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F. E. Ryan

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OAT VARIETY TRIAL (Autumn-Sown)
Denmark Research Station
By F. E. RYAN, B.Sc. (Agric.), Agrostologist

On dairy farms in the South-West, autumn-sown oat crops are expected to provide grazing in the early winter and then to recover and make sufficient growth to provide hay in the spring. During 1954, a trial was carried out to test several varieties of oats to determine their suitability for South-West conditions and requirements.

The trial was carried out at the Denmark Research Station on a soil type described as Wakundup gravelly sand, brown phase.

The area was ploughed in March and cultivated with a disc cultivator. The oats were sown on May 4 at 80 lb. (two bushels) to the acre with 1½ cwt. of superphosphate to the acre.

VARIETIES

Fourteen varieties of oats were used in the trials. These were Jongensklip and Lang-gewans from South Africa; De Soto, Nortex, Nicholson’s Improved and Avena byzantina from the U.S.A.; Acacia from N.S.W.; two standard varieties, Algerian and Fulghum and five crossbreds W 27, W 28, W 29, W 30 and W 32 from the Wongan Hills Research Station.

SEASONAL CONDITIONS

The season of 1954 differed from a normal season in the dry spring weather experienced. During that period of the year conditions were quite abnormal for the Denmark district.

DENMARK RESEARCH STATION.
OAT VARIETY GRAZING EXPERIMENT—AUTUMN SOWN, 1954.
AIR DRY GRAZING AND SUBSEQUENT HAY YIELDS.

<table>
<thead>
<tr>
<th>Soil Type—Wakundup gravelly sand—brown phase.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sowing Date—4th May, 1954.</td>
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<tr>
<td>Rate of Sowing—80 lb. (2 bushels) per acre.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Grazing Yields (cwt. per acre)</th>
<th>Combined Grazing Yields</th>
<th>Subsequent Haystage Yields</th>
<th>Total Grazing and Haystage Yields</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st Cut 21 June</td>
<td>2nd Cut 14 July</td>
<td>3rd Cut 3 Aug</td>
<td>Cwts. per acre</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>---------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Jongensklip</td>
<td>2.57</td>
<td>2.25</td>
<td>2.05</td>
<td>6.87</td>
</tr>
<tr>
<td>Nicholas’s Improved</td>
<td>2.13</td>
<td>2.65</td>
<td>1.77</td>
<td>6.55</td>
</tr>
<tr>
<td>Nortex</td>
<td>2.07</td>
<td>2.55</td>
<td>1.80</td>
<td>6.42</td>
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<tr>
<td>Fulghum</td>
<td>2.33</td>
<td>2.77</td>
<td>2.65</td>
<td>8.75</td>
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<tr>
<td>De Soto</td>
<td>1.75</td>
<td>2.35</td>
<td>1.80</td>
<td>5.90</td>
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<tr>
<td>Algerian</td>
<td>2.73</td>
<td>2.72</td>
<td>2.57</td>
<td>7.72</td>
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<tr>
<td>Avena byzantina</td>
<td>2.27</td>
<td>2.67</td>
<td>1.87</td>
<td>6.81</td>
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<tr>
<td>W32</td>
<td>2.93</td>
<td>2.97</td>
<td>2.10</td>
<td>7.80</td>
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<td>W28</td>
<td>1.20</td>
<td>2.87</td>
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<td>7.77</td>
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<tr>
<td>Acacia</td>
<td>2.53</td>
<td>2.62</td>
<td>1.87</td>
<td>7.02</td>
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<td>W29</td>
<td>2.43</td>
<td>2.87</td>
<td>2.20</td>
<td>7.50</td>
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<td>W30</td>
<td>2.73</td>
<td>2.75</td>
<td>1.60</td>
<td>6.05</td>
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<tr>
<td>W27</td>
<td>2.87</td>
<td>2.25</td>
<td>1.95</td>
<td>6.57</td>
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<tr>
<td>Lang-gewans</td>
<td>2.73</td>
<td>3.05</td>
<td>2.20</td>
<td>7.98</td>
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<tr>
<td>General Mean</td>
<td>2.60</td>
<td>2.65</td>
<td>2.00</td>
<td>7.25</td>
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<tr>
<td>Variation co-efficient as percentage of General Mean</td>
<td>7.2%</td>
<td>6.2%</td>
<td>7.6%</td>
<td>4.3%</td>
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<tr>
<td>Least Significant Differences (cwt. per acre)</td>
<td>- .72</td>
<td>Not significant</td>
<td>- .43</td>
<td>- .50</td>
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</tbody>
</table>

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RESULTS

Grazing.

The oats were grazed three times before being closed up for hay.

These grazings took place on June 21, July 14 and August 3, i.e. 7 weeks, 10 weeks and 13 weeks, respectively, after seeding.

At the first grazing, W 30, an early flowering cross-bred oat and Fulghum oats provided most grazing.

At the second grazing on July 14 all varieties provided good grazing and no important differences between them were recorded.

At the third grazing in August the best variety was again Fulghum, although by this time late maturing varieties Algerian and Lang-gewans were also providing a substantial amount of fodder.

The sum of the grazing yields for the three grazings suggest that Fulghum was the most satisfactory oat for this purpose but that W 30, Lang-gewans, W 32, W 28 and Algerian also provided satisfactory bulk.

No further grazing was done after August 3, and each variety was cut when it reached a hay stage.

The highest yields of hay were obtained from the introduced varieties, Jongensklip, Nicholson’s Improved and Nortex, although these were not significantly better than Fulghum. The results are summarised in the accompanying table.

CONCLUSIONS

Both Algerian and Fulghum oats are standard varieties recommended for higher rainfall areas. Algerian is considered most satisfactory for a hay crop alone whilst Fulghum is recommended where grazing and recovery for hay are required.

In this trial introduced varieties Jongensklip and Nicholson’s Improved were shown to be promising varieties and will be included in further trials.

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