

# **SPECIFICATION 6 - P. RADIATA VARIABLE LIFT AND FIXED LIFT PRUNING**

This Specification applies to pruning operations in any working block allocated to the Contractor by Pan Pac. It covers work associated with variable lift and fixed lift pruning as a means of producing high quality knot free timber by removing all branches up to a specified stem diameter or height.

## **1. OBJECTIVE**

To document the correct procedure and method for selecting crop trees and removing branches according to the job prescription and stocking.

## **2. ALLOCATION OF WORKING BLOCK**

The Company will allocate the contractor a stand to pruned with the associated prescription, contract note and stand map.

## **3. COMPANY'S RESPONSIBILITIES**

The Company will supply to the Contractor, prior to the commencement of work, the following:

- A map showing the boundary of each area for variable lift or fixed lift pruning and restricted areas.
- A Job Prescription showing:
  - the prescribed pruned stocking target
  - target prune height and lift
  - estimate of pruned and total stocking of existing pruning operations
  - selection criteria
  - quality criteria
  - any special instructions.
- A Contract note
- List of known physical hazards within the stand.

## **4. DEFINITIONS**

- Working Block means the defined area of forest or forests.
- Stand means a defined area of forest in which all trees were planted in the same year.
- The DBH is the diameter at breast height, which is measured at 1.4m from the highest point at which the stem intersects the ground. If 1.4m is on a whorl the diameter will be measured in the internode above and below the whorl and then averaged to give the DBH. DBH will be measured with a diameter tape to the nearest millimetre.
- The DOS is the diameter over stubs of the largest whorl removed in the current lift. DOS is to be measured with a diameter tape to the nearest millimetre.
- Pruned height is the distance from the highest point at which the stem intersects the ground to the first remaining branch, epicormics or green needles or in the case of second or third lift operation it is the distance from the top of the previously pruned branch stubs to the first remaining branch epicormic or green needles. This is to be measured to the nearest 0.1metre.
- Stem diameter is measured by calliper or gauge set to the specified diameter and measured at the narrowest part of the internode.
- A whorl is a group of three or more branches longer than 50cm, separated from any other whorl by at least 5cm up or down the stem.
- An epicormic is a needle growth or shoot that may develop into small branches. All epicormics whether live or dead should be removed at time of pruning.

## 5. SELECTION CRITERIA FOR PRUNED TREES

### Introduction

It is the Contractor's responsibility to select as crop, the trees which have potential to be the most valuable at time of clearfell (usually age 30).

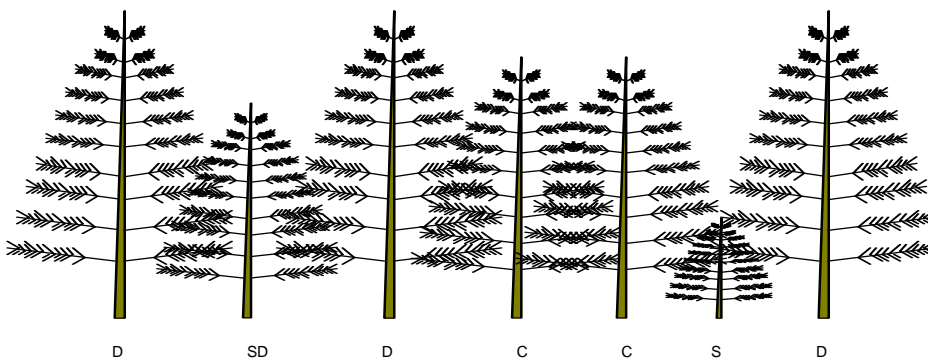
**Trees are to be selected for pruning in the following order of importance:**

### Previously Pruned Acceptable Trees

It is important to check that these trees still meet selection requirements.

### Vigour

Dominant or co-dominant in diameter, height and health. Dominant trees should be selected, however, a smaller co-dominant tree of good form should be pruned in preference to a larger, badly malformed dominant tree.



