K-Mag® Potato Study - PEI

Objective

- Evaluate potato yield response to MOP (0-0-60), MOP + AS (21-0-0-24S), MOP + K-Mag® Premium (0-0-21.5-10.5Mg-21S).

Overview

- Along with Phosphorus (P), Potassium (K), Magnesium (Mg), and Sulfur (S) are macronutrients needed for a balanced crop nutrition program in potatoes.
- Magnesium is critical for disease resistance, skin quality, increased dry matter and starch levels.
- Ensuring K, Mg, and S availability through bulking can be difficult on coarse, well-drained sandy soils.
- K-Mag is a unique 3-in-1 nutrient source that features low chloride, water soluble nutrient, and does not affect soil pH; regardless of application rate.

Trial Details

Locations and Crop Management:

- CROP: Potato (Solanum tuberosum)
- YEARS: 2018-2019
- LOCATIONS: 2 trials on Prince Edward Island
- DATA SOURCE: Field studies conducted by independent third-party researchers.
- EXPERIMENTAL DESIGN: Small-plot RCBD with 4 replications.
- Cultivar: Russet Burbank

Cropping Conditions:

- N Rate: Followed local practice with 50% at preplant and the rest applied in-season.
- P Rate: 160-200 lbs P₂O₅/ac applied as DAP
- K Rate: 210 lbs K₂O/ac as MOP + 30 lbs K₂O/ac as K-Mag
- S Rate: 30 lbs S/ac as AS or K-Mag

Application Timing and Method: Preplant broadcast and incorporated.

Results

<table>
<thead>
<tr>
<th>Marketable Yield (cwt/ac)</th>
<th>MOP</th>
<th>MOP + AS</th>
<th>MOP + K-Mag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato Yield</td>
<td>224</td>
<td>243</td>
<td>253</td>
</tr>
</tbody>
</table>

Summary

- The addition of S as AS increased yield by 19 cwt/ac over MOP.
- Compared to a treatment with only K (MOP) and S (AS), the addition of Mg from K-Mag increased yield 10 cwt/ac.
- Replacing a small amount of MOP with K-Mag increased yield by 29 cwt/ac over MOP alone.
- The K, Mg, and S found in K-Mag provide a great source of necessary macronutrients (primary and secondary) to provide a balanced crop nutrition program in potatoes.