Jarrah Silviculture Specifications 1/86

THINNING

1. CRITERIA FOR SELECTION OF CROP TREES

Select crop trees to retain using the following considerations:

* Crop tree selection is based on the following species priority:-

    1. Jarrah
    2. Marri
    3. Sheoak

* Jarrah/Marri crop trees should be in the dominant or codominant level, with a healthy well structured crown. Trees with primary crowns are capable of expansion to take advantage of the space available. Secondary crowns show less capacity for expansion.

    - Trees with a deep, broad crown grow five times faster than trees with a narrow, shallow crown. Crown vigour is much more significant than bole length.

eg.	Original diameter	30 cm	30 cm
	Bole length	5 m	10 m
	Crown condition	Deep,broad, dense	shallow narrow dense
	Diameter in 20 years	50 cm	34 cm
	Volume on 20 years	.64 cu.m	.5 cu.m
	Time taken to reach sawlog size (50 cm)	20 years	100 yrs

    - Crop trees should have a bole free of any defect that would preclude its use for either a sawlog or a pole (minimun defect free bole should be 3 m for sawlogs).

    - In general, larger diameter trees will increase in diameter faster than smaller ones.

* Sheoak crop tree selection should be based on the following criteria:-

    - healthy, well structured deep but narrow crown

    - minimum bole length of 1.8m with at least 50% of the diameter defect free.

* Even spacing is not a critical factor provided the crown of a selected crop tree has space to expand in at least two directions. The total space available (expressed as Basal area/hectare) is of more importance.

2. RETENTION OF CROP TREES AND COMMERCIAL LOGGING

Density of crop trees to be retained varies with average tree size (see 4) but where the crop trees approach 30 cm in diameter, crop trees should be retained at the rate of 10 sq.m/ha.

Where jarrah trees suitable for crop trees exceed 10 m^2/ha then the surplus may be removed (as S.E.C. poles or any other marketable product). In this situation there is no requirement to keep an S.E.C. pole simply because it may be the 'best' crop tree. The requirement is that 10 sq.m/ha of acceptable crop trees are retained. In addition to these crop trees, provision is made to retain a further 5 sq.m/ha of potentially merchantable trees of high value - these are jarrah/marri trees which are within 5cm dbhob of becoming an S.E.C. pole or sawlog, and that meet crop tree specifications. Sheoak crop trees may also be kept within this 5 m^2/ha. A further 1 sq.m/ha of potential pit props may also be retained where appropriate.

When there are less than 10 m^2/ha of jarrah crop trees available for retention, the additional numbers required should be made up with marri or sheoak crop trees if they are available. The total basal area should not exceed 10m^2/ha **OR**. Where significant amounts of marri and sheoak are being considered for retention the alternative option of regenerating rather than thinning must be considered carefully.

After marking the crop trees for retention, all other material is available for commercial removal i.e. sawlogs, S.E.C. poles, chipwood, pit props, minor produce.

3. FOLLOW UP SILVICULTURAL TREATMENT

Following commercial utilisation, areas selected for intensive treatment will have other surplus trees removed non-commercially to reduce competition to the crop trees. This will be done by notching and poisoning on most areas with felling and stump poisoning only in selected special areas.

In patches of forest *where there are 10 m^2/ha or more of jarrah crop trees*, all surplus trees (including banksia) are removed. Trees within 1m of a crop should not be poisoned but felled only to avoid the risk of killing crop trees through root fusion.

Where there are less than 10 m^2/ha of jarrah crop trees, they are released individually from surrounding competition by removing all surplus stems within 4m of the crop tree. This individual release should only be carried out for jarrah crop trees. Marri and sheoak crop trees, while protected from damage by nomination as crop trees do not warrant the additional expenditure of non-commercial release.

4. JARRAH THINNING INTENSITY

Mean DBHOB of best 150 spha at first thinning	Treatment
<20cm	- *release 200 jarrah stems/ha* from overtopping and crown abrasion. The objective is to maintain healthy crown development on future jarrah crop trees but without promoting a permanent low crown break. This may involve more than one treatment as the stand develops
20-25cm *	*thin to 10m^2/ha O.B.* - this will usually be a non commercial thinning. It will leave more than 150 spha but ensures that the stand is not left understocked. A further thinning will be required before the crop trees reach 50 cm dbhob.
25-30cm*	- *thin to 10m^2/ha O.B.* - this is likely to be both a commercial & non-commercial thinning. The remaining trees are capable of reaching 50 cm dbhob without the stand becoming overstocked. (50 years.) More conservative future thinnings will maximise sawlog volume /ha.
40cm	- *thin to 18m^2/ha O.B.* - thin again when crop trees reach 50cm dbhob. Above comments apply.
50cm+	- *thin to 20m^2/ha O.B.*

* Additional jarrah/marri trees within 5cm dbhob of becoming a sawlog or S.E.C. pole or sheoak crop trees may be left to bring the total retained BA to 15m^2/ha, provided these trees are removed within 20 years.

* A further 1m^2/ha of potential pit props may also be retained where appropriate.

F. J. BRADSHAW
MANAGER
SILVICULTURE BRANCH

FJB:SB