

ASSESSMENT GUIDELINES

Unit 10944

Demonstrate knowledge of seed orchards

Level 4, Credit 5, version 3

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Unit standard 10944

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Level of performance required for this unit standard

This is a level 4 unit standard. At this level trainees are expected to demonstrate the following abilities when completing assessment tasks:

- To work under broad guidance, independently; with complete responsibility for the standards of the outcome achieved.
- To apply technical skills, knowledge, and innovation to complete the task to the specified standard, in a variety of familiar and unfamiliar contexts.
- To analyse and interpret information, and make an informed judgment.

Workplace assessment:

For guidelines on Workplace Assessment, please refer to the NZHITO Workplace Assessors Manual, and for further information, please contact: NZHITO, PO Box 8638, Christchurch. Ph 03 9644 735, fax 03 9644 737, website www.hortito.org.nz

Entry information:

Recommended: Unit 17760, *Demonstrate knowledge of commercial plantation trees in New Zealand*, or demonstrate equivalent knowledge and skills.

Special notes:

1. Definitions

Ramet refers to the vegetative off- spring of one individual, genetically identical to the original;

Clone denotes a group of genetically identical individuals (ramets);

OP means pollinated;

CP means control pollinated;

The term *roguing* refers to the removal of genetically inferior trees in a seed orchard or seed stand.

2. Range: seed orchards covered by this unit standard include those of: radiata pine, Douglas fir, eucalypt species, cypress species.

Unit 10944: Demonstrate knowledge of seed orchards (Apprentice copy)

ELEMENT	Competent	Range of evidence an assessor should consider
Element 1 Demonstrate knowledge of the concept of seed orchards.	Yes/No	<ul style="list-style-type: none"> ▪ Outline the types of seed orchards with reference to their objectives and to the planting stock used to establish them. Range: clonal OP orchards, clonal CP orchards, seedling seed orchards, genetically improved OP seed, genetically improved CP seed, clones of progeny tested parents, CP seedlings of progeny tested parents. ▪ Outline planting patterns of clones, ramets and seedlings with reference to the type of seed to be produced. Range: spacing, random planting, line planting, clonal block planting, OP seed, CP seed.
Element 2 Demonstrate knowledge of seed orchard location, siting and site requirements.	Yes/No	<ul style="list-style-type: none"> ▪ Outline seed orchard location criteria with reference to species' seed bearing characteristics. Range: elevation, climate, latitude for one species only. ▪ Outline optimum seed orchard siting within a region with reference to species pollination characteristics, prevailing wind direction and proximity to stands of the same species. ▪ Outline seed orchard site requirements with reference to their influence on productivity and orchard management. Range: topography, aspect, micro-climate, soil characteristics, machinery movement.
Element 3 Demonstrate knowledge of seed orchard establishment.	Yes/No	<ul style="list-style-type: none"> ▪ Outline site preparation requirements with reference to the need to achieve long term tree stability and vigour as well as easy machinery movement over the entire area. Range: levelling, cultivation, ripping, fertilising, weed control, animal control, fencing, shelter. ▪ Outline plant material characteristics with reference to the need to achieve 100% stocking and fast early growth. Range: grafts, cuttings, seedlings, root collar diameter, root system quality, foliage quality, graft union compatibility status. ▪ Outline planting practices with reference to the need to promote early growth and long term stability. Range: planting spot preparation, planting care. ▪ Outline the purpose of detailed orchard plans with reference to their importance for future orchard management. Range: orchard planting plan, ramet identity, seed collection, collection of vegetative propagation material, control pollination, roguing.
Element 4 Demonstrate knowledge of seed orchard management.	Yes/No	<ul style="list-style-type: none"> ▪ Outline sward maintenance practices with reference to the needs of pollinating insects. Range: mowing, weed control, fertilisers; eucalypt species only, pollinators, bees, beehives. ▪ Outline maintenance of orchard health and level of genetic improvement with reference to the objective of producing the maximum quantity of seed of the highest level of genetic improvement. Range: control of fungi and pests, roguing, clone replacement, crown form, frost problems, cuttings, grafts, graft incompatibility effects, fertiliser applications.

_____ (Name of Apprentice)

is **Competent** / **Not yet competent** in Unit Standard 10944 (version 3)

Signed (Assessor): _____

WPA Registration Number: _____ Date: _____

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Please send this page to your NZHITO Regional Manager, who will forward it to National Office to register the credits on your NZQA Record of Learning.

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