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LINSEED—AN ALTERNATIVE CROP FOR THE SOUTH COAST

By R. J. DOYLE, Officer-in-Charge, Esperance District Office, and R. J. GUYTON, Rural Economist, Rural Economics and Marketing Section

IN the over-17 inch rainfall zone of the south coast region of Western Australia animal production is the main farm enterprise. Although farmers in the main cereal growing regions of W.A. crop about one-third of their cleared land each year, farmers in the south have been reluctant to crop more than about 12 per cent. of their cleared area.

Established farms on the south coast have shown little increase in cropping, although the total area cropped throughout the region has increased by some 226,000 acres since 1961. Most of this increase has been associated with new farm development. In the Esperance coastal region however, a more favourable attitude has developed towards cropping both new and old land (Table 1).

Table 1.—Land cropped as a percentage of land cleared

<table>
<thead>
<tr>
<th>Region</th>
<th>1961</th>
<th>1965</th>
<th>1967</th>
</tr>
</thead>
<tbody>
<tr>
<td>South coastal (including Esperance)</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Esperance</td>
<td>11.2</td>
<td>14.6</td>
<td>15.5</td>
</tr>
</tbody>
</table>

In recent years, the acreage sown to linseed has risen rapidly, to change the emphasis from cereal cropping only. The main increase in linseed has been in the Esperance area, where the growth is illustrated in Table 2.

Table 2.—Acres sown to linseed—Esperance

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>1,059 acres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td>97 acres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1966</td>
<td>1,751 acres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1967</td>
<td>6,886 acres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1968</td>
<td>18,200 acres estimated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td>21,000 acres estimated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The main reasons for the gradual swing to cropping, and the rise in popularity of linseed in the Esperance coastal area are:

- Farm stage of development.
- Relative profitability of various enterprises.
- Characteristics of linseed and cereals.
- Marketing and handling facilities.

Farm stage of development

(a) Cost and return patterns.

During the 1950s, in the early years of farm development on the Esperance sandplain, new land crops yielded poorly. As a result, land was sown usually direct to subterranean clover-based pasture, and stocked with Merino sheep. This pattern continued into the 1960s, being reinforced by the rust epidemic of 1962.

Development direct to pasture and stock required heavy capital expenditure, which, in the short term, was not offset by income because of the low per acre levels of animal production in the pasture establishment phase.

The farmer with adequate capital or a taxable income problem, was able to survive the high cost development phase to benefit from the good returns from established pasture.

But future potential was of little value to the settler with limited starting capital and a high debt load. To survive the development phase this farmer had to cover heavy short term repayments and
find sufficient cash surplus to meet additional farm development, property maintenance and living expenses.

The situation of low returns per acre was aggravated by falling wool prices and the tendency to spend disproportionately more on increasing the acreage sown to pasture, rather than on stock.

Faced with this dilemma, the settler needed a solution which would increase net income fairly quickly, but which would not require much extra borrowing.

Purchasing more sheep, or sowing more pasture were not satisfactory answers to the problem. Each involved further borrowing (and in many cases borrowing power was already exhausted); and each contributed little to the immediate problem of meeting existing repayment commitments, and other expenses.

Cropping was seen as a better—though still only partial—solution to the problem. New land cereal crops gave a quicker cash return than pastures which were only lightly stocked in the first year; this helped offset development costs and reduced potential debt level. Greater use of nitrogenous fertilisers at the more favourable price levels operating in the 1960s resulted in better yields than previously. Also, cereals and linseed sown on clover land on understocked properties gave quick and additional cash returns without affecting the income from stock.

An additional advantage for cropping was the relatively low extra capital commitment involved. At the time, sheep and cattle were in short supply and relatively high priced; on the other hand many settlers had some or most of the basic cropping equipment (till then under-used) or could arrange share or contract cropping.

The relative profitability of various enterprises

Previous articles in this Journal have shown how different methods and rates of new land development require different levels of capital and cash commitments. The budgets showed that cropping new land gave better financial results than employing an all-grazing management system.*

Other budgets showed that it was more profitable to crop portion of the understocked clover land than to buy extra stock.

When the gross margins for cropping versus sheep were compared (at the prices operating at that time) it was also evident that the yields of wheat or linseed required to equal the returns from grazing three breeding ewes per acre were within the reach of the average farmer. If the property was understocked at say two ewes per acre, clearly the relative advantage in cropping increased.

Table 3.—Gross margins* of sheep and crop enterprises (1967)

<table>
<thead>
<tr>
<th>Enterprises</th>
<th>Expected yield</th>
<th>Gross margin</th>
<th>Yield of crop to equal the gross margin from</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>bushels $</td>
<td></td>
<td>1 ewe 2 ewes 3 ewes</td>
</tr>
<tr>
<td>Linseed</td>
<td>12</td>
<td>21</td>
<td>5 7.5 10</td>
</tr>
<tr>
<td>Wheat</td>
<td>18</td>
<td>16</td>
<td>9 14 19</td>
</tr>
<tr>
<td>Oats</td>
<td>30</td>
<td>12</td>
<td>17 27 37</td>
</tr>
<tr>
<td>Barley (feed)</td>
<td>24</td>
<td>16</td>
<td>12 18 25</td>
</tr>
<tr>
<td>Ewes</td>
<td>3/acre</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

*“Gross margin” is the difference between the gross income and all variable costs involved in production and output for the particular enterprise.

