

Private Forests Tasmania

Farm Forestry Series - Radiata Pine



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

1. Why Grow Radiata Pine for Farm Forestry?
2. Establishment
3. Pruning for Clearwood
4. Cost and Labour Estimates

COST & LABOUR ESTIMATES

Activity Silvicultural Operation	Year	Timing	Cost \$/ha	Labour Hours/ha	
<i>Establishment (Planning and silvicultural activities to ensure successful establishment)</i>					
FPP / Management Planning ¹	-1	~12 months prior to planting	75	-	
Seedlings ²	-1		250 - 375	-	
Weed Control ³	-1		0 - 100	0 - 2	
Plantation Layout ⁴	0	Late Summer to Early Autumn	20 - 30	1	
Weed Control ⁵	0		50 - 100	1 - 2	
Cultivation ⁶	0		100 - 250	1 - 2	
Fencing & Browsing Control ⁷	0	Late Autumn to Early Spring	250 - 800	2 - 5	
Weed Control ⁸	0		80 - 120	1 - 2	
Planting ⁹	0		140 - 300	7 - 12	
Fertilising ¹⁰	0	Early Spring	120 - 160	4 - 5	
Weed Control ¹¹	1		150 - 200	4 - 5	
<i>TOTAL - Establishment</i> (Approx \$1.25-\$2.50/tree @ 1000 stems/ha) (Approx. \$4-\$8/tree for clearwood production @ 300 stems/ha)			1235-2510	21-36	
<i>Management (Pruning & Thinning)</i>					
Form Pruning ¹²	2	Spring	40 - 60	2 - 3	
Pruning ¹³	1 st Lift		3	410 - 490	24 - 30
	2 nd Lift		4	450 - 510	22 - 28
	3 rd Lift		5	470 - 530	20 - 25
	Final Lift		6	230 - 260	10 - 12
<i>Pruning (Total for pruning to 6.4m)</i>			1600 - 1850	78 - 98	
PSC (total for 4 lifts) ¹⁴	3-6		100 - 120	2 - 3	
Non-Commercial Thinning ¹⁵	6		420 - 490	16 - 20	
<i>TOTAL - Management (Pruning & Thinning)</i> Approx. \$7-\$8/tree for clearwood production @ 300 stems/ha			2120 - 2460	96 - 121	

NB Estimates are a guide only and may vary depending upon a number of factors.

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

Estimated cost (\$/ha) is for contractors to undertake silvicultural work. Actual costs will vary from site to site and quotes should be obtained. 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. Costs such as Forest Practice Plans and Pruned Stand Certification tend to have fixed costs rather than being dependent upon the area established. Costs for these activities have assumed the establishment of a 10 ha site with high productivity and a final stocking of 300 pruned stems per hectare.¹

1. Forest Practice Plan (FPP) and management plan by consultant @ \$750. Cost can vary depending upon the level of planning required. Planning permission from local council (if required) will add additional costs.
2. Seedlings 1000 stems / ha (2.5m x 4.0m) Open-pollinated seedlings @ \$0.25-0.30 each (\$250-300)
833 stems / ha (3.0m x 4.0m) Control pollinated seedlings @ \$0.40-\$0.45 each (\$333-\$375)
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 (eg: 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). Chemical cost of \$20-30/ha.
6. Cultivation (ripping and mounding) in accordance with FPP. Steep sites and soil erodibility may place restrictions upon cultivation. Small equipment (eg: PFT 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. Assumption of 1400m of fencing for a 10 ha site (500m x 200m). Electric fencing to exclude stock @ \$1500/km (~\$200/ha). Wildlife-proof fencing @ \$6000/km (~\$800/ha). Poisoning program (~\$50/ha) and/or shooting required if fencing is not wildlife-proof.
8. Strip application of residual herbicide applied to planting mounds. Residual herbicide (eg: hexazinone) with a chemical cost of ~75/ha (strip application amounting to ~50% of total area).
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. Containerised stock @ \$125-\$250 / 1000. Open-rooted stock @ \$150-\$300/1000. Labour rate based on planting 100-150 containerised seedlings / hour or 80-120 open-rooted seedlings/hour.
10. Fertiliser @ ~\$60/ha (based on 100g DAP / tree). Labour rate based on fertilising 200-250 seedlings/hour.
11. Post-planting weed control with hexazinone granular herbicide. Chemical cost of ~\$75/ha for granules. 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 grater number / ha are pruned. 4th and final lift assumes the completion of pruning to 6.4m on 50% of trees.
1st lift @ \$1.15-\$1.35 / tree (assumption that 20% extra pruned - 360 trees pruned / ha)
2nd lift @ \$1.35 - \$1.55 / tree (assumption that 10% extra pruned - 330 trees pruned / ha)
3rd & 4th lift @ \$1.55 - \$1.75 / tree (final stocking of 300 trees pruned / ha)
14. Pruned Stand Certification - Estimate of \$250-300 / lift for consultant to establish and measure all PSC plots or \$150 for audit following landowner measurements. Landowner labour rate based upon 5-6 hours / lift to establish and measure PSC plots.
15. Non-Commercial thinning @ \$0.60-\$0.70 / tree 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.

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