Added value
DISEASE RESILIENCE

KEY FINDINGS
POLY4 reduced Clubroot incidence by up to 34%
Cabbages fertilized with POLY4 had larger heads

A CASE FOR POLY4

• Clubroot can reduce yield of Brassica crops (cabbage, oilseed rape) on average by 10 – 15% with economic losses of 28 – 49%.

• Clubroot thrives in acidic, poorly structured, waterlogged soil with a low calcium content.

• POLY4, as a source of potassium and calcium, lowered clubroot infection over the two-year study.

poly4.com
POLY4 fertilized cabbages had consistently less clubroot than when MOP + gypsum was applied over both years of study and under both soil pH levels. Clubroot infection was more severe when cabbages were grown in a low soil pH.

**DECREASED DISEASE INCIDENCE**

POLY4 fertilized cabbages had consistently less clubroot than when MOP + gypsum was applied over both years of study and under both soil pH levels. Clubroot infection was more severe when cabbages were grown in a low soil pH.

**IMPROVED CROP QUALITY**

Cabbages with more Clubroot tended to have smaller heads. POLY4 fertilized cabbages had larger heads.

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Average application rate (kg ha⁻¹)</th>
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<tbody>
<tr>
<td></td>
<td>K₂O</td>
</tr>
<tr>
<td>MOP + gypsum</td>
<td>350</td>
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<tr>
<td>POLY4</td>
<td>350</td>
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</tbody>
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**TRIAL FOCUS**

To evaluate the effect of POLY4 on Clubroot infection in a Brassica vegetable across two years.

**PARTNER**

Warwick University

**LOCATION**

Wellesbourne, UK

**DATE**

2017-2018

Notes: 1) Dixon (2009), (2014); 2) Cabbages (cv Drago) were transplanted into an infected field divided into high and low pH sections; POLY4 and MOP + gypsum were applied pre-planting to provide recommended K input and balance the Ca inputs; the same treatments were applied for two years; 3) 2017 initial soil analysis of low pH site: pH 5.8, 3% SOM, 51 mg P kg⁻¹, 261 mg K kg⁻¹, 137 mg Mg kg⁻¹, 1614 mg Ca kg⁻¹; 2017 high pH site: pH 7.6; 3.1% SOM, 89 mg P kg⁻¹, 222 mg K kg⁻¹, 56 mg Mg kg⁻¹, 2251 mg Ca kg⁻¹; 2018 initial soil analysis of low pH site: pH 6.1, 58 mg P kg⁻¹, 228 mg K kg⁻¹, 117 mg Mg kg⁻¹, 1298 mg Ca kg⁻¹; 2018 high pH site: pH 7.5, 101 mg P kg⁻¹, 273 mg K kg⁻¹, 62.9 mg Mg kg⁻¹, 1896 mg Ca kg⁻¹; 4) N applied as urea at 302 kg N ha⁻¹, P₂O₅ applied as DAP at 50 kg ha⁻¹ in 2018; 5) Disease index 0 = none, 10 = severe.

*Sirius Minerals recommends that growers utilise local good phytosanitary practices in disease management.*