



This series on Eucalypts has five parts. Each part can be read individually or as part of the series.

1. **Overview**
2. **Establishment**
3. **Clearwood Production**
4. **Pulpwood Production**
5. **Labour Estimates**

PULPWOOD PRODUCTION

Eucalypt pulpwood plantations are generally suited to larger areas of 10 hectares or more. Site productivity, access for harvesting and distance to markets must be considered. The value to the grower at harvest is relatively small compared to a high quality stand of clearwood *Pinus radiata*, but the time from planting to harvest is usually about half. The cost of harvesting operations, long transport distances and difficult access may be a disadvantage with small scale plantations. Some smaller areas may be viable if they are adjacent to, or in the vicinity of, larger pulpwood plantations that have been established at a similar time. Harvesting may then be undertaken in conjunction with the neighbouring larger plantation.

Once established, pulpwood regimes require little management compared to clearwood regimes. Post-planting weed control, annual monitoring for pests and diseases and potentially later-age fertilising should be included in the management prescriptions. Inventory to determine growth rates is also useful.

Potential Regime Options

1. Carry the initial stocking through to harvest (as young as age 12 on high quality sites to age 20 or more on low quality sites).
2. Undertake commercial thinning at age 8-10 (potentially later on lower productivity sites) with a clearfall final harvest 5-10 years after thinning. This has the advantage of producing early cash flows and larger diameter trees at final harvest because between tree competition is reduced. Commercial thinning at a relatively young age generally requires larger areas and quality sites to ensure sufficient volume by age 8-10. Trees less than age 8 may not meet pulpwood quality requirements. Some market opportunities are developing for knotty sawlogs as a higher valued alternative to pulpwood at final harvest.

Commercial Thinning

Outrows will be required for machinery access during thinning operations. Typically, every 5th row is removed or 20% of the trees. Machinery can then remove selected trees between the remaining rows. Trees thinned between the outrows should be the smaller sub-dominant and suppressed trees, retaining the dominant and co-dominant trees to grow on to final harvest. This is known as thinning from below. The removal of larger trees to increase thinning revenue, or thinning from above, is not recommended as it can result in lower total volume being harvested over the regime.

The following is an example regime for pulpwood production, established on an ex-pasture site with commercial thinning and an anticipated harvest at age 15. Ages indicated for thinning, final harvest and associated management operations will vary with site productivity and landowner intentions.

Year	Time	Silvicultural Operation
-1	~12 months prior to establishment ~6 months prior to establishment	Obtain planning permission from local council (if required). Undertake site planning (mapping of area, weed species, etc). Pre-planting weed control - Spray difficult to control woody weeds such as blackberry or gorse (if present). Order seedlings. Forest Practices Plan (if required). Determine method of browsing control and obtain permits if required.
0	Summer Autumn Autumn to Spring	Graze the site heavily to reduce pasture species. Arrange site inspections and quotes from contractors for establishment. Mark planting lines for initial spraying operations. Pre-planting weed control (pre-cultivation) - Strip spray the planting lines with knockdown herbicides. Cultivation - Ripping and mounding prior to the autumn break. Fencing to exclude stock / browsing animals. Browsing control. Pre-planting weed control - Apply residual herbicides to planting mounds. Planting at desired stocking (eg: 1,000 stems/ha). Fertilising 6-8 weeks post planting and ensure that weeds are adequately controlled prior to fertilising.
1	Early Summer Autumn to Spring	Stocking survey - Determine seedling numbers if re-planting is required. (determine reason for failures and address the issue if possible) Re-planting (if required).
1+	Ongoing	Post-planting weed control - Spot or strip application. Monitoring - Annual inspections for pests and diseases.
7	Winter	Inventory to estimate stand volumes, growth rates, appropriate thinning age and potential volumes for commercial thinning.
8	12-24 months before thinning	Marketing - Arrange sale contract and harvesting contractor. Forest Practices Plan (required for commercial thinning).
9	Dry conditions	Commercial thinning.
13	Winter	Inventory to estimate standing volumes, growth rates, appropriate clearfell age and potential volumes for clearfell harvest.
14	12-24 months before clearfall	Marketing - Arrange sale contract and harvesting contractor. Forest Practices Plan (required for clearfall harvest).
15	Dry conditions	Final harvest.

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