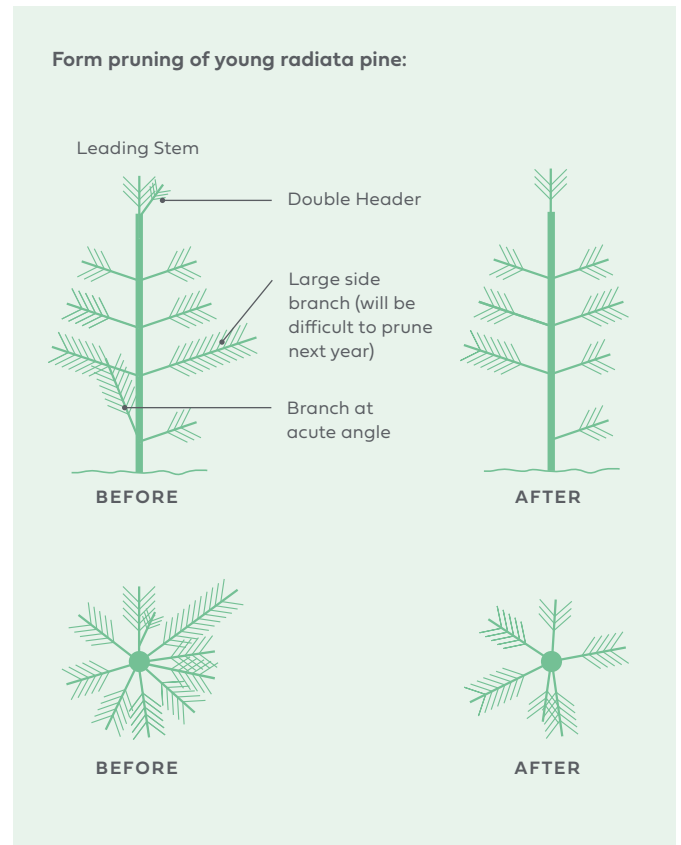


Form pruning.

- Assists the tree to meet the rules for tree selection
- Begin two to four years after planting and continue until the tree trunk is pruned to the desired harvest height
- Involves the removal of branches from the crown. These branches may be large branches which are competing with the main stem or those that are developing at a steep angle
- Branches radiate from the trunk like spokes in a wheel on a radiata pine. This is called a whorl
- Whorls crowded with branches are called basket whorls. These often occur between two to six years of growth and lead to poor quality timber
- Reduce the number of branches to four per whorl
- Concentrate on basket whorls first when form pruning a radiata pine. Then remove acute branches and tip prune the large branches.
Never remove more than 50% of the green crown as tree growth will be adversely effected
- Form pruning may be essential in hardwood species and eucalypts as control of branch size is critical to minimise the risk of decay entry in eucalypts
- In fast-growing *Eucalyptus globulus* and *Eucalyptus nitens* lower branches may be retained for a long time even after they have died. Pruning is essential if clearwood is to develop









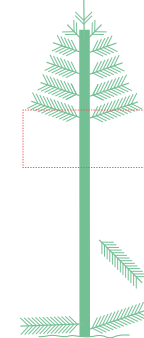
Clearwood pruning.

In uniform stands clearwood pruning is usually conducted in a series of 'lifts' to 2.4m, 4.4m and finally to 6.4m. In stands of variable growth rates containing short and tall trees, prune each tree as it reaches the desired height.

