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GROW BARLEY FOR MALT OR FEED?

By G. B. CROSBIE, Chemist, and J. A. PARISH, Adviser, Wheat and Sheep Division.

MALTING barley can be grown in certain areas receiving more than 13 inches annual rainfall, and farmers have to make a choice between growing barley for malt or feed in these areas.

For the 1971 season, the Department recommended Dampier in areas receiving more than 13 in. annual rainfall, where it was considered that malting quality barley could be grown. For feed barley in these areas the Department generally recommended Beecher for May plantings and Dampier for June plantings. In the northern areas of the medium rainfall region, Beecher was recommended for both May and June plantings. Beecher was recommended mainly in the below 13 in. region, for feed purposes.

Dampier, a two-row variety, is a good dual purpose barley and is superior in quality to the six-row variety, Beecher, for both malting and feed purposes. It produces more malt extract than Beecher and has a higher feed value, due to its lower content of fibre. Overseas buyers have shown a preference for Dampier for feed purposes.

The choice of which variety to grow for feed depends on the relative yields and price returns expected for the two varieties. Many growers prefer to grow Dampier, and retain a chance of receiving an extra bonus if the barley is accepted as manufacturing grade.

Grain receival

At present, W.A. barley is received into three main grades—Two-Row Manufacturing, Two-Row Feed and Standard Six-Row.

In past years, the relatively small quantities of Two-Row Feed barley delivered were usually of very poor quality and returned less per bushel to the grower than Standard Six-Row. Last season, larger quantities of better quality Two-Row Feed were produced. First advances for Two-Row Feed were 4 cents higher than for Standard Six-Row. If the following prices are taken as a guide to relative prices of the two grades over the next couple of seasons, it could be expected that considerably less Beecher will be planted in the medium and high rainfall regions.

<table>
<thead>
<tr>
<th>Table 1.—Payments to farmers.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969-70</td>
</tr>
<tr>
<td>Total payment</td>
</tr>
<tr>
<td>2-Row Manufacturing</td>
</tr>
<tr>
<td>2-Row Feed</td>
</tr>
<tr>
<td>Standard 6-Row</td>
</tr>
</tbody>
</table>

* Individual farmer’s freight charges to be deducted.

The maps 1 and 2 show the areas where two-row and six-row barley were produced in the 1970/71 season.

Growing malting barley

Once the decision is made to attempt to produce Manufacturing Grade Dampier, certain considerations have to be taken into account.

Weather staining

Heavily weather stained barley is not accepted at Manufacturing Grade. Weather staining frequently occurs in certain areas of the high rainfall region and is associated with rainfall during the grain ripening stage (see article on weather staining in this issue).

Later planting is a possible means of reducing the incidence of weather staining. However, there is the chance of an early finish to the season, resulting in lower yields of smaller sized grain. The grower would then be faced with sieving out the small seed down to the required level (maximum of 15 per cent. through a 2.5 mm. sieve) or delivering the whole as feed grade.

Harvesting

Extra care needs to be taken when harvesting malting barley. Maltsters prefer to buy well threshed barley containing a minimum of
skinned grain. Careful setting of the harvester is required and frequent adjustments should be made during the day as the degree of skinning is affected by changes in temperature and humidity.

W.A. Two-Row Manufacturing Grade standards specify that barley shall contain not more than 20 per cent. of skinned grains. Dockages of 2 cents per bushel for skinning in excess of 10 per cent. and up to 15 per cent., and 4 cents for skinning in excess of 15 per cent. and up to 20 per cent., applied for the 1970-71 crop.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Receivals (million bushels)</th>
<th>Percentage of total 2-row received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geraldton</td>
<td>1.23</td>
<td>77.7</td>
</tr>
<tr>
<td>Fremantle</td>
<td>4.51</td>
<td>96.7</td>
</tr>
<tr>
<td>Bunbury</td>
<td>2.34</td>
<td>96.4</td>
</tr>
<tr>
<td>Albany</td>
<td>4.76</td>
<td>90.0</td>
</tr>
<tr>
<td>Esperance</td>
<td>1.50</td>
<td>74.0</td>
</tr>
<tr>
<td>State total</td>
<td>14.34</td>
<td>89.7</td>
</tr>
</tbody>
</table>

*From information supplied by Co-operative Bulk Handling Ltd.*

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**MAP 1.—PRODUCTION OF 2-ROW BARLEY IN W.A., 1970-71**

Each dot represents about 10,000 bushels

Ge Geraldton  Na Narrogin
Mg Mingenew   By Bunbury
Mo Moora      Ka Katanning
Me Merredin   Je Jerramungup
No Northam    A Albany
P Perth       E Esperance
SG Salmon Gums
**Protein level**

Although barley is not at present graded according to protein content, it is in the interests of our present and prospective trade if low protein two-row barley of Manufacturing Grade can be produced. Maltsters prefer to buy barley with a protein content below 11 per cent. on a dry basis.

Map 3 shows the average levels of protein in Dampier barley produced in this State. Good quality barley of low protein content can be grown in zones 2 and 3 if the following high fertility situations are avoided:

- Heavy clay or loam clay soils.

It is important to note that—

1. part of the low protein zone coincides with the area of high risk of weather staining (see article on barley staining in this issue);
2. in the eastern, lower rainfall sections of zone 2, farmers could be faced with the problem of higher levels of screenings.
Future markets

Western Australia has the potential to produce a high grade malting barley category of grain, if high protein deliveries could be excluded. However, before such a scheme was introduced, marketing authorities must be sure that it would be economically sound. To date, W.A. has evidently been able to satisfy buyers' requirements. This includes barley from the last 2 seasons, when protein levels were higher than average. If acreages sown to two-row barley increase in situations producing higher protein levels, the need for segregation could arise.

A simple way of doing this would be to require each grower to submit a pre-delivery sample which would be required to contain less than 11 per cent. protein. The protein level could be set on a sliding scale to enable the W.A. Barley Marketing Board to change it from year to year, according to seasonal fluctuations in protein content, which can be accurately predicted before harvest. In this way large quantities of prime malting grade barley could be separated from each season's crop if this were necessary.

MAP 3.—AVERAGE LEVELS OF PROTEIN IN DAMPIER BARLEY

Based on wheat protein levels and the normal difference between wheat and Dampier barley

ZONE 1.—12.0% or above.
ZONE 2.—11.0 to 11.9%.
ZONE 3.—Below 11.0%.

Protein (nitrogen content x 6.25) expressed on a dry basis.