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CONTROL OF EUCALYPT REGROWTH

by J. G. Paterson, B.A. B.Sc. (Agric.), Adviser, Biological Services Division

EUCALYPT regrowth has presented a problem to farmers throughout the State for many years. Some species are checked by heavy grazing although, in the main, this method is far from satisfactory.

Regrowth under aerial lines is of particular concern to the Postmaster General's Department and the State Electricity Commission. Chemical treatment, although relatively expensive, has now been widely accepted.

SUCKER REGROWTH
Throughout the South West marri (Eucalyptus calophylla) and jarrah (E. marginata) are by far the most important species with smaller amounts of wandoo (E. redunca var. elata), karri (E. diversicolor) and York gum (E. loxophleba). Mallee is predominant in the eastern wheatbelt.

Earlier work carried out by this Department indicated the value of chemical treatment but when applied to dense areas of regrowth the cost factor became important. On economic grounds a 0.25 per cent. emulsion of 2,4,5-T together with an oil additive has been recommended for the easier-to-kill species such as marri.

Eucalypt regrowth along roadsides can damage power and telephone lines.
Table 1—Effect of herbicide treatment on eucalypt regrowth

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Quantity added to 100 gallons water</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Treated February</td>
</tr>
<tr>
<td>1. Tordon 50-D</td>
<td>10 pints</td>
<td>A</td>
</tr>
<tr>
<td>2. Tordon 50-D</td>
<td>5 pints</td>
<td>B</td>
</tr>
<tr>
<td>3. Tordon 50-D + White Oil*</td>
<td>5 pints + 8 pints</td>
<td>C</td>
</tr>
<tr>
<td>4. Tordon 50-D + White Oil*</td>
<td>2½ pints + 8 pints</td>
<td>C</td>
</tr>
<tr>
<td>5. Tordon 50-T</td>
<td>5 pints</td>
<td>A</td>
</tr>
<tr>
<td>6. Tordon 50-T</td>
<td>4 pints</td>
<td>A</td>
</tr>
<tr>
<td>7. Tordon 50-T</td>
<td>3 pints</td>
<td>A</td>
</tr>
<tr>
<td>8. Tordon 50-T</td>
<td>2 pints</td>
<td>B</td>
</tr>
<tr>
<td>9. Tordon 50-T + White Oil*</td>
<td>3 pints + 8 pints</td>
<td>C</td>
</tr>
<tr>
<td>10. 2,4,5-T (80%) + White Oil*</td>
<td>3 pints + 8 pints</td>
<td>C</td>
</tr>
<tr>
<td>11. 2,4,5-T (80%) + Diesel Fuel</td>
<td>3 pints + 8 pints</td>
<td>C</td>
</tr>
</tbody>
</table>

A = completely satisfactory.  
B = satisfactory but small amount of retreatment necessary.  
C = unsatisfactory, complete retreatment necessary.  
* = As superior summer spraying oil.

Current Trials
With the introduction of a new chemical, picloram, trials were designed to test the effectiveness of this material in combination with 2,4,5-T and 2,4-D. Oil additives were included in some of the treatments.

Herbicides
- Tordon 50-D:—contains 8 oz picloram plus 32 oz. 2,4-D amine per gallon.  
- Tordon 50-T:—contains 8 oz. picloram plus 32 oz. 2,4,5-T amine per gallon.  
- 2,4,5-T butyl ester (80%w/v):—contains 8 lb acid equivalent per gallon.

Picloram is only available under the name of Tordon and all future references in this article are under this name.

Experimental details
Six sites were selected throughout the South-West located in the Bunbury, Donnybrook, Manjimup and Mount Barker districts.

The main species on each site was marri. Jarrah and karri were present to a much less degree and for this reason Table 1 refers only to marri.

Treatments were applied in mid-February and mid-April 1966.

Table 2—Recommendations for control of eucalypt regrowth

<table>
<thead>
<tr>
<th>Time</th>
<th>Result Required</th>
<th>Treatment Number (see Table 1)</th>
<th>Chemical</th>
<th>Quantity to add to 100 gallons water</th>
<th>Approximate cost for 100 gallons mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early to mid-Summer</td>
<td>A</td>
<td>1</td>
<td>Tordon 50-D</td>
<td>10 pints</td>
<td>$22.50</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>6</td>
<td>Tordon 50-T</td>
<td>4 pints</td>
<td>$10.00 (b)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>4</td>
<td>Tordon 50-D + White oil (a)</td>
<td>2½ pints + 8 pints</td>
<td>$6.50</td>
</tr>
<tr>
<td>Mid to late Summer</td>
<td>A</td>
<td>1</td>
<td>Tordon 50-D</td>
<td>10 pints</td>
<td>$22.50</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>5</td>
<td>Tordon 50-T</td>
<td>5 pints</td>
<td>$12.50 (b)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>11</td>
<td>2,4,5-T (80%) + diesel fuel</td>
<td>3 pints + 8 pints</td>
<td>$7.00</td>
</tr>
</tbody>
</table>

(a) As superior summer spraying oil.  
(b) Tordon 50-T is not yet available commercially and the price indicated is only an estimation.
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All leaves and stems were sprayed to the point of run-off. A relatively high pressure of 150 pounds per square inch was used to ensure an even coverage of the foliage.

