf. Accessed on 6-Aug-19; 2) Status of Indian Soils. The Sulphur Institute. Available at: https://www.sulphurinstitute.org/india/status.cfm. Accessed on 6-Aug-19; 3) Pre-trial soil analysis: pH: 7.6, 7 mg P kg⁻¹, 82 mg K kg⁻¹, 9 mg S kg⁻¹; 4) Non-line graph values are at the recommended K₂O rate of 100 kg ha⁻¹; 180 kg of N and 80 kg of P₂O₅ were applied via urea and DAP; S applied as elemental sulphur with bentonite as binder. Treatments applied at planting; 5) Cultivar used was Kufri Bahar; 6) Significance tested at 5% level with Genstat ANOVA; 7) Crop price of US$93/t.

Source: Sardar Vallabh Bhai Patel University of Agriculture and Technology (2019), 76000-SVPUA&T-76001-18 (Bulandshahar potato).