Characteristics of linseed and cereals

Cropping appeared to offer the best solution to the financial difficulties of some Esperance farmers. However, because weeds, disease, and over-wet winters contributed to difficulties in the production of cereal grains, linseed grown on clover land has proved most reliable.

Cereals

Wheat is affected by the root rot and take-all disease complex to a greater extent than in most other areas. Diseases such as septoria and rust, and excessive wetness, cause variations in wheat yield and often cause discoloured, poor quality grain.

Barley is less susceptible to the root rot—take-all disease complex, is not affect-
ed by septoria and has good summer graz-
ing value. However, it is susceptible to
waterlogging, weather staining of the
grain and large variations in yield between
seasons. These features, together with a
lower price per bushel when compared
with wheat, make barley relatively un-
attractive to farmers as a major cash crop.

Oat crops suffer less from disease and
waterlogging but are weak-strawed, shed
grain readily and have higher freight costs
than other cereals. Together with a lower
price per bushel, these factors make the
gross margin for oats unfavourable when
compared with other crops.

Linseed

Linseed is not susceptible to the cereal
diseases and in the Esperance area, has
shown little evidence of diseases normally
associated with this oilseed crop. The
crop appears to be less susceptible to
waterlogging than cereals and grain
quality is not adversely affected by cool,
moist conditions at maturity.

On the other hand, spring moisture
stress, particularly on shallower sands over
clay at Esperance, can cause wide yield
fluctuations. For this reason the soil type
requirements for growing linseed, time of
planting and rainfall define the areas most
suitable.

Linseed reduces the incidence of the
root-rot like diseases in a following wheat
crop. As a result the yield of wheat im-
proves considerably following a “cleaning”
crop of linseed.

Linseed, at $2.15 per bushel, is the most
profitable cleaning crop, being the least
variable in yield and giving the highest
cash return per acre.

Linseed could be grown as a subordin-
ate enterprise (to reduce the incidence of
disease) with cereal production the main
aim. However, as a straight cropping
alternative, linseed yielding 12 bushels an
acre has the same gross margin as a 21
bushel an acre wheat crop. A comparison
with the cereal crops is given in Table 3.

## Grain marketing and handling facilities

Improved communications and bulk
transport services and the ability to de-
liver in bulk at the Esperance port for
both cereals and linseed, led to substantial
cost and time savings in grain handling.

### Table 3.—Equivalent yields of alternative crops

<table>
<thead>
<tr>
<th>Crop</th>
<th>Farm price per bushel (1968)</th>
<th>Yield to give equal gross margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linseed</td>
<td>2.15</td>
<td>bus. per acre</td>
</tr>
<tr>
<td>Wheat</td>
<td>1.11</td>
<td>12</td>
</tr>
<tr>
<td>Oats</td>
<td>0.45</td>
<td>50</td>
</tr>
<tr>
<td>Barley (feed)</td>
<td>0.78</td>
<td>29</td>
</tr>
<tr>
<td>(malting)</td>
<td>1.05</td>
<td>21</td>
</tr>
</tbody>
</table>

### Background to marketing

A big obstacle to the expanding linseed
industry at Esperance was the low home
market demand. The development of an
export market in Japan and the ability
to sell linseed on the world market at
current export parity (about $100 per ton
on board ship at Esperance) largely over-
came this limiting factor.

Before 1965, production of linseed was
restricted because of the low quantity
consumed on the local market. Hemphill
Grey Pty. Ltd., who operated the oilseed
crushing plant in Perth gave out con-
tracts to growers to supply about 400-600
tons of seed.

In 1965 Hemphill Grey discontinued
crushing operations and virtually no lin-
seed was grown at Esperance in that year.
In 1966, however, Reflnoil Pty. Ltd., began
operations in Perth and were able to take
the majority of linseed produced in
Esperance in that year.

Local consumption through Reflnoil Pty.
Ltd., is expected to be about 1500 tons an-
ually.

Production increased to about 2000 tons
in 1967 and was sold by the Grain Pool of
W.A. who acted as selling agents for the
newly formed Esperance Linseed Growers’
Association. Some 1,250 tons of linseed
were consigned in bulk to Japan from
Esperance.

In 1968 the Grain Pool, acting with a
“voluntary pool” of linseed growers
(mainly from Esperance), renegotiated
prices and explored the potential markets
for linseed in Japan and Australia. In
July 1968 the Grain Pool of W.A. advised
that orders for at least 8,000 tons to Japan
and 12,000 tons within Australia were
available if these quantities of linseed
could be produced at Esperance. In fact
only 3062 tons were available for export from the 1968/69 harvest and some 700 tons were used in local consumption.

The disposal of the linseed crop over the last three seasons is shown in Table 4, with an estimate of the seed retained for sowing in 1969.

**Conclusion**

Linseed may be the short term answer to some of the economic problems of Esperance sandplain settlers. However, in the long run the potential for expansion of the local linseed enterprise may depend on new uses being found for this product, and the production in other exporting countries.
Injection protection

Nine steel test specimens were subjected to a standard rusting test. The one on the left was protected by Caltex Superdiesel. The others used conventional diesel fuels. Superdiesel protects your injector, and your whole fuel system, from rust and corrosion. You get top reliability, top performance.

Caltex Superdiesel is a specially formulated diesel fuel from Caltex. Superdiesel keeps injectors clean and efficient, so your engine develops full power. It prevents clogged fuel lines and contains special additives to control microbiological growth in storage tanks. It's a new kind of Money Saver from Caltex.