The following October each plot was rated by four independent observers and the results subjected to statistical analysis.

Observations of marri over all sites indicated that there was a significantly better result on the Mount Barker and Manjimup sites than on the Donnybrook and Bunbury sites. This was probably related to climatic conditions. Best results were obtained when the regrowth was from four to six feet tall presumably due to growth shorter than this being associated with a much lower leaf absorption of chemical.

Alone 2,4,5-T was not as effective as Tordon applied early in the summer and this material should only be used from March to early May. The addition of diesel fuel at the rate indicated in the table is essential for maximum effect.

The benefit gained by the addition of the emulsifiable oil to the low rate of Tordon 50-D (treatment number 4) cannot be readily explained, but the results obtained warrant inclusion in the recommendations. Treated regrowth should not be burnt until at least six months after spraying.

Other Species
Karri
Observations indicate that karri regrowth is relatively easy to kill and responds similarly to marri.

Jarrah
This species proved rather difficult to kill particularly in the drier areas of the South-West. The results obtained to date do not warrant the use of Tordon at the rates tested. Approximately 70–80 per cent. results are usually obtained following mid or late summer application of 2,4,5-T plus a diesel fuel additive (Treatment number 11).

In Brief . . .
- Eucalypt sucker regrowth can be chemically controlled, the results obtained depending on the species involved.
Both trees were frilled with an axe. The regrowth on the left is typical and contrasts with the chemically treated tree on the right.

- Herbicides such as Tordon 50-D and Tordon 50-T have advantages over those previously recommended. However, they are more expensive.
- 2,4,5-T should only be used between March and early May.
- The most appropriate chemical to use on marri regrowth is indicated in Table 2.

**STANDING TIMBER**

Where regrowth has progressed unchecked and the stems are more than three inches in diameter at the base, it is necessary to use a technique other than foliage spraying.

Table 3 indicates the alternative methods together with the relative cost.

**Cut Stump**

Where the diameter of the tree enables it to be easily felled, the cut surface should be swabbed immediately with the appropriate solution, concentrating on the marginal areas.

**Frill Ring**

With larger trees a series of overlapping, downward sloping axe cuts should be made into the heartwood to form a continuous lip, as close to the ground as possible. The appropriate solution should be poured into the lip to the point of overflow. Approximately 10 fluid ounces are required to treat a tree 12 inches in diameter.

**Trunk Injection**

A series of notches should be cut with a narrow bladed tomahawk or chisel at five to six inch intervals round the trunk. For trees up to 12 inches diameter each notch should be treated with 2.5 c.c. of solution immediately after cutting. The rate should be doubled for larger trees. A sheep drenching gun is useful for injecting the chemical. This method of treatment can be used on trees of any diameter greater than six inches.

A small tomahawk designed for cutting the notch and applying the chemical in one operation is available.
In Brief . . .
- Standing timber can be controlled by basal chemical treatments.
- The selected treatment should be applied immediately after cutting the tree.

ACKNOWLEDGMENTS
The co-operation of the Postmaster General's Department and the Conservator of Forests is gratefully acknowledged. In particular, I wish to thank Mr. Peter Kimber of Forests Department for making available his results on the treatment of standing timber by trunk injection of Tordon 50-D.

Dow Chemical (Australia) Pty. Ltd. kindly provided the Tordon herbicides used in these trials.

Table 3—Methods and costs of herbicide treatment of standing timber

<table>
<thead>
<tr>
<th>Method</th>
<th>Time to Treat</th>
<th>Species Tested</th>
<th>Chemical</th>
<th>Preparation</th>
<th>Approximate cost to treat tree 12 in. diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut stump and frill ring</td>
<td>Spring or Autumn</td>
<td>Marri Jarrah Karri</td>
<td>2% 2,4,5-T in oil</td>
<td>½ fl. oz. 2,4,5-T (80%) to 1 pint oil*</td>
<td>4 cents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wandoor Yorkgum</td>
<td>4% 2,4,5-T in oil</td>
<td>1 fl. oz. 2,4,5-T (80%) to 1 pint oil*</td>
<td>8 cents</td>
</tr>
<tr>
<td>Trunk Injection</td>
<td>Anytime</td>
<td>Jarrah Marri</td>
<td>20% Tordon 50-D in water</td>
<td>1 part Tordon 50-D to 4 parts water</td>
<td>2 cents</td>
</tr>
</tbody>
</table>

* A suitable oil is power kerosene or diesel fuel.

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