Title	**Describe and perform laboratory analyses in a primary products food processing operation**		
Level	**4**	**Credits**	**10**

Purpose	People credited with this unit standard are able to: describe the principles of laboratory analyses performed on food products; describe the principles of operation maintenance, calibration and quality control of an infrared instrument; use an infrared instrument to carry out an analysis on food products; perform laboratory analyses on food products; and calculate and report results of laboratory analyses, in a primary products food processing operation.

Classification	Primary Products Food Processing > Primary Products Food Processing - Operational Skills

Available grade	Achieved

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 at Work Act 2015;
- Health and Safety in Employment Regulations 1995;
- Resource Management Act 1991;
- ISO/IEC 17025:20018 *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.

4 Evidence of two laboratory analyses is required.

Outcomes and performance criteria

Outcome 1

Describe the principles of laboratory analyses performed on food products in a primary products food processing operation.

Performance criteria

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

1.2 Describe critical factors and variables of the analyses in terms of minimising variability.

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

1.3 Describe quality assurance of the analyses.

Range quality assurance includes but is not limited to – blanks, standards, repeatability, reproducibility.

Outcome 2

Describe the principles of operation, maintenance, calibration and quality control of an infrared instrument used in a laboratory in a primary products food processing operation.

Performance criteria

2.1 Describe the underlying principles of operation in terms of the technology and the chemical reactions and/or processes that take place.

2.2 Describe maintenance procedures in terms of manufacturer’s specifications.

2.3 Describe calibration procedures in terms of manufacturer’s specifications.

2.4 Describe quality control checks in terms of the type and cause of typical errors.

Range checks may include but are not limited to – blanks, repeatability, reproducibility; evidence of two is required.

Outcome 3

Use an infrared instrument to carry out an analysis on food products in a primary products food processing operation.

Performance criteria

3.1 Set up an infrared instrument in accordance with manufacturer's specifications.

3.2 Perform infrared instrument tests in accordance with manufacturer's specifications.

3.3 Collect and analyse test results, and action any non-conforming results.

3.4 Use an infrared instrument in a manner that avoids danger to persons or damage to instrument or equipment.

3.5 Maintain an infrared instrument.

Outcome 4

Perform laboratory analyses on food products in a primary products food processing operation.

Performance criteria

4.1 Prepare food product samples and equipment.

4.2 Perform laboratory analyses on food products.

4.3 Perform laboratory analyses in a safe and aseptic manner.

4.4 Confirm results of laboratory analyses are within required limits of accuracy.

4.5 Clean and store test equipment.

Outcome 5

Calculate and report results of laboratory analyses in a primary products food processing operation.

Performance criteria

5.1 Perform calculations and record results.

5.2 Interpret and report calculations to determine conformance.

5.3 Identify any non-conformance and take corrective action.

Replacement information	This unit standard replaced unit standard 22005, unit standard 22006 and unit standard 22007.

Planned review date	31 December 2026

Last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	18 June 2015	31 December 2024
Review	2	24 March 2022	N/A

Consent and Moderation Requirements (CMR) reference	0022

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

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.