

Plantation establishment includes site preparation, control of grass and weeds, tree planting, fertilising, vermin control and replanting. Establishment can take up to 12 to 18 months. The primary aim is to gain 100% survival of the plants and fast, early and uniform tree growth. All work should be done to prescription. Make sure you understand what you are doing and get the timing of operations right, if not seek professional advice. Each establishment activity is like the link in a chain – if one fails, the chain breaks!

Plantation establishment activities, summarized below, are:

- Site and species selection
- Protecting the investment
- Site preparation
- Browsing animal control
- Grass and weed competition management
- Planting and fertilizing
- Fire, pests and disease management

For further detailed information on most plantation operations please refer to their individual Private Forests Information sheet where available.

Site and species selection

Commercial plantations should not be seen as a use for land that has little value for other purposes. There are standards of soil fertility, depth and drainage, and of rainfall or moisture supply that must be met. These must be matched to the tree species, with consideration of the area available, access, topography and markets. Commercial plantations are usually radiata pine, eucalypts or blackwood. Although there are minor differences in establishment techniques, similar principles generally apply. (*See Information Series No 1. – Selecting Species and Site*)

Protecting the investment

Establishment of a plantation is an investment for the future. It is necessary to protect this investment in several practical ways, starting some months before the young trees are in the ground. As the financial returns occur later than most other investments, it is necessary to maintain this protection in the long term, by cultural activities which maximise the quality and quantity of wood produced. Establishment, to be successful, needs to be well planned and implemented.

Site preparation

Except on very steep slopes, site preparation usually involves mechanical cultivation, frequently a combination of deep ripping and ploughing, using heavy equipment. Some clearing of previous growth or debris and weed control may first be necessary. There are operational options that encompass the full range of ground preparation activities. Generally, the more complete and thorough use of these options, the greater the cumulative

or synergistic effect on survival and tree growth. On the other hand, overspending on these options makes an adequate return on capital invested more difficult to achieve. Spend just enough to do the job properly. (*See Information Series No. 6 – Site Preparation*)

Browsing animals

Protection from browsing and weed competition is absolutely crucial to success. Domestic stock must be excluded, from the word 'go', by fencing. Rabbits, hares, wallabies and possums are more difficult and costly to fence against, and shooting or poisoning may be necessary before and after planting. (*See Information Series No. 9 – Browsing Damage to Seedlings*)

Grass and weed competition

Grass competition is responsible for the failure of more farm plantations than perhaps any other single cause. Application of knockdown and residual herbicides, either before planting and/or after planting, or both, will control grass and woody weeds until the trees are established. Some follow up may be necessary for more persistent types of woody weeds such as blackberry and wattle. (*See Information Series No 7 – Weed Control*)

Planting and fertilising

Although there is a trend to mechanisation of these operations, reputable contract gangs can carry them out effectively by hand and according to well-developed prescriptions.

Fire, pests and diseases

Fire protection begins with site selection and preparation, and setting out of firebreaks if necessary. Firebreak maintenance is an ongoing concern. Insurance should be investigated at the outset. Except for vermin, plantation species in Tasmania are remarkably free, or tolerant of, other pests and diseases. One concern is leaf eating beetles in eucalypts, which can seasonally build up to very high numbers and seriously retard tree growth. Plantations need to be monitored and when critical levels have been reached spraying should be initiated. A range of practices are needed for successful tree establishment. The following diagram shows the relative contribution different practices make to early tree growth. (*See s Information Series No 10. – Pests and Diseases*)

Table 1: Relative percentage contribution to tree growth

Relative percentage contribution to tree growth	General Contribution of Cultural Practices to Tree Growth			
	Nursery	Year of planting	2 years after planting	5 years after planting
100			Fertiliser	Fertiliser
90	Containers/Media	Cultivation		
80				Weed control
70	Inoculation		Weed control	
60		Fertiliser		
50				
40	Fertiliser			
30				Tree breeding

20		Weed control	Tree breeding	
10	Weed Control			
0	Tree breeding	Tree breeding		

ACKNOWLEDGEMENTS

Thanks to Neil Parker and Arthur Lyons for input.

This information has been prepared by Private Forests Tasmania. Every reasonable endeavor has been used to ensure that the material was accurate at the time of publication. However, Private Forests Tasmania takes no responsibility for the accuracy, completeness or relevance of such information or for matters arising from changed circumstances or information or material which may have become available subsequently. This information is introductory in nature and should not be treated as a substitute for specific advice or relied on as a basis for business decisions. Before undertaking any significant forestry project it is recommended that you seek personal professional advice directly from a forestry professional on the particular matter.