

<b>Title</b>	<b>Describe and carry out microbiological tests in a laboratory in a primary products food processing operation</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe microbiological testing of food products; prepare samples for microbiological testing of food products; perform microbiological tests on food products; and interpret, confirm, and report results of microbiological tests on food products, in a primary products food processing operation.
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<b>Classification</b>	Primary Products Food Processing > Primary Products Food Processing - Operational Skills
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 Legislation and references relevant to this unit standard include but are not limited to:
    - Hazardous Substances and New Organisms Act 1996;
    - Health and Safety at Work Act 2015;
    - Health and Safety in Employment Regulations 1995;
    - Resource Management Act 1991;
    - ISO/IEC 17025:2018 *General requirements for the competence of testing and calibration laboratories*, available at <http://www.standards.co.nz>; and any subsequent amendments.
  - 2 Definitions
 

*Organisational requirements* – instructions to staff on policies and procedures which are documented in memo, electronic or manual format and are available in the workplace.

*Primary products food processing operation* – covers a meat, dairy, seafood, fruit and vegetable and honey processing, food and beverage manufacturing and other related industries.
  - 3 *Microbiological tests* may include but are not limited to – starter cultures, culture maintenance, microbiological counts, special microbiological counts, validation of materials, preparing samples; evidence of four different microbiological tests is required.
  - 4 All evidence presented in this unit standard must be in accordance with organisational requirements.
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## Outcomes and performance criteria

### Outcome 1

Describe microbiological testing of food products in a primary products food processing operation.

#### Performance criteria

1.1 Describe the principles of the tests in terms of technology, reactions and processes involved.

1.2 Describe critical stages of the tests in terms of their function.

Range critical stages may include but are not limited to – media preparation, sample preparation, sampling, test preparation, testing, incubation, sub-culturing, reading and data input, confirmation;  
evidence of four critical stages is required.

1.3 Describe variables of the tests in terms of the process of eliminating variables.

Range evidence of four different variables is required.

1.4 Describe quality assurance of the tests.

Range quality assurance includes but is not limited to – controls, blanks, repeatability, reproducibility, duplicates, decimal dilutions.

### Outcome 2

Prepare samples for microbiological testing of food products in a primary products food processing operation.

#### Performance criteria

2.1 Select procedure for sample preparation.

2.2 Calculate and measure quantities of product.

2.3 Take a sample.

2.4 Prepare sample in a safe and aseptic manner.

2.5 Clean and store equipment and samples and dispose of waste.

### Outcome 3

Perform microbiological tests on food products in a primary products food processing operation.

**Performance criteria**

- 3.1 Prepare samples and equipment in accordance with manufacturer's specifications.
- 3.2 Perform tests in a safe and aseptic manner.
- 3.3 Confirm test results.
- 3.4 Clean and store test equipment and samples and dispose of waste.

**Outcome 4**

Interpret, confirm, and report results of microbiological tests on food products in a primary products food processing operation.

**Performance criteria**

- 4.1 Interpret, confirm, and report microbiological test results.
- 4.2 Identify any microbiological test non-conformance and take corrective action.

<b>Replacement information</b>	This unit standard replaced unit standard 21995, unit standard 21996 and unit standard 21997.
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<b>Planned review date</b>	31 December 2026
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**Last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	17 September 2015	31 December 2024
Review	2	24 March 2022	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0033
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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 Hanga-Aro-Rau Manufacturing, Engineering, and Logistics Workforce Development Council [qualifications@hangaarorau.nz](mailto:qualifications@hangaarorau.nz) if you wish to suggest changes to the content of this unit standard.