

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.

Planned review date	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

Consent and Moderation Requirements (CMR) reference	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 if you wish to suggest changes to the content of this unit standard.