

Title	Control the nursery growing environment		
Level	4	Credits	7

Purpose	People credited with this unit standard are able to: control a greenhouse environment; manage water levels in growing media; and manage light levels.
----------------	---

Classification	Horticulture > Nursery Production
-----------------------	-----------------------------------

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 Definitions
Nursery growing environment refers to environments such as greenhouses, or shadehouses.
Workplace procedures refer to oral or written instructions to staff on procedures for the worksite and equipment.
- 2 It is intended that a nursery greenhouse environment be controlled for a period of four months.
- 3 Legislation relevant to this unit standard includes but is not limited to the Health and Safety in Employment Act 1992, the Resource Management Act 1991, and their subsequent amendments.
- 4 Work may involve exposure to chemical, dangerous, or hazardous substances. Safety procedures are observed in accordance with NZS 8409:2004 *Management of Agrichemicals*, available from Standards New Zealand <http://standards.co.nz>, or the NZ Agrichemical Education Trust <http://growsafe.co.nz/>.

Outcomes and performance criteria

Outcome 1

Control a greenhouse environment.

Performance criteria

- 1.1 Environmental control systems are identified and their operation explained.
 Range any two of – heating, cooling, humidity.

- 1.2 Greenhouse environmental conditions are determined in terms of plant requirements.
- Range temperature, humidity, light levels.
- 1.3 The relationships between temperature, humidity, air movement, and plant water loss are explained.
- 1.4 Control systems are checked as required and operated to maintain the greenhouse environment within the optimum range determined for the plants grown.
- Range one of – manual control, automatic control.
- 1.5 The environment is monitored to ensure that conditions are maintained within the predetermined range and information is recorded in accordance with workplace procedures.
- Range information records includes – regular readings of maximum and minimum air temperature, humidity; evidence of records collected must be for a minimum two week period, with readings from a range of times each day.
- 1.6 The effects of external environmental conditions and structures on the ventilation system operation are explained.
- Range temperature, wind strength and direction, humidity, artificial shelter and/or natural shelter systems.

Outcome 2

Manage water levels in growing media.

Performance criteria

- 2.1 Plant water requirements are determined and controlled in accordance with workplace procedures.
- 2.2 Irrigation system components are identified and their operation is explained in terms of its use in the nursery growing environment.
- Range one of – manual system, automatic system.
- 2.3 The irrigation system is operated so as to maintain the available water in the growing media at levels suitable for the plants grown.
- 2.4 Monitoring ensures the growing media are not too wet or too dry for the plants grown.

2.5 Irrigation records are maintained in accordance with workplace procedures.

Range may include date, blocks irrigated, timing, litres used, weather conditions.

Outcome 3

Manage light levels.

Performance criteria

3.1 The light requirements of the plants are identified, and the control method selected achieves the light requirement.

Range may include at least one of – shading to reduce light levels, use of lighting to extend day length, black out covers to exclude light.

3.2 Light levels are managed so as to optimise plant growth and achieve the required outcomes.

Range plants remain undamaged from incorrect light levels, plant production target achieved.

3.3 Records are maintained in accordance with workplace procedures where lighting or blackout covers are used.

Range may include date, plants names, modification, plant house, bench or block number, timing, outcomes.

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	23 February 2004	31 December 2014
Revision	2	24 February 2006	31 December 2014
Review	3	19 April 2012	31 December 2023
Review	4	2 March 2023	31 December 2023

Consent and Moderation Requirements (CMR) reference

0032

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