

Title	Describe and carry out detection testing in a laboratory in a primary products food processing operation		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: describe detection testing performed on food products; describe environmental tests for micro-organisms found in air and water; identify bacterial species in food products; plan and carry out sampling and identification of micro-organisms; and calculate, interpret and report test results, in a primary products food processing operation.
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Classification	Primary Products Food Processing > Primary Products Food Processing - Operational Skills
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Available grade	Achieved
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Guidance Information

- 1 Legislation and standards relevant to this unit standard include but are not limited to
 - Hazardous Substances and New Organisms Act 1996;
 - Health and Safety in Employment Act 1992;
 - 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*, and any subsequent amendments. Available at <http://www.standards.co.nz>;
- 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 All evidence presented in this unit standard must be in accordance with organisational requirements.

Outcomes and performance criteria

Outcome 1

Describe detection testing performed on food products in a primary products food processing operation.

Range evidence of one common and one special detection test is required.

Performance criteria

1.1 Describe the principle of the test in terms of technology, reactions and processes involved.

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

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

1.3 Describe variables of the test in terms of the process for their elimination.

Range variables may include but are not limited to – equipment, apparatus, reagents, sample, technique, contamination, and environment; evidence of four is required.

1.4 Describe quality assurance of the test.

Range quality assurance includes but is not limited to – controls, blanks.

Outcome 2

Describe environmental tests for micro-organisms found in air and water in a primary products food processing operation.

Performance criteria

2.1 Identify and describe the range of micro-organisms found in the air and water in terms of their origins and mechanisms of dispersion.

2.2 Describe the methods of sampling for micro-organisms found in the air and water.

2.3 Describe variables of the methods in terms of the process for their elimination.

Range variables may include but are not limited to – equipment, technique, contamination, and environment; evidence of two is required.

2.4 Describe quality assurance procedures for the test.

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

Outcome 3

Identify bacterial species in 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 Conduct tests.
- 3.3 Identify and record species of bacteria.
- 3.4 Confirm identification of bacteria using a test appropriate to prediction.
- 3.5 Perform testing in a safe and aseptic manner.
- 3.6 Clean and store test equipment and dispose of samples and waste.

Outcome 4

Plan and carry out sampling and identification of micro-organisms in food products in a primary products food processing operation.

Performance criteria

- 4.1 Create a plan for sampling and identification of micro-organisms.
- 4.2 Collect a representative sample.
- 4.3 Carry out sampling and identification of micro-organisms.

Outcome 5

Calculate, interpret and report test results in a primary products food processing operation.

Performance criteria

- 5.1 Calculate, interpret and report test results.
- 5.2 Identify any non-conformance in the report and take corrective action.

Replacement information	This unit standard replaced unit standard 21991, unit standard 21993 and unit standard 21998.
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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	17 September 2015	31 December 2024
Review	2	24 March 2022	N/A

Consent and Moderation Requirements (CMR) reference	0033
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Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering, and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.