BACKGROUND

- In recent years, many farmers in the Parkland zone experienced substantial loss in seed yield due to severe S deficiency in the growing season.
- Canola has high requirements for S which may vary with cultivars (and canola type) depending on the differences in growth rate, yield potential, rooting system and genetics.
- The use of high yielding canola cultivars with high rates of N and other fertilizers can increase instances of S deficiency in the growing season due to faster depletion of S in soil.

OBJECTIVE

- To compare the relative response of selected canola cultivars to S deficiency and S fertilization in relation to seed yield and quality.

MATERIALS AND METHODS

- Locations: South Tisdale
- Soil: Gray Luvisol
- Mean Precipitation: 450 mm
- Growing Season: May to August
- Canola Cultivars: Quantum (*B. napus*), AC Excel (*B. napus*), Maverick (*B. rapa*), AC Parkland (*B. rapa*)
- Rates of S: 0, 5, 10 and 15 kg S/ha
- Source of S: Potassium Sulphate (0-0-50-17)
- Other Fertilizers: Blanket Application of N, P and K Fertilizers
- Data Recorded: Seed Yield, Protein Content, Oil Content and Total S in Seed and Straw

SUMMARY AND CONCLUSION

- In the zero-S treatment, some cultivars exhibited S deficiency more severe than others, and seed yields without and with applied S varied with cultivars.
In the zero-S treatment, seed yield was highest for AC Excel and lowest for AC Parkland.

In the S-fertilized plots, Quantum produced the greatest seed yield, which was closely followed by AC Excel, and the lowest yield from Maverick and AC Parkland.

In conclusion, the results suggest that severity of S deficiency and increase in seed yield of canola from applied S may vary with cultivars.

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Table 1. Seed yield of four canola cultivars with different rates of S at South Tisdale site in 1999 (2.0 mg SO₄-S/kg in 0-15 cm soil).

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Seed yield (kg/ha) at S rates (kg S/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Quantum (B. napus)</td>
<td>530</td>
</tr>
<tr>
<td>AC Excel (B. napus)</td>
<td>1048</td>
</tr>
<tr>
<td>Maverick (B. rapa)</td>
<td>554</td>
</tr>
<tr>
<td>AC Parkland (B. rapa)</td>
<td>237</td>
</tr>
</tbody>
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