Growing SPRING BARLEY IN POLAND

KEY FINDINGS
An average 4% yield improvement
Grain number and weight increase
Higher revenue

A CASE FOR POLY4

• Barley is an important cereal crop in Poland with 1.1 million hectares harvested per year.

• Average barley yield is low (3.5 tonnes per hectare) compared with other European countries such as Germany that yields 6 to 7 tonnes per hectare.

• Soil fertility and the low use of fertilizers, particularly potassium, contribute to the poor yields seen in Poland.

• POLY4 supplies K, S, Mg and Ca in one product with a sustained nutrient delivery to meet crop demand.

poly4.com
INCREASED GRAIN YIELD

Even though field trials were affected by drought in 2018, inclusion of POLY4 achieved higher grain yields in three trials and similar yields in two compared to MOP + AS. Across the five responsive sites POLY4 increased yield by an average of 4%. Higher yields improved revenue on average by US$37/ha.

IMPROVED YIELD COMPONENTS

MOP + POLY4 fertilized barley had most grains. Thousand grain weight was also the highest after including POLY4 in the fertilizer programme.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Nutrients applied (kg ha⁻¹)</th>
<th>K₂O</th>
<th>S</th>
<th>CaO</th>
<th>MgO</th>
<th>Cl</th>
</tr>
</thead>
<tbody>
<tr>
<td>N + P (control)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MOP</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>58</td>
</tr>
<tr>
<td>MOP + AS</td>
<td>75</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>58</td>
</tr>
<tr>
<td>MOP + POLY4 (70:30)</td>
<td>75</td>
<td>30</td>
<td>27</td>
<td>10</td>
<td>0</td>
<td>45</td>
</tr>
</tbody>
</table>

*All treatments received standard N and P fertilizer applications.

Notes: 1) FAO (2003) Fertilizer use by crop in Poland; 2) Trials were considered responsive if MOP and/or MOP + POLY4 had significantly (P < 0.1) higher yield than N + P (control); five out of eight spring barley trials conducted were responsive; 3) Five barley cultivars: Melius (Baborówko), KWS Vermont (Grabów site 1), Ella (Grabów site 2), Kucyk (Oława County), and SOLDO (Pulki); 4) Initial soil tests at responsive sites: Baborówko site 1: pH (water) 5.5, 115 mg K kg⁻¹, 1180 mg Ca kg⁻¹, 43 mg Mg kg⁻¹; Grabów site 1: pH (water) 6.0, 32 mg Mg kg⁻¹; Grabów site 1: pH (water) 6.1, 70 mg K kg⁻¹; 1070 mg Ca kg⁻¹, 43 mg Mg kg⁻¹; Oława County site 1: pH (water) 6.1, 210 mg K kg⁻¹, 1180 mg Ca kg⁻¹, 65 mg Mg kg⁻¹; Pulki site 1: pH (water) 5.9, 162 mg K kg⁻¹, 930 mg Ca kg⁻¹, 65 mg Mg kg⁻¹; Pulki site 2: pH (water) 5.2, 201 mg K kg⁻¹, 1060 mg Ca kg⁻¹, 33 mg Mg kg⁻¹; 5) N and P applied as urea and DAP at 193 kg N ha⁻¹ and 50 kg P₂O₅ ha⁻¹.