RADIATA PINE

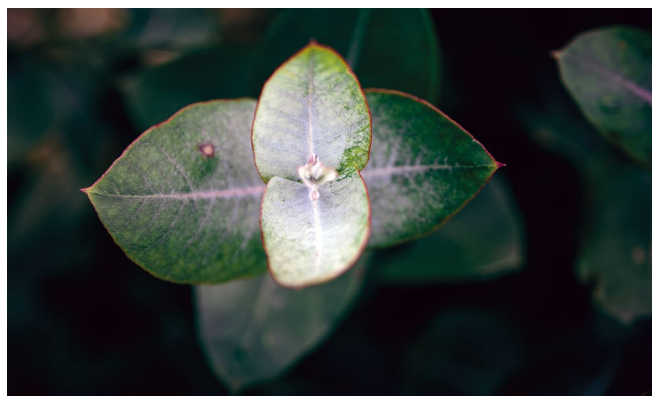
- Begin when the trees are 4-6m tall
- Prune lowest branches first, working up the trunk
- Leave 3-4m of green crown at the top of the tree. As a guide, remove only the branches below the point where the trunk diameter exceeds 10cm in slow-growing trees and 8cm in fast-growing trees
- Form prune above the clearwood pruned trunk to ensure a single straight stem and to control large acutely angled branches
- Prune the trunk to the desired saleable log length
- Remove epicormics shoots and sprouts on the stems of pruned trees
- Record the diameter over stubs (DOS) of the largest pruned whorl. Maintain a uniform DOS from first to last pruning. The DOS (or defect core) determines log quality. Keeping records of DOS can be beneficial for pruning accreditation

Pruning guidelines for radiata pine:

Pruning Visit	1	2	3	4	5	6	7
Type of Pruning	Form Pruning		Form and Clearwood Pruning			Clearwood Pruning	
Tree Height (metres)	1.0 - 2.5	2.5 - 3.5	4 - 5	5 - 6	6 - 7	7 - 8	8 - 9
Pruned Height (metres)	-	-	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6
9 -							
8 -							
7 -							
6 -							
5 -							
4 -							
3 -							
2 -							
1 -							
Pruning visits will be every 6-8 months depending on tree growth rate and quality of timber desired to be produced	Prune - Large branches - Acute branches - Double leaders - Basket whorls <i>Using pruning shears</i>		- Prune up the trunk leaving 3 to 4 metres of green crown - At each visit never remove more than 50% of the green crown - Continue to form prune large and acutely angled branches and basket whorls - Rub off any shoots on the pruned trunk between visits - Continue clearwood pruning until the desired log length is reached - this may take 3 to 6 pruning visits <i>Using pruning shears and saws and pruning where necessary</i>				

EUCALYPTS

- Prune in early spring to coincide with the start of a period of rapid diameter growth as this will allow rapid occlusion (growing over) of branch stubs
- In blocks of trees planted at 800-1300 stems per hectare, first-lift pruning can coincide with canopy closure. At this time, the tree has a natural tendency for crowns to lose their lower foliage. The tree is able to compensate for this loss in growth potential by increasing the activity of the retained crown for several months after pruning
- In fast-growing *E. nitens* up to 50% of green crown length can be removed without significant impact on height and diameter growth of the pruned trees compared to unpruned trees
- In slower-growing trees, this ability to compensate for loss of growth potential is reduced. Therefore, be more conservative and remove less green crown length when pruning



Preventing disease and decay in eucalypts:

Decay may invade the stem through the cut face of branch stubs following pruning. Take these steps to minimise the risk:

- If pruning in summer to mid-autumn avoid warm to hot days with the potential for rain. Moist, warm conditions are ideal for the spread and survival of decay fungi
- Prune branches before they reach 3cm in diameter
- Avoid trees that have branches forming an acute angle (less than 30%) with the stem
- Do not damage the branch collar
- Make an undercut on the branch to avoid tearing bark from the branch collar if using a pruning saw. Undercuts need to be closer to the stem than the final cut from above to prevent a ridge being formed on the cut face
- The table below outlines a procedure that can be followed for eucalypts based on DBHob and/or height of dominant trees. It will result in a DOS or defect core of about 15cm diameter:

Age	Stand Conditions	Operation
0	Initial stocking	Plant 800-1,200 stems/ha
3 or 4	250 prunable trees/ha DBHob of prunable trees 8-10cm Height of dominants >9.5m	Select and low prune best 250 stems/ha to 2.7m height
4 or 5	DBHob of pruned trees 10-12cm Height of dominants >9.5m	Prune selected stems to 4.5m height
5 or 6	DBHob of pruned trees 11-13cm Height of dominants >12m	Prune selected stems to 6.4m height