



Australian Government

FWPNSY3003 Apply knowledge of tree stock growing in a forest nursery

Release: 1

FWPNSY3003 Apply knowledge of tree stock growing in a forest nursery

Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 7.0.

Application

This unit of competency describes the skills and knowledge required to identify the production cycle for bare root and container grown seedlings and cuttings, assess the impact of tree stock conditioning and tree stock topping practices on seedling quality and implement mycorrhizae inoculation required to optimise production in a forest nursery.

The unit applies to individuals working as arboriculture workers, farm forestry workers, forestry workers, nursery workers, plantation establishment workers, plantation forest officers and silviculturists who are involved in tree nursery operations.

All work must be carried out to comply with workplace procedures, according to state/territory health and safety regulations, legislation and standards that apply to the workplace.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Forest Nursery Production (NSY)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Communicate information on the	1.1 Document and disseminate information to nursery staff on the key stages and timing of the bare root production cycle in a forest nursery

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
production cycle for bare root and container grown seedlings and cuttings	1.2 Document and disseminate information to nursery staff on the key stages and timing of the production cycle of container grown cuttings and seedlings in a forest nursery
2. Assess the impact of tree stock conditioning on seedling characteristics and quality	2.1 Collate and review information on the influence of seed sowing times on the minimum height and timing of undercutting 2.2 Chart the influence of seed spacings on root volume, foliage illumination and conditioning effectiveness 2.3 Gather and review information on the influence of the spacing of cuttings on stem diameter, shoot development and root system quality 2.4 Record the seasonal growth patterns of unconditioned seedlings in relation to the effects of spacing on seedling morphology 2.5 Gather and review data on the growth patterns of seedlings subject to mechanical conditioning in relation to seedling sturdiness 2.6 Monitor the influence of types and timing of conditioning treatments on seedling morphology and physiology 2.7 Review the influence of types and timing of conditioning treatments on root system quality
3. Review the impact of tree stock topping practices on seedling characteristics and quality	3.1 Compare the impact of topping before and after undercutting on fibrous root development 3.2 Monitor the impact of re-topping on bud and shoot development 3.3 Record the effects of topping severity on seedling malformation
4. Inoculate seedbeds with mycorrhizae	4.1 Identify different types of mycorrhizal fungi 4.2 Identify the types of mycorrhizal fungi associated with different tree species 4.3 Confirm operational, safety and environmental protection procedures, including use of personal protective equipment for inoculating seedbeds with mycorrhizae 4.4 Select and check for serviceability tools, equipment and materials for inoculating seedbeds according to workplace procedures 4.5 Inoculate seed beds with mycorrhizae in accordance with workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Extract information from industry guides and standard references on nursery practices related to tree stock growing
Writing	Complete workplace forms and record observations on seedling quality and characteristics
Oral communication	Ask open and closed questions and use active listening techniques to seek and gather information on forest tree propagation
Numeracy	Apply basic mathematical functions to count, calculate area, estimate seedling spacing and measure seedling dimensions

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPNSY3003 Apply knowledge of tree stock growing in a forest nursery	Not applicable	The unit has been created to address a skill or task required by industry that is not covered by an existing unit	Newly created

Links

Companion Volumes, including Implementation Guides, are available at VETNet: - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>

Assessment Requirements for FWPNSY3003 Apply knowledge of tree stock growing in a forest nursery

Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 7.0.

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has applied knowledge of tree stock growing in a forest nursery.

In undertaking this activity, the individual has:

- prepared and communicated information to nursery staff on the production cycle of bare root and container grown cuttings and seedlings
- collated and assessed information on the impact of two tree stock conditioning practices on seedling characteristics and quality
- collated and assessed information on the impact of tree stock topping and re-topping practices on seedling characteristics and quality
- followed operational, workplace health and safety and environmental protection procedures, including the use of personal protective equipment (PPE), in inoculating one seedbed with mycorrhizae.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- key stages and timing of the production cycle of bare root cuttings and seedlings
- key stages and timing of the production cycle of container grown cuttings and seedlings in a forest nursery
- tree stock conditioning:
 - techniques
 - prerequisites for effective tree stock conditioning – seed sowing times and seed spacing
 - tree stock conditioning principles
- tree stock topping principles:

- topping techniques
- impact of topping either before or after undercutting on fibrous root development
- impact of re-topping on bud and shoot development
- impact of topping severity on seedling malformation
- mycorrhizal fungi:
 - types of mycorrhizal fungi
 - association of mycorrhizal fungi with softwood and hardwood species
 - the mechanism of mycorrhizal association and its importance to tree health
 - seed bed inoculation techniques
 - operational, workplace health and safety and environmental protection procedures, including the use of PPE, for inoculating seedbeds with mycorrhizae.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a tree production work environment or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - PPE, tools, equipment and materials required for inoculating seedbeds with mycorrhizae
 - forest tree nursery.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volumes, including Implementation Guides, are available at VETNet: - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>