

<b>Title</b>	<b>Describe frosts, and frost protection methods for a horticulture operation</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to describe: how climatic and landform conditions cause radiation and advection frosts; factors determining frost risk and cultural practices for reducing frost risk; methods available for frost prediction and monitoring; operation and principles of frost protection methods.
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<b>Classification</b>	Horticulture > Production Horticulture
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<b>Available grade</b>	Achieved
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### Guidance Information

None.

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### Outcomes and performance criteria

#### Outcome 1

Describe how climatic and landform conditions cause radiation and advection frosts.

#### Performance criteria

1.1 Describe climatic and landform conditions in terms of causing radiation frosts.

Range conditions include but are not limited to – relative humidity, dewpoint, aspect, airflow, topography and surrounding land features.

1.2 Describe climatic and landform conditions in terms of causing advection frosts.

Range conditions include but are not limited to – relative humidity, dewpoint, aspect, airflow and surrounding land features.

#### Outcome 2

Describe factors determining frost risk and cultural practices for reducing frost risk in horticulture operation.

**Performance criteria**

2.1 Describe climate and landform factors in terms of determining the frost risk of a site.

Range factors include but are not limited to – altitude, topography, surrounding land features, mesoclimate, macroclimate.

2.2 Describe horticulture cultural practices in terms of reducing the frost risk.

Range practices may include but are not limited to – time of pruning, mowing, sprays, inter-row management; evidence of two practices is required.

**Outcome 3**

Describe the methods available for frost prediction and monitoring.

**Performance criteria**

3.1 Describe frost prediction methods in terms of forecasting potential frost events.

Range methods include but are not limited to – local historical data, weather forecasts, meteorological information.

3.2 Describe frost monitoring methods in terms of minimising the frost risk.

**Outcome 4**

Describe the operation and principles of frost protection methods.

**Performance criteria**

4.1 Describe overhead sprinklers in terms of operation and principles for frost protection.

Range hydraulic requirements, protective mechanisms, critical temperature points.

4.2 Describe air movement in terms of operation and principles for frost protection.

4.3 Describe heating methods in terms of operation and principles for frost protection.

4.4 Describe frost protection methods in terms of limitations.

Range methods include but are not limited to – sprinkler, air movement, heating; limitations may include but are not limited to – type of frost event, severity of frost event, causes of failure, maintenance, effective coverage, local authority regulations; evidence of one limitation for each method is required.

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<b>Planned review date</b>	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	27 January 2022	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	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](mailto:qualifications@mukatangata.nz) if you wish to suggest changes to the content of this unit standard.