

Title	Describe the principles of organic horticultural production		
Level	3	Credits	20

Purpose	People credited with this unit standard are able to describe: planning requirements for establishment and maintenance of an organic horticultural production system, soil management, pest control, factors that affect disease control, weed management, and companion planting in organic horticulture.
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Classification	Horticulture > Production Horticulture
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Available grade	Achieved
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Guidance Information

Standards relevant to this unit standard include but are not limited to:

- Demeter Standards www.biodynamic.org.nz;
- BIO-GRO Standards www.bio-gro.co.nz;
- Agriquality Organic Standards www.agriquality.co.nz;
- Soil and Health Association of New Zealand www.organicnz.org;
- New Zealand Food Safety Authority www.nzfsa.govt.nz/organics;
- NZS 8410:2003 Organic production www.standards.co.nz.

Outcomes and performance criteria

Outcome 1

Describe planning requirements for establishment and maintenance of an organic horticultural production system.

Performance criteria

1.1 Describe physical site requirements in terms of crop selection.

Range requirements include but are not limited to – climate, aspect, distance to markets, past land use, surrounding land use, boundary integrity, existing buildings, irrigation source, fertility, chemical residue in soil.

1.2 Describe elements of planning in terms of organic horticultural production systems.

Range elements include but are not limited to – biological diversity, ecosystem balance and stability, sustainable use of energy, soil protection, fertility management, integrated pest and disease management, annual crop rotation, crop performance monitoring.

1.3 Describe elements of monitoring in terms of the management of an organic horticultural production system.

Range elements include but are not limited to – pest and disease management, corrective action, decision making, crop performance.

Outcome 2

Describe soil management in organic horticulture.

Performance criteria

2.1 Describe soil management in organic horticultural production in terms of soil characteristics.

Range characteristics include but are not limited – topsoil, sub-soil, humus, fungi and micro-organisms, organic matter, minerals, soil structure, aeration, drainage.

2.2 Describe soil management in organic horticulture in terms of soil management methods.

Range methods include but are not limited to – tillage, crop rotation, mulching, composting, green manure, fallow land, mineral additions.

2.3 Describe soil management in organic horticulture in terms of the benefits of adding organic matter to soil.

Range benefits include but are not limited to – soil structure, chelation, moisture retention, nutrient retention, feed source for fungi and bacteria.

2.4 Describe soil management in organic horticulture in terms of the objectives of crop rotation.

Range objectives include but are not limited – soil fertility, soil organic matter and structure, nutrient availability and retention, weed management, disease and pest management, biodiversity.

- 2.5 Describe soil management in organic horticulture in terms of the benefits of green manures.
- Range benefits include but are not limited to – maintenance of nutrient levels; weed, pest, and disease management; organic matter; soil structure; carbon and nitrogen.
- 2.6 Describe soil management in organic horticulture production in terms of fertiliser sources.
- Range sources include but are not limited to – unadulterated minerals, liquid fertilisers, biological activators, compost, micronutrients.

Outcome 3

Describe pest control in organic horticulture.

Performance criteria

- 3.1 Describe pest control in organic horticulture in terms of cultivar selection criteria.
- Range criteria include but are not limited to – growth habit, pest and disease resistance, market expectation, suitability for growing region.
- 3.2 Describe pest control in organic horticulture in terms of physical site conditions.
- Range conditions may include but are not limited to – climate, soil, drainage, shelter, surrounding land use, companion planting, natural habitats; evidence of five conditions is required.
- 3.3 Describe pest control in organic horticulture in terms of mechanical control methods.
- Range methods include but are not limited to – tillage, use of traps, barriers, drainage, bird scarers.
- 3.4 Describe pest control methods in terms of biological forms of control.
- Range methods include but are not limited to – beneficial organisms including parasitoids and predators, life cycle disruption, companion planting.
- 3.5 Describe chemical forms of pest control in terms of approved organic standards, typical mode of action and appropriate use.
- 3.6 Describe pest control in terms of crop rotation of annual plantings.

Outcome 4

Describe factors that affect disease control in organic horticulture.

Performance criteria

4.1 Describe factors affecting disease control in organic horticulture in terms of the causes of disease infestation.

Range causes include but are not limited to – crop selection, moisture levels, airflow, host plants, continuous cropping, pruning, weed management, monoculture.

4.2 Describe factors affecting disease control in organic horticulture in terms of cultural practices used to control diseases.

Range practices include but are not limited to – irrigation and soil saturation, pruning, weed management, airflow, grazing, crop rotation, soil management, polyculture, biological controls, crop selection.

4.3 Describe chemical forms of disease control in terms of approved organic standards, typical mode of action and appropriate use.

Outcome 5

Describe weed management in organic horticulture.

Performance criteria

5.1 Describe weed management in organic horticultural production in terms of the characteristics of a weed.

5.2 Describe weed management in organic horticulture in terms of positive aspects of weeds.

Range aspects include but are not limited to – nutrient recycling, environmental indicator, host plants, companion plants, diversity, erosion protection.

5.3 Describe weed management in organic horticulture in terms of the negative aspects of weeds.

Range aspects include but are not limited to – competition, pests and diseases, toxicity, economic impact; evidence of three aspects is required.

5.4 Describe weed management in organic horticulture in terms of accepted weed management techniques.

Range techniques include but are not limited to – mechanical, biological, cultural.

Outcome 6

Describe companion planting in organic horticulture.

Performance criteria

6.1 Describe companion planting in organic horticulture in terms of its features.

Range features include but are not limited to – environmental manipulation, biodiversity, pest and disease control.

6.2 Describe companion planting strategies in terms of growing horticulture crops.

Range evidence of five horticulture crops is required.

Replacement information	This unit standard replaced unit standard 10326, unit standard 10328, unit standard 10331, and unit standard 10332
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Planned review date	31 December 2026
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Last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 October 2006	31 December 2023
Review	2	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 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.