D = DOMINANTS  
Tallest trees above avg.  
crown and diameter

C = CO-DOMINANTS  
Average height  
crown and diameter

SD = SUB-DOMINANTS  
Below average height  
crown and diameter

S = SUPPRESSED  
Smaller trees in stand

Note: A tree should be judged by comparison with its neighbours, not with trees in other stands or parts of the same stand.

### Form

Select straight, single-leadered trees where possible.

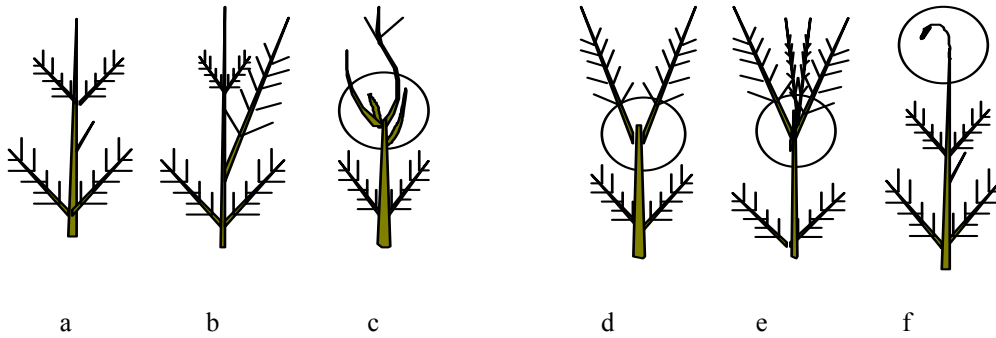
If it is not possible to achieve the prescribed stocking then an acceptable tree for pruning can have the following defects:

- Butt sweep below 0.5m,
- Kink or wobble less than one diameter deviation of the stem.
- Lean of less than 5 degrees (this is equal to 10cm from the vertical line at 1.4m)
- A heavy lateral branch (less than 100mm).

A tree may also be considered as an acceptable crop tree suitable for pruning if the following defects occur over 5.5m above the ground i.e. clear of the zone to be pruned to ...pruned if it has a fork, kink, multi-leader or large branch and this defect occurs above 4.5 metres.

A branch which is greater than 100mm and occurs on the stem above 4.0 metres should not be pruned and should be treated as a defect.

## Tree Leaders



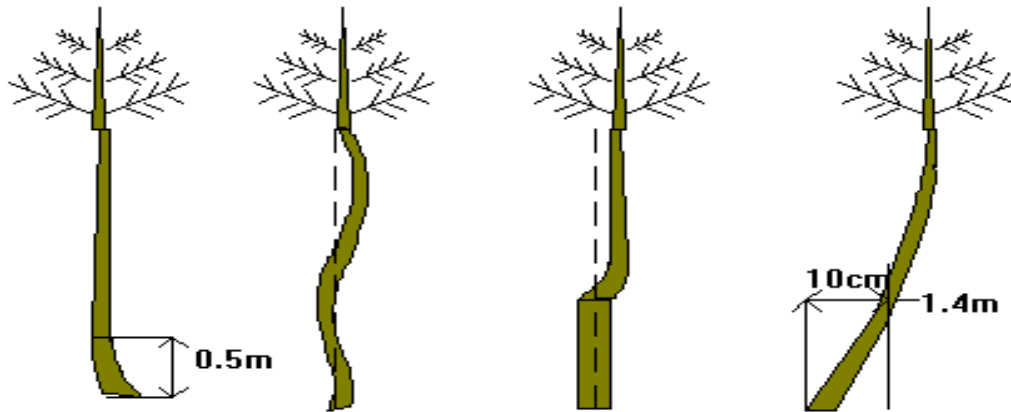
### **Most Preferred**

- a. Single live leader - most desirable
- b. Unequally vigorous forked leader
- c. Single leader developed after death of original acceptable leader

