Growing Corn in Vietnam’s Central Highlands Region

KEY FINDINGS
12% yield improvement
Highest yield achieved with addition of more POLY4
Enhanced quality
Soil and environmental benefits

A CASE FOR POLY4

• In Dak Lak province corn (maize) is grown across nearly 115 thousand ha and occupies 48% of the corn area in the Central Highlands of Vietnam.

• Corn is cultivated on both steep, high land and on flat areas under rainfed condition.

• In Vietnam, sulphur (S) is quickly lost from soils due to leaching. Potassium and magnesium deficiencies are also significant in many areas.

• POLY4’s extended nutrient delivery profile provides K, sulphate-S, Mg and Ca throughout the life of the crop and supports resilience against leaching losses.

poly4.com
**IMPROVED YIELD**

Corn yield was improved with the POLY4 fertilizer plans. The highest yields were achieved after more POLY4 was added: MOP + POLY4 (40:60) had significantly higher yield than MOP.

Starch content was maintained among the treatments (mean of 72%).

**IMPROVED GRAIN WEIGHT**

Thousand grain weight was significantly improved with the 60% POLY4 inclusion.

**IMPROVED GROWTH**

POLY4 treatments (20% and 60% inclusion ratios) had significantly higher leaf area indices than MOP. Stem thickness was significantly increased with all POLY4 treatments.

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**TREATMENTS**

<table>
<thead>
<tr>
<th>Treatments</th>
<th>% K from POLY4</th>
<th>K₂O</th>
<th>S</th>
<th>CaO</th>
<th>MgO</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOP</td>
<td>0</td>
<td>120</td>
<td>60</td>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>MOP + POLY4 (80:20)</td>
<td>20</td>
<td>120</td>
<td>93</td>
<td>149</td>
<td>10</td>
</tr>
<tr>
<td>MOP + POLY4 (60:40)</td>
<td>40</td>
<td>120</td>
<td>125</td>
<td>178</td>
<td>21</td>
</tr>
<tr>
<td>MOP + POLY4 (40:60)</td>
<td>60</td>
<td>120</td>
<td>158</td>
<td>207</td>
<td>31</td>
</tr>
</tbody>
</table>

*All treatments received 150 kg N ha⁻¹ from urea, and 90 kg P₂O₅ ha⁻¹ 60 kg S ha⁻¹ and 120 kg CaO ha⁻¹ from SSP.

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Notes: IPNI, An introduction to the major soil types in Vietnam; Tran Menh Tien (2015) Vietnam Soil Resources, Asian Soil Partnership Consultation Workshop on Sustainable Management and Protection of Soil Resources; Data analysed by Genstat ANOVA with means separation by Fisher’s Test at 10% level. Initial soil analysis: 41 mg P kg⁻¹; 131 mg K kg⁻¹.

Source: SFRI (Dak Lak, 2018), 79000-SFRI-79010-17 (corn).