Radiata Pine

Info Sheet No. 4 – Labour Estimates

Private Forests Tasmania

This series on Radiata Pine has four parts. Each part can be read individually or as part of the series.

1. Overview
2. Establishment
3. Management regimes
4. **Labour Estimates**

LABOUR ESTIMATES Notes: *see important explanatory notes on page 2.*

Activity Silvicultural Operation		Year	Timing	Labour Hours/ha
Establishment *(Planning and silvicultural activities to ensure successful establishment)*				
FPP / Management Planning [1]		-1	~12 months prior to planting	-
Seedlings [2]		-1		-
Weed Control [3]		-1		0 - 2
Plantation Layout [4]		0	Late Summer to Early Autumn	1
Weed Control [5]		0		1 - 2
Cultivation [6]		0		1 - 2
Fencing & Browsing Control [7]		0		2 - 5
Weed Control [8]		0	Late Autumn to Early Spring	1 - 2
Planting [9]		0		7 - 12
Fertilising [10]		0		4 - 5
Weed Control [11]		1		4 - 5
TOTAL *- Establishment* (Approximately 1000 stems/ha)				**21-36**
Management *(Pruning & Thinning)*				
Form Pruning [12]		2	Spring	2 - 3
Pruning [13]	1st Lift	3		24 - 30
	2nd Lift	4		22 - 28
	3rd Lift	5		20 - 25
	Final Lift	6		10 - 12
Pruning (Total for pruning to 6.4m)				*78 - 98*
Pruning assessment (total for 4 lifts) [14]		3-6		2 - 3
Non-Commercial Thinning [15]		6		16 - 20
TOTAL *- Management (Pruning & Thinning)* Approx. 300 stems/ha				**96 – 121**
Total – Establishment & Management ***Approx 300 stems/ha for clearwood production***				**117 - 157**

Note *- Estimates are a guide only and may vary depending upon a number of factors.*

Most operations can be undertaken by landowners with basic training in silvicultural techniques.

Labour (hours/ha) is estimated time required for landowners to undertake silvicultural operations and will vary between landowners, depending upon experience and site conditions. Fencing (if required) is usually the greatest cost associated with establishment and can vary considerably depending upon type of fence, terrain and area to perimeter ratio.

1. Forest Practice Plan (FPP) and management plan by consultant - cost can vary depending upon the level of planning required. Planning permission from local council (if required) will add additional costs.
2. Seedling costs can vary considerably depending on the nursery and seedling type. It is recommended to gain quotes from several nurseries.
3. Weed control conducted ~12 months prior to planting to control woody weeds such as blackberry (not required all sites).
4. Marking of planting lines for strip application of knockdown herbicides prior to cultivation. Materials (e.g. coloured markers) are required for layout. This is very useful if there is limited experience with establishment to ensure correct spacing and stocking is achieved.
5. Strip application of knockdown herbicides (pre-cultivation).
6. Cultivation (ripping and mounding) in accordance with FPP. Steep sites and soil erodibility may place restrictions upon cultivation. Small equipment (e.g. mound plough and farm tractor) at the lower end of the cost range. Large dozer at the high end of the range.
7. Fencing to exclude stock and native animals. Labour requirement very variable. Poisoning program and/or shooting required if fencing is not wildlife-proof.
8. Strip application of residual herbicide applied to planting mounds.
9. Pottiputki used with containerised stock. Spade used for open-rooted seedlings. Planting flat cultivated ground at the lower end of the cost range. Planting uncultivated soil and steep slopes at higher end of the range. Labour rate based on planting 100-150 containerised seedlings / hour or 80-120 open-rooted seedlings / hour.
10. Fertiliser (based on 100g DAP / tree). Labour rate based on fertilising 200-250 seedlings/hour.
11. Post-planting weed control with hexazinone granular herbicide. Labour rate based on releasing 200-250 trees / hour.
12. Light form pruning from the ground. Not required all sites.
13. Variable lift clearwood pruning based on 12-15 trees / hour. Earlier lifts require less pruning time / tree, although greater number / ha are pruned. 4th and final lift assumes the completion of pruning to 6.4m on 50% of trees.
    1st lift (assumption that 20% extra pruned - 360 trees pruned / ha).
    2nd lift (assumption that 10% extra pruned - 330 trees pruned / ha).
    3rd & 4th lift (final stocking of 300 trees pruned / ha).

14. Landowner labour rate based upon 5-6 hours / lift to establish and measure pruning assessment plots.
15. Non-Commercial thinning to the final stocking of 300 pruned stems / ha (assuming an initial stocking of 1000 stems / ha). Labour rate based upon felling 35-45 stems / hour.

NB - *contractors can be contracted to undertake silvicultural work, costs will vary from site to site and quotes should be obtained and job specifications agreed before any work commencing.*
Costs such as Forest Practice Plans tend to have fixed costs rather than being dependent upon the area established.

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