062193

# CULLING OPERATIONS IN THE JARRAH FOREST

**General**

The removal or killing of cull trees of pile and veteran size is an essential silvicultural operation aimed at improving the productivity of the jarrah forest. The prescriptions detailed here are based on experimental work confined to marri. Field experience has shown that they may be applied equally effectively to jarrah.

**Poisoning versus Felling**

There are two methods of tackling cull trees, felling and poisoning. The choice of the method to adopt will depend on a number of factors:-

(1) The undesirability of having large dead stags near roads and firebreaks. Felling is indicated here.

(2) Coppice may be a useful form of stocking a gap caused by the removal of a cull. Again felling is indicated; particularly when the cull is a pile or small veteran-sized jarrah. The stump must be cut as low as possible if wind-firm coppice shoots are to result.

(3) The size of the cull trees. From field experience it seems likely to be cheaper to fell large numbers of small culls than to poison them. Poisoning appears to be the most economical technique for the larger culls.

**Costing trials Recommended**

It is recommended that costing trials comparing felling with poisoning be carried out before embarking on a large scale operation.

**Basis of the Poisoning Technique**

The recommended poison is Tordon. Once absorbed by the tree, this substance is very active and is moved over considerable distances within the tree. Hence application points can be spaced at wide intervals round the stem. The poison must be injected well into the active part of the tree. This means placing the dose of poison in the sapwood which in turn requires the drilling of a fairly deep hole. Drilling is generally carried out with a carpenter's brace and bit but it may prove more efficient to use a small powered auger.

**Poisoning with Tordon 50D**

Holes, entering the tree downwards at an approximate $45^{\circ}$ angle, are bored at $3\frac{1}{2}$ foot spacings round the stem. Each hole is filled with undiluted Tordon 50D. The depth of the hole will depend on the size of the drill bit used. Recommended bit sizes and depths of holes are shown in Table 1 below. Each combination of bit and depth will give a hole which will hold 20cc of Tordon.

Table 1

Bit Size and Hole Depths for Tordon 50D

| Bit Size | Depth of Hole |
|---|---|
| $\frac{5}{8}$" | 5" |
| $\frac{3}{4}$" | 4" |
| $\frac{7}{8}$" | $3\frac{1}{2}$" |
| 1" | 3" |

It is recommended that a stop be screwed on to the drill bit to act as a guide as to when the hole depth is adequate.

Poisoning with Tordon 20K

The formulation of Tordon called 20K is not yet readily available but it may become so in the future. It is 4 times stronger than Tordon 50D; only one quarter the dose is required and holes can be considerably smaller to accommodate the reduced quantity. Table 2 gives bit size and hole depth recommendations for Tordon 20K (or 22K) where the dose per hole is 5cc. The use of a calibrated sheep drencher is essential for the application of Tordon 20K (or 22K). For this small quantity of poison to be in contact with the sapwood rather deeper holes are necessary to avoid excessive absorption of the poison by the bark at the outer edge of the hole. This can be avoided and a shallower hole bored if a patch of bark is chipped off where the hole is to be made.

Table 2

Bit Size and Hole Depths for Tordon 20K

| Bit Size | Hole Depth (drilled thro' bark) | Hole Depth (bark removed) |
|---|---|---|
| $\frac{3}{8}$" | 5" | $3\frac{3}{4}$" |
| $\frac{1}{2}$" | 4" | $2\frac{3}{4}$" |

Season of Operation

Trials of cull poisoning have been confined so far to the spring and summer period. It is recommended that for the present this operation be confined to the period September to April inclusive.

Results

Symptoms of poisoning (yellowing leaves) should start to appear within 2 weeks (midsummer application) to 6 weeks (early spring and late autumn applications) of the operation. Total death may take more than one year as there is a tendency for the initial foliage kill to be followed by epicormic shoots. These will, in general, eventually die.

The success rate in trials has been of the order of 90% to 95% deaths.