Effects of undersowing methods on pasture establishment and oat yields

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A comparison was made between methods of establishing pasture with a cover clop. The conventional method, sowing oats and scattering pasture seed on the soil surface behind the combine was compared with sowing the oats and pasture in alternative rows through the combine.

The following hypotheses were tested: H1) pasture seeds sown in rows with fertiliser will establish better than scattered on top of the soil. H2) oat yields will not decline substantially by sowing in double spaced rows. H3) subterranean clover (S) will receive more light in alternate rows and set more seed, therefore contribute more to the pasture in the year after establishment.

Method

A experiment sown in April 1987 at Creswick was replicated 4 times in 2 x 4 m plots. The pasture mix used was Trikkala subterranean clover 3 kg/ha and Sirosa Phalaris (P) 5 kg/ha and the oats were Echidna 40 kg/ha.

Pasture seedling counts were taken 8 weeks after sowing and oat grain yields were measured at maturity. In year 2 dry matter production from pasture was measured and clover content rated.

Results and discussion

Pasture numbers were greater when sown in alternate rows. There was no significant reduction in oat yields by sowing in alternate rows. Clover content was significantly better in the alternate row sowing treatment.

Table 1

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Oat Spacings rows cm</th>
<th>Seedlings/m² S</th>
<th>Seedlings/m² P</th>
<th>Oat yield tonnes/ha</th>
<th>Dry Matter Year 2 tonnes/ha</th>
<th>*Clover rating Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional method</td>
<td>15</td>
<td>4.1</td>
<td>10.3</td>
<td>1.98</td>
<td>6.45</td>
<td>2.75</td>
</tr>
<tr>
<td>Alternate rows</td>
<td>30</td>
<td>18.62</td>
<td>56.1</td>
<td>1.82</td>
<td>8.32</td>
<td>5.25</td>
</tr>
<tr>
<td>L.S.D. (0.05)</td>
<td></td>
<td>12.73</td>
<td>25.3</td>
<td>1.37</td>
<td>2.05</td>
<td>2.3</td>
</tr>
</tbody>
</table>

*1 - nil clover 10-100% clover