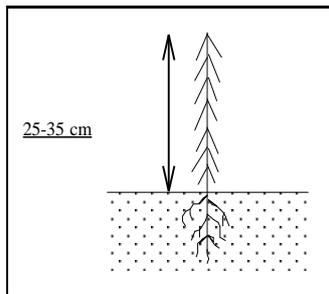


SPECIFICATION 19 SEEDLING SPECIFICATIONS

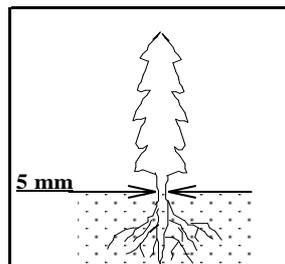
Seedlings

Industry accepted nursery practices are to be used to produce the maximum number of seedlings to the following standards:

1. **Height** - The stem length, measured from the root collar (ground level in the nursery bed) to the top of the tree should be between 25 - 35 cm.

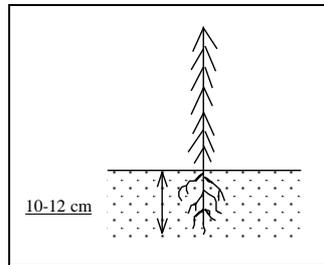


2. **Topping** - If the trees require topping to maintain height specifications and hardness and if more than one topping is required, then each successive topping will be below the previous one. Topping will be done at least one month before time of lifting.
3. **Root Collar Diameter** - The minimum root collar diameter is 5 mm and the maximum is 10 mm, unless agreed upon in writing.

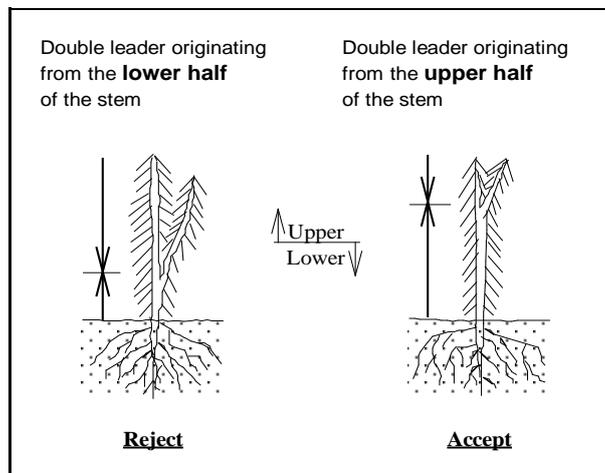


4. **Root Structure** - The seedlings are to have a well-developed root structure with many laterals, tertiary (feeder roots) and mycorrhizal rootlets intact.

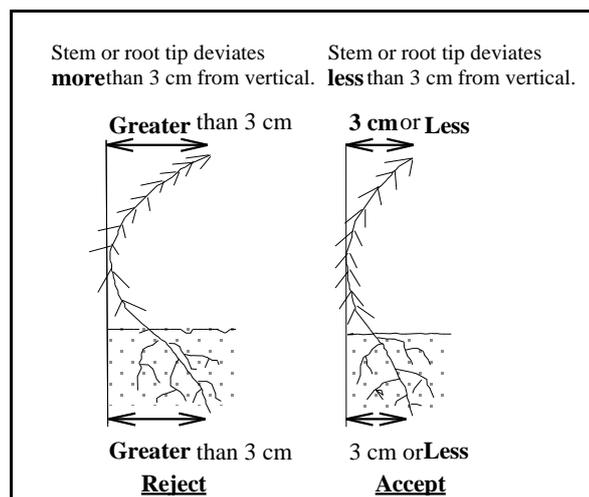
5. **Root trimming** - The seedlings should be hand trimmed (maximum of 10 trees per handful to be trimmed at one time, less if the trees are large) to ensure a taproot of between 10-12 cm in length (from the root collar to the tip of the tap root). **Undercutting operations are to be used to achieve the required taproot length.** The secondary roots (laterals) or any other roots shall not extend beyond the end of the taproot, when the seedling is held vertical.



6. **Multi-leaders** - Seedlings with single leaders and double leaders originating from the upper half of the stem will be accepted. Double or multi-leaders originating from the lower half of the stem will be rejected.



7. **Stem Straightness** - Only seedlings with a straight stem and taproot will be accepted. A tree is classified as being too bent when the stem or root tip deviates more than 3 cm from vertical. Seedlings with severely bent taproots as a result of the under cutter are not acceptable, bent taproot tips as a result of the under cutter may be trimmed off.



8. **Seedling Vigour** - All seedlings are to be in a healthy condition at time of lifting. Trees with discoloured or stripped foliage, damaged stems or roots or which have evidence of disease will be rejected.
9. **Lifting and Handling** - Nursery beds are to be well wrenched just prior to lifting so the beds are well loosened to ensure minimal loss of roots. Trees will be handled in such a way as to ensure minimal loss of tertiary (feeder roots) and mycorrhizal rootlets. Tree stress as a result of water loss from exposure to wind or sun will be minimised. The seedlings are to be lifted at their bases in groups (not individually) and surplus soil gently flicked off the root systems (seedlings are not to be banged against objects, e.g. boots and leggings). If after one gentle flick, dirt still remains on the roots, leave the lumps of dirt on the roots, as more damage than good will result in trying to remove it. Trees may be packed immediately into boxes or laid out on the nursery beds with soil covering their roots until half a box has been lifted at which time those trees will be packed into the carton.
10. **Tree storage** - Seedlings will be lifted and packed immediately into approved packaging (cartons or plastic bags) and stored in a sheltered location out of the wind and sun but preferably a cool store. Trees should be stored on their sides to avoid crushing and bruising of the roots and stem tips (this includes trees packed in plastic bags).

The Company is to co-ordinate with the Contractor so that no trees remain stored for more than 48 hours after lifting at the nursery.

11. **Trees per container** - The number of trees per carton or bag will be determined by the size of the seedlings with a consistent number per container for each stock type with no variation. The trees should fit comfortably into the boxes or bags with no root or stem distortion or undue compression. All tree cartons or bags are to be clearly labelled with the appropriate stockcode and lifter's name or number, which must remain legible by the time it reaches the forest. This information is to be recorded in one of the rectangles of the grid printed on the open end of the carton. All separate orders are to be accompanied by a delivery docket.
12. **Watering of Trees** - Trees will be watered after lifting if the roots appear at all dry or if the roots are likely to dry out during storage at the nursery or if the trees will dry out by the time they arrive at the Forest.
13. **Tree stock Ordering** - Trees will only be lifted after having received an order and no trees will be lifted in anticipation of receiving an order. Each order will be lifted the day before or the day of collection unless special arrangements have been made for that order.
14. **Tree cartons** - The making up of planting boxes are the responsibility of the nursery. Only cartons in good order will be used. All flaps must be in workable order and be able to reach the forest intact. At no time shall any supplied cartons be mistreated or left out in nursery beds or stored in the open unless they are in the designated disposal area.
15. **Quality Control** - All trees leaving the nursery must be to these standards. Variation may only occur if specifically requested by the Company.