1972

Trial results 1972 rapeseed, barley, lupins, frost

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DEPARTMENT OF AGRICULTURE
WESTERN AUSTRALIA

TRIAL RESULTS - 1972
M. W. PERRY
PLANT RESEARCH DIVISION


2. Effects of Time of Planting and Cultivation in Barley.

3. Frost Trials

4. Time of Planting/Weed Control in Lupins
1. Competition of Rapeseed and Wimmera Ryegrass at two Nitrogen levels

Location: 'Monte Bello' (E. Schaeffer) Katanning

Soil Type & History: Grey gravelly sand over gravelly clay. Superphosphate in excess of 2000 lb. Previous crop Barley. Initial soil Nitrogen 0.069%.

Treatments: 2 x 3 x 4 factorial, 3 reps, all combinations of 100 and 213 kg/ha Urea, 1.1, 6.7 and 13.4 kg/ha rapeseed and 0, 4.5, 11.2 and 22.4 kg/ha W.R.G.

Sown 24/6/72. Superphosphate 200 kg/ha. No pests or diseases.

Results:

<table>
<thead>
<tr>
<th>Rapeseed kg/ha</th>
<th>W.R.G. plants/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
</tr>
<tr>
<td>1.1</td>
<td>294</td>
</tr>
<tr>
<td>6.7</td>
<td>236</td>
</tr>
<tr>
<td>13.4</td>
<td>209</td>
</tr>
</tbody>
</table>

Seed yield in kg/ha averaged for the two nitrogen levels

L.S.D. P<0.05 = 46 kg/ha

Comments: (i) Yields low due to dry finish. (Probability of a wetter May - October period 0.86 at Katanning).

(ii) A.O.Y. demonstrated a significant ryegrass effect (P<0.001) and a significant (P<0.05) ryegrass x rapeseed interaction i.e. there is a relatively greater yield decrease due to increasing W.R.G. on the 1.1 kg compared to the 6.7 and 13.4 kg/ha plots.

(iii) Average yields 205 and 179 kg/ha at the low and high nitrogen levels respectively. Yield reduction was uniform across all plots and cannot be attributed to a stimulation of ryegrass growth relative to rapeseed.

(iv) Low seeding rates appear beneficial in the dry finish especially where weed populations are moderate to low.
2. Effects of Time of Planting and Cultivation in Barley

**Location:** Mt. Barker Research Station - Paddock S5

**Procedures:** Superphosphate 200 kg/ha, Urea 67 kg/ha top-dressed prior to planting. Dampier barley sown 49 kg/ha. Spray Seed 1.4 litre/ha in 90 litres water (1 pt. per acre in 20 gal.)

**Results:**

Break of Season - 4th May

Yields are the average of three replications.

<table>
<thead>
<tr>
<th>Ploughed</th>
<th>Seeded</th>
<th>kg/ha</th>
<th>Bu/ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 May (2 weeks)</td>
<td>25 May (3 weeks)</td>
<td>3065</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>8 June (5 weeks)</td>
<td>2765</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>15 June (6 weeks)</td>
<td>2850</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>22 June (7 weeks)</td>
<td>2445</td>
<td>44</td>
</tr>
<tr>
<td>25 May (3 weeks)</td>
<td>8 June (5 weeks)</td>
<td>2850</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>15 June (6 weeks)</td>
<td>2895</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>22 June (7 weeks)</td>
<td>2510</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>29 June (8 weeks)</td>
<td>2640</td>
<td>47</td>
</tr>
<tr>
<td>8 June (5 weeks)</td>
<td>15 June (6 weeks)</td>
<td>2850</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>22 June (7 weeks)</td>
<td>2720</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>29 June (8 weeks)</td>
<td>2615</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>6 July (9 weeks)</td>
<td>2510</td>
<td>45</td>
</tr>
<tr>
<td>Sprayed - 18 May (2 weeks)</td>
<td>25 May (3 weeks)</td>
<td>2680</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>8 June (5 weeks)</td>
<td>2805</td>
<td>50</td>
</tr>
<tr>
<td>Sprayed - 25 May (3 weeks)</td>
<td>8 June (5 weeks)</td>
<td>2640</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>15 June (6 weeks)</td>
<td>2595</td>
<td>46</td>
</tr>
<tr>
<td>Sprayed - 8 June (5 weeks)</td>
<td>15 June (6 weeks)</td>
<td>2595</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>22 June (7 weeks)</td>
<td>2255</td>
<td>40</td>
</tr>
</tbody>
</table>

**Comments:**

(i) All treatments gave excellent weed control.

(ii) No significant yield trends evident between planting times from 25 May to 6 July.

(iii) Average yields were:

(a) All cultivation treatments - 2760 kg/ha (49.3 bu/ac)

(b) All spray-seed treatments - 2570 kg/ha (46.0 bu/ac)
3. Frost Trials

Preliminary trials to assess the nature and extent of late frost damage to wheat were performed at Merredin, Bodallin and Avondale.

Temperature profile measurements at two sites indicated that within crops temperatures were lower than above bare ground and that the zone of low temperatures extended to a greater height. No head frostling was observed despite temperatures of just below 0°C.

Continuous measurements of soil temperatures at Bodallin indicated that surface temperatures may fall to -4°C during winter. On a frost susceptible site eleven sub-zero minima were recorded, including an August spell of four days with minima of -2 to -4°C.

In northern N.S.W. economically significant stem frost damage is associated with temperatures of -6°C or lower. No stem damage was recorded for the Bodallin site.
4. **Time of Planting/Weed Control in Lupins (3080/SX)**

72WH5, 72BA6, 72MT10

The aim was to compare weed control and lupin growth over a variety of time of planting and cultivation treatments.

**Treatments included:**

(i) Dry sown.

(ii) Sown on the Break.

(iii) A range of scarification and spray seed treatments 1 - 3 weeks after weed emergence.

(iv) Ploughed and scarified blocks.

**Results:**

Wongan Hills (Unicrop)

(i) Trial droughted, no seed yields.

(ii) Dry seeded plots sown just prior to the break gave markedly superior vegetative growth.

Badgingarra, Mt. Barker (Uniharvest)

(i) Results of doubtful value due to poor germination and a late season break.

(ii) At both sites yields were best from late sown ploughed treatments followed by the early sown, minimal cultivation treatments.

(iii) Spray seed was inferior to scarification.

**Experiments in 1973 will:**

(a) Examine the effects of time of planting on lupin growth and seed yield in the absence of weed and insect damage.

(b) Investigate the apparent sensitivity of lupin growth to low temperatures noted in 1972 trials.

(c) Investigate the general climate-growth relationships of potential crop lupin species