



GROWING EUCALYPTS FOR TIMBER

Pruning eucalypts for clearwood

Information Note 4

Clearwood pruning enables the tree to produce clearwood (knot-free wood). It involves the removal of whole branches from the tree.

Once the branches are removed, the pruning wounds heal and clearwood grows over the wounds for the remainder of the tree's life. Clearwood is generally the most valuable timber. Most eucalypt growers aim to produce a high-value clearwood butt-log of at least 6 metres in length, with lower-value knotty timber above that.

UNDERSTANDING DOS

DOS is the 'diameter over stubs' of a pruned stem, conventionally measured with a diameter tape around the lowest, or fattest, whorl of cut stubs after pruning. DOS is an important measure because it determines the size of the 'knotty core' of the stem. The knotty core is rejected when a log is milled so should be minimised. Controlling the size of the knotty core is done by pruning while the stem diameter of the tree is within certain size limits.

Two factors influence the size of the knotty core – the size of the stem when pruning initially begins, and pruning frequency.

WHEN SHOULD I BEGIN CLEARWOOD PRUNING?

Age 3-4 years is a good estimate of when fast-growing eucalypts will be ready for their first clearwood pruning lift. By this time the stem should be sturdy with a DOS of 8-12 cm. Each pruning lift needs to be to a height sufficient to ensure the DOS does not exceed the target size (12 cm is a good target) by the time you come back for the next lift. Because eucalypts can be so fast growing, annual pruning may be needed to keep the DOS within target.

HOW MANY TREES DO I NEED TO PRUNE?

There is no need to prune every tree. Recommended final crop stocking depends on the target market. If you plan to grow sawlogs, a final crop of around 250-450 stems per hectare is optimum. So if you have planted 1100 stems per hectare, initially select the best 30-40% for pruning (allowing for some mortality and later rejects).

If you are planning to grow eucalypts for posts and poles, a final crop of 400-600 stems per hectare may be optimum. These trees should not require clearwood pruning but need to be form-pruned early in the rotation.



5-year old *E. quadrangulata*, ready for its first clearwood pruning lift.

PRUNING TECHNIQUE

Clearwood pruning involves removal of all branches up to a target height.

First visually evaluate the tree, and decide how high you are going to prune up to. You should aim to remove no more than 50-60% of the green crown. Eucalypts can be pruned quite hard without impacting severely on growth. Keep in mind that diameter growth is not what you require while still pruning the tree, what is more important is minimising DOS.

Remove all branches, however small, up to your target height. Avoid tearing or otherwise damaging the bark on the stem. Dead branches should be removed to avoid the risk of having black knots in the clearwood – if these dead branches are loose they should be pulled out of the 'socket' or if they are tight they should be cut off as close to the trunk as possible.

Pruning cuts should be tidy and almost flush with the nodal swelling that the branch grows out of on the stem; it is better to leave a small pruning stub (<10mm) rather than damage the stem and the node. The bigger the pruning scar is, the longer it will take to heal and thus the longer the tree is exposed to pathogens.

At the same time, check the stem above the pruned height, and take the opportunity to remove any major forks or large branches that have developed since the tree was form pruned. These will only get worse if not removed this year.

WHEN SHOULD I PRUNE?

Pruning can be done at any time of year. Prune during dry conditions, and ideally in summer, to avoid the risk of silverleaf disease, which is fatal.

HOW OFTEN AND HOW HIGH DO I GO?

The more often you prune, the smaller the amount of green crown you will need to remove at each lift, and the faster the tree will grow; however, with faster growth you will have to return sooner to ensure the next lift doesn't have a DOS outside your target size. Remember, pruning on time will keep branch sizes and DOS small and result in high quality sawlogs.

Prune at regular intervals (every year is best) until you have reached the target height of your pruned butt log. Most growers consider pruning to around 6-7 metres as 'high enough', but eucalypts can grow to great heights so growers sometimes prune to 10 metres or more. To make high lift pruning worthwhile the rotation length needs to be increased and the stocking decreased.



Before pruning.



Loppers correctly placed.



A correctly cut branch stub.



A 5-year old log showing heartwood developing and an occluded dead branch stub.

ARE ALL EUCALYPT SPECIES THE SAME WHEN IT COMES TO PRUNING?

Many eucalypts shed their smaller branches naturally (self-prune), but larger branches persist and therefore should be pruned off. The amount of self-pruning depends on species and spacing. The stringybark group of eucalypts tend to self-prune well, provided the initial stocking is high enough.

WHAT TOOLS DO I NEED?

The standard pruning kit includes secateurs, loppers, and a small jacksaw or pruning saw. All tools should be sharp, and be the right size and weight for the person using them and the job at hand.

As the trees grow you will need pruning ladders. Pruning ladders are lightweight, designed for the job, and available in a range of sizes to suit different pruning heights. Always use a harness when pruning above 4 metres up a ladder.

A top-handled pruning chainsaw is a useful additional tool in the hands of an experienced user. Approved safety gear is essential for chainsaw users. Generally if the tree requires chainsaw pruning it is too late and the value of the tree will not be improved by pruning. Unpruned trees still have value as sawlogs.



5-year old *E. globoidea*, following a first pruning lift and thin.



Ladder pruning.

Photos: John Milne, Harriet Palmer.

MORE INFORMATION

The best source of information on growing eucalypts for timber is the NZFFA Eucalypt Action group. We recommend you join this group.

This information note is one of a series produced by the NZ Farm Forestry Association with funding from the MPI Sustainable Farming Fund. A series of videos is also available.

www.nzffa.org.nz

