

Planting Guidelines and Standards for Planting and Maintenance Works

Introduction

This Planting guide has been prepared to provide staff and contractors a works Standard for planting tubestock.

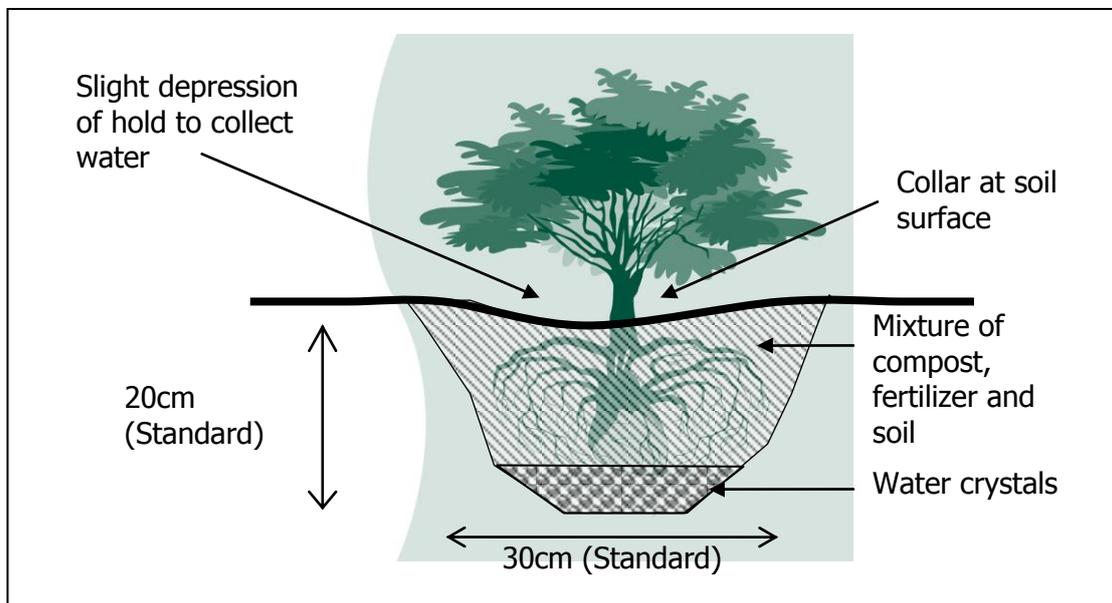
Management of Tubestock

All tubestock to be weed free and well watered prior to planting. If it is observed that weed seedlings or bryophytes are present on the tubestock it is the responsibility of the contract planters to weed the tubestock.

All pots and trays to be stacked in an agreed designated area within a site. Pots and trays that are left around site are the responsibility of the contractor to manage and to stockpile.

Preparation of planting hole

A standard planting hole will be dug to an approximate depth of 30cm and 20cm width and have water crystals placed at the bottom of the hole. A mixture of compost and slow release fertilizer mixed with the soil from the hole will then be added ready for planting. This will provide a fertile, aerated substrate for successful seedling establishment. See Figure 1.



Variations on hole size may occur in specific circumstances -for example: planting on steep batters will require small deep holes with a steep front lip and are best created with a crow bar.

Fertilisers

Fertiliser will be in the form of certified pathogen-free pelletised chicken manure and slow release fertilizer at a ratio of 60:40. Fertiliser addition to each hole will occur at the rate of 20 – 30 grams per hole. This is about half a large handful of fertiliser for each planting hole. Fertilisers need to be mixed with compost or local soils on back filling of the hole. These fertilizers protect against phytotoxic response by the seedlings. Direct incorporation into the planting holes reduces the amount of available nutrients to weed species during the site rehabilitation phase.

Water crystals

Each planting hole will have **pre wetted** water crystals at about one cup mixed with the planting medium prior to planting. Dry water crystals need to be mixed at least one hour prior to use. One cup of water crystal is required for about 60L of water.

Mulch - Soil protection

Rice straw mulch is the recommended mulch as any crop seed or any weed species will not persist due to their being frost tender and water dependent.

Straw is good for slopes of less than 30%. At slopes greater than this, log ladders, hydro mulching and jute matting are preferable.

One straw bale can spread to approximately 20 square metres at a depth of about 10 to 15 centimetres deep. Straw needs to be wetted down after it has been spread to help secure it to the ground and 'stick' it to the ground.

Straw can also be secured with wood thatch. Thatch is dead plant material consisting of shrub canopies, small gauge branches and any wood that can be manually handled. Thatch needs to be spread thicker where the prevailing wind usually comes from.

If jute matting is to be used it is important that it is anchored properly. Matting can be anchored by digging a trench at least 200mm deep at the top of the batter that the matting will be used on. The matting is then rolled around a star picket or long stick and placed in the trench. This can then be back filled and the mat rolled down the slope. It needs to have the edges placed so that the prevailing wind pushes the edge of the matting down. Overlap must be at least 100mm and pinned with the appropriate pins for the soil type.

Watering in requirements

Plants **must** be watered on the day of planting at a rate of 4 - 5L per plant. This also pushes soil around the root system preventing air pockets forming. The initial watering in phase is very important because lack of water is one of the most common reasons of death amongst seedlings.

Weed Control

The following is a table with a general guide to herbicide rates for many weeds on revegetation sites. It is a guide only.

Weed species	Control treatment	Timing
<i>Agrostis capillaries</i> Brown top bent grass	Fluazifop – P- butyl	Actively growing
<i>Hypericum perforatum</i> St Johns Wart	Tricopyr+picloram - 1ml/L Fluroxypyr - 200g/L Glyphosate - 10ml/L	Spring to mid summer Spring to mid summer Actively growing
<i>Rubus fruticosus</i> Blackberry	Tricopyr+picloram @1ml/L Glyphosate + metsulfuron	Late spring to early autumn when plants are actively growing
<i>Echium vulgare</i> Vipers Bugloss	2,4-D amine 20ml/15L 2,4-D ester 800g/L Piclorum + 2,4-D 15ml/10L Glyphosate - 10ml/L MCPA – 500g/L	Young rosettes Seedling to rosettes Rosette to flowering Actively growing Young rosettes
<i>Salix cinerea</i> Grey Sallow Willow	Glyphosate – neat	Late summer, early autumn
Others	Glyphosate - 10ml/L	Actively growing

Weeds can also be hand removed, chipped and cut down when required. All specific weed control treatments for a site will be listed in a site instruction.

Plant Protection

There are several options available:

- Deer and rabbit proof fencing. Fences will generally be constructed by separate contractors to the planting and maintenance contractors. It is important that any holes or breakages in the fence are reported to FSSS staff as soon as possible.
- Recycled bio-degradable plastic tree cones can be used around seedlings until they are established.
- Plastic mesh tree guards; use two to three stakes and make sure they are securely in the ground, and staple guard to at least one stake.
- Sen -Tree [®] browsing deterrent is a three part product applied to certain seedling trees and shrubs to help reduce browsing damage by animals. Part A (whole egg solids) and Part B (acrylic polymer adhesive) are mixed together with water and sprayed onto the foliage of the trees. Before the mixture dries, Part C (silicon carbide grit) is sprinkled onto the foliage.
- Jute matting squares of 50cm square can be pinned at the base of tube-stock to protect them from root disturbance. In a Lyrebird area, it is best to also place rocks over the jute mats as the bird will still dig it up with only pins securing the mat.

