

**Modification history**

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

FWPFGM3XXX	Apply knowledge of tree stock growing in a forest nursery
<b>Application</b>	<p>This unit of competency describes the knowledge of the production cycle for bare root and container grown seedlings and cuttings, tree stock conditioning, tree stock topping and mycorrhizae inoculation required to optimise production in a forest nursery.</p> <p>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.</p> <p>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.</p> <p>No licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
<b>Prerequisite Unit</b>	Nil
<b>Unit Sector</b>	

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. Identify the production cycle for bare root and container grown seedlings and cuttings	1.1 Document the key stages and timing of the production cycle of bare root cuttings and seedlings in a forest nursery 1.2 Document 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	2.1 Assess the influence of seed sowing times on the minimum height and timing of undercutting 2.2 Assess the influence of seed spacings on root volume, foliage illumination and conditioning effectiveness 2.3 Assess the influence of the spacing of cuttings on stem diameter, shoot development and root system quality 2.4 Assess the seasonal growth patterns of unconditioned seedlings in relation to the effects of spacing on seedling morphology 2.5 Assess the growth patterns of seedlings subject to mechanical conditioning in relation to the effects of such conditioning on seedling sturdiness 2.6 Assess conditioning treatments of seedlings and their timing in relation to their effects on seedling morphology and physiology 2.7 Assess conditioning treatments of cuttings and their timing in relation to their effects on root system quality
3. Assess the impact of tree stock topping	3.1 Assess the impact of topping before or after undercutting and its effect on fibrous root development 3.2 Outline the practice of re-topping and its effect on bud and shoot development 3.3 Assess 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 Inoculate seed beds with mycorrhizae in accordance with workplace procedures

<b>Foundation Skills</b>	
<i>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.</i>	
<b>Skill</b>	<b>Description</b>
Reading	<ul style="list-style-type: none"> <li>Extract information from industry guides and standard references on forest tree propagation</li> </ul>
Writing	<ul style="list-style-type: none"> <li>Complete workplace forms</li> </ul>
Oral communication	<ul style="list-style-type: none"> <li>Ask open and closed questions and use active listening techniques to seek and gather information on forest tree propagation</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>Apply basic mathematical functions to calculate area, cost and dimensions</li> </ul>

<b>Unit Mapping Information</b>			
<b>Code and title current version</b>	<b>Code and title previous version</b>	<b>Comments</b>	<b>Equivalence status</b>
FWPFGM3XXX Apply knowledge of tree stock growing in a forest nursery	Not applicable	New unit	Not applicable

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

<b>TITLE</b>	<b>Assessment requirements for FWPFGM3XXX Apply knowledge of tree stock growing in a forest nursery</b>
<b>Performance Evidence</b>	
<p>An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.</p> <p>There must be evidence that, on one occasion, the individual has:</p> <ul style="list-style-type: none"> <li>• documented the key stages and timing of the production cycle of bare root cuttings and seedlings in a forest nursery</li> <li>• documented the key stages and timing of the production cycle of container grown cuttings and seedlings in a forest nursery</li> <li>• assessed the impact of tree stock conditioning</li> <li>• inoculated seedbeds with mycorrhizae.</li> </ul>	
<b>Knowledge Evidence</b>	
<p>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:</p> <ul style="list-style-type: none"> <li>• key stages and timing of the production cycle of bare root cuttings and seedlings</li> <li>• key stages and timing of the production cycle of container grown cuttings and seedlings in a forest nursery</li> <li>• tree stock conditioning <ul style="list-style-type: none"> <li>• techniques</li> <li>• prerequisites for effective tree stock conditioning - seed sowing times and seed spacing</li> <li>• tree stock conditioning principles</li> </ul> </li> <li>• tree stock topping principles <ul style="list-style-type: none"> <li>• topping techniques</li> <li>• impact of topping either before or after undercutting on fibrous root development.</li> <li>• impact of re-topping on bud and shoot development.</li> <li>• impact of topping severity on seedling malformation</li> </ul> </li> <li>• mycorrhizal fungi <ul style="list-style-type: none"> <li>• types of mycorrhizal fungi</li> <li>• association of mycorrhizal fungi with softwood and hardwood species</li> <li>• the mechanism of mycorrhizal association and its importance to tree health</li> <li>• seed bed inoculation techniques</li> </ul> </li> </ul>	
<b>Assessment Conditions</b>	
<p>Assessment of the skills in this unit of competency must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>• physical conditions: <ul style="list-style-type: none"> <li>• skills must be demonstrated in a forest work environment or an environment that accurately represents workplace conditions</li> </ul> </li> <li>• resources, equipment and materials: <ul style="list-style-type: none"> <li>• tools, equipment and materials required for Inoculating seedbeds with mycorrhizae</li> <li>• forest tree nursery.</li> </ul> </li> </ul> <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	
<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47</a>