

<b>Title</b>	<b>Demonstrate and apply knowledge of mycorrhizal fungi and mycorrhizal inoculation in a forest nursery</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to describe mycorrhizal fungi; inoculate seed beds using spores contained in fruiting bodies in a forestry nursery; demonstrate knowledge of inoculating seed bed areas using needle litter.
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<b>Classification</b>	Horticulture > Forest Nursery
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 Legislation relevant to this unit standard includes but is not limited to:
  - Health and Safety at Work Act 2015, and any subsequent amendments.
- 2 References
 

*Plant Dictionary* – Definition of Mycorrhiza available at: [www://biologydictionary.net/mycorrhizae/](http://www://biologydictionary.net/mycorrhizae/)

*General information about Mycorrhiza* available at: [www://mycorrhizaworld.de/hp569/Forestry.htm](http://www://mycorrhizaworld.de/hp569/Forestry.htm)

*Plants in action chapter 4* available at: [www://plantsinaction.science.uq.edu.au/content/43-mycorrhizal-associations-0](http://www://plantsinaction.science.uq.edu.au/content/43-mycorrhizal-associations-0)
- 3 Definition
 

*Workplace procedures* – the policies and procedures on safety and operation set down by the employer or organisation.
- 4 All evidence presented in this assessment must be in accordance with workplace procedures.

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### Outcomes and performance criteria

#### Outcome 1

Describe mycorrhizal fungi.

**Performance criteria**

- 1.1 Describe different forms of mycorrhizal fungi in terms of their association with forestry species.
- Range fungi may include but are not limited to – ecto mycorrhizae, endo mycorrhizae, ericoid mycorrhiza; evidence of three fungi is required.
- 1.2 Identify and describe mycorrhizal fungus present in a forestry nursery in terms of its fruiting bodies.
- Range evidence of one fruiting body is required.
- 1.3 Describe the relationship of a mycorrhizal association in terms of tree health and vigour.
- Range may include but is not limited to – symbiosis, nutrition, carbohydrates, fungus infection, tertiary roots, evidence of four beneficial effects is required.
- 1.4 Identify and describe an inoculated seedling/cuttings root system in terms of the characteristics.

**Outcome 2**

Inoculate seed beds using spores contained in fruiting bodies in a forestry nursery.

Range evidence of one fungus species is required.

**Performance criteria**

- 2.1 Identify and label species according to their fruiting bodies.
- 2.2 Monitor fruiting body development to determine optimum spore collection time in accordance with workplace procedures.
- 2.3 Collect and store fruiting bodies under conditions that maintain optimal spore viability.
- Range includes but is not limited to – temperature, moisture.
- 2.4 Prepare and apply spore suspensions.
- 2.5 Monitor and maintain soil moisture levels after application to ensure optimal spore vitality.
- 2.6 Monitor and assess inoculation success.

**Outcome 3**

Demonstrate knowledge of inoculating seed bed areas using needle litter.

**Performance criteria**

- 3.1 Identify layers containing fungus mycelium in the forest or stand.
- Range may include but is not limited to – coarse litter layer, humifying layer, topsoil layer
- 3.2 Describe application techniques of using needle litter to inoculate nursery soils.
- 3.3 Describe the management of soil moisture levels after application to ensure optimal spore vitality.

<b>Planned review date</b>	31 December 2026
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	25 September 1997	31 December 2024
Revision	2	19 July 2001	31 December 2024
Revision	3	24 February 2006	31 December 2024
Review	4	24 February 2022	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0052
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

**Comments on this unit standard**

Please contact the Muka Tangata - People, Food, and Fibre Workforce Development Council [qualifications@mukatangata.nz](mailto:qualifications@mukatangata.nz) if you wish to suggest changes to the content of this unit standard.