

Title	Demonstrate knowledge of, implement, and monitor ley cropping principles in forest nurseries		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: demonstrate knowledge of ley cropping principles in a forest nursery; identify pasture species, carry out ley crop establishment, and implement and monitor crop care in a forest nursery; carry out ley crop management in a forestry nursery; and carry out the termination of a ley crop in a forest nursery.
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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:
 - Hazardous Substance and New Organisms Act 1996;
 - Health and Safety at Work Act 2015;
 - Resource Management Act 1991;
 and any subsequent amendments.
- References
 Adams C.R., Bamford K.M., & Early M.P., *Principles of Horticulture*, Routledge USA and Canada, 2011, Chapter 18 page 332 available at: <https://books.google.co.nz>.
 Rees R.M., Ball B.C, Campbell C.D., & Watson C.A., *Sustainable Management of Soil Organic Matter*, United Kingdom, CABI 2000, Chapter 4.9. available at: <https://books.google.co.nz/books>.
- Definitions
Surfactant – compound which lowers the surface tension between a liquid and the leaf surface to allow for penetration of the herbicide.
Sward – the upper layer of soil covered by grasses clovers, herbage and weeds.
Workplace procedures – the policies and procedures on safety and operation set down by the employer or organisation.
- All evidence presented in this unit standard must be in accordance with workplace procedures.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of ley cropping principles in a forest nursery.

Performance criteria

- 1.1 Identify and describe seed mix components in terms of their characteristics which contribute to the improvement of soil structure.
- Range mix components may include but are not limited to – perennial ryegrass, clover;
evidence of two mix components is required.
- 1.2 Describe organic matter cycling in terms of the effect it has on the physical conditions of soil.
- 1.3 Identify and describe factors which influence the physical condition of soil in relation to a forest nursery.
- Range factors may include but are not limited to – ley crop rotation length, tree crop rotation length, ley to planted ground ratios, cultivation;
evidence of two factors is required.
- 1.4 Identify and describe base fertilisers and lime in terms of their properties and their influence on the condition of the soil.
- Range fertilisers may include but are not limited to – nitrogen, super phosphate, potash, sulphur, sulphate of ammonia;
evidence of four fertilisers is required.

Outcome 2

Identify pasture species, carry out ley crop establishment, and implement and monitor crop care in a forest nursery.

Performance criteria

- 2.1 Apply required base fertilisers to ley crop areas in accordance with soil test results.
- 2.2 Identify pasture species required for ley crop seed mixes that suit soil.
- Range seed mixes may include but are not limited to – perennial ryegrass, short rotation ryegrass, white clover;
evidence of two seed mixes is required.
- 2.3 Apply sowing techniques and sowing rates for ley crops.
- 2.4 Implement and monitor crop care techniques to ensure optimal establishment of a ley crop.
- Range may include but is not limited to – sowing date, weed and pest control, irrigation, supplementary fertiliser, seed bed preparation, cultivation practice;
evidence of four techniques is required.

Outcome 3

Carry out ley crop management in a forest nursery.

Performance criteria

- 3.1 Monitor ley crop vigour and implement mowing or grazing policies.
- 3.2 Monitor ley crop development and implement fertiliser applications.
- 3.3 Monitor soil moisture levels and implement irrigation applications.

Outcome 4

Carry out the termination of a ley crop in a forest nursery.

Performance criteria

- 4.1 Identify species in a ley crop sward and select appropriate herbicides and additives to complete an effective kill.

 Range sward includes – grass species, clover, weed species.
 herbicides and additives may include are but not limited to –
 selective, non-selective, residual, non-residual, surfactant.
- 4.2 Apply herbicide to complete an effective kill of a ley crop sward.
- 4.3 Implement cultivation practices which allow for full incorporation of ley crop residues.

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>.