

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

Purpose	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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Classification	Horticulture > Forest Nursery
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Available grade	Achieved
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Guidance Information

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

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

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.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

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	31 December 2026
Review	5	24 April 2025	31 December 2026

Consent and Moderation Requirements (CMR) reference

0052

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.