### **Least Preferred**

- d. Equally forked leader
- e. Multiforked leader
- f. Dead leader

### **Acceptable and Non-acceptable Defects**



- 1. Butt sweep**  
< 0.5 m is acceptable
- 2. Wobble**  
> 1 diameter deviation is not acceptable
- 2. Kink**
- 3. Lean**  
< 10cm at 1.4m is acceptable

## Branching

This is secondary to vigour, health and form. If two trees have similar vigour health and form then prune the tree with the smallest branches. Assess all branches above and below the prune height.

## Spacing

Do not prune the tree within 2 metres of another.

Adjust the number of pruned trees to make up for gaps in the stand so that the overall stocking numbers are maintained.

## **6. PRUNED HEIGHTS**

Trees shall only be pruned by the Contractor up to the prescribed internode diameter (gauge pruning) and/or specified height (fixed lift) while maintaining the minimum green crown as specified on the stand prescription.

The Contractor will prune from every tree:

- All branches,
- Live or dead twigs,
- Live or dead epicormic growths and needles,
- Stem cones.

Branches must be cut flush with the branch collar. The branch collar must not be damaged by the Contractor.

## 7. RESTRICTIONS

Permanent sample plots and trial areas are **not to be pruned** or marked with paint unless specifically instructed by the Company. PSP's and trials can be identified by posts or pegs, yellow paint or the signage  $\neq$ . Do not in any interfere in any way with pegs, post and/or paint marking. **If in doubt ask first.**

All roads, tracks, watertables, fences and streams are to be kept free of pruning slash.

The Contractor must place all branches behind the first row of trees on road edges or fire breaks.

## 8. PAYMENT DEDUCTIONS:

The Company requires the Contractor to carry out formal quality checks to determine the quality of the pruning is to these Job Specifications, the contract note and the pruning prescription. This information must be made available on a weekly basis.

The Company will sample at least 1 plot per 2.5 hectares of the operation. The Contractor may witness such sampling. Pruning defects have been rated and given demerits points as follows:

- |                                     |                     |
|-------------------------------------|---------------------|
| • Acceptable unpruned               | Demerit Points = 10 |
| • Reject selection                  | Demerit Points = 10 |
| • Over pruning (> Gauge or height)  | Demerit Points = 7  |
| • Under pruning (< Gauge or height) | Demerit Points = 7  |
| • Twigs/Branches/Cones              | Demerit Points = 7  |
| • Collar damage                     | Demerit Points = 5  |
| • Branch Tear/Branch Stubs          | Demerit Points = 5  |
| • Stem Damage                       | Demerit Points = 5  |
| • Coathangers                       | Demerit Points = 5  |
| • Feathering                        | Demerit Points = 5  |
| • Epicormics/Needles                | Demerit Points = 5  |

If more than one fault occurs on a tree than the maximum number of demerit points for that tree is equal to the single highest fault. In other words, if a tree has one or many of the same fault, for example, epicormics, the demerit points are a total of 5. Furthermore, if a tree has one or many multiple faults, for example 1 branch, 3 epicormics and is a reject selection, the demerit points are 10 (Reject selection is the single highest fault).

If the total demerit points equal 20, then the Contractor may receive written advice from the Company to rework the area before payment is made.

The Company will determine the size of the rework area. The size of the rework area will reflect the number of plots i.e. 2 plots per 5 hectares.

The Company may charge the Contractor for the cost of replotting the area. The Contractor will be advised in writing before this deduction from payment is made.

The Company shall have the right to stand down the Contractor and cancel the contract if demerits continue or damage to pruned crop becomes excessive.

Lastly, the Company may withhold payment if the appropriate documentation related to the prescription (e.g. Weekly Production and Quality Sheet) are not provided prior to the mark up dates specified for Forestry Contractor Payments.