

Title	Describe, calibrate, and maintain laboratory test equipment in a primary products food processing operation		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: describe the principles of operation for laboratory test equipment; prepare laboratory test equipment items for calibration; perform calibrations on laboratory test equipment; record and document laboratory test results; and maintain laboratory test equipment, 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 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*, 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 Laboratory test equipment may include but is not limited to – autotitrators, Karl Fischer titrators, Kjeldahl protein instruments, spectrophotometers; evidence is required of two pieces of equipment.
- 4 All evidence presented in this unit standard must be in accordance with organisational requirements.

Outcomes and performance criteria

Outcome 1

Describe the principles of operation for laboratory test equipment in a primary products food processing operation.

Performance criteria

- 1.1 Describe the principles of operation for laboratory test equipment in terms of the technology used.
- 1.2 Describe maintenance procedures in terms of manufacturer's specifications.
- 1.3 Describe calibration procedures in terms of manufacturer's specifications.
- 1.4 Describe quality control checks in terms of types and causes of typical errors.

Outcome 2

Prepare laboratory test equipment items for calibration in a primary products food processing operation.

Performance criteria

- 2.1 Select authorised calibration procedure in accordance with organisational requirements.
- 2.2 Identify hazards, and use the appropriate personal protective equipment, safety equipment and procedures.
- 2.3 Assemble, set up and adjust or calibrate specified reference standards and measuring equipment.
- 2.4 Confirm measuring equipment as meeting the laboratory's specification requirements and complying with the calibration procedure.
- 2.5 Identify and minimise potential sources of measurement error.

Outcome 3

Perform calibrations on laboratory test equipment in a primary products food processing operation.

Performance criteria

- 3.1 Perform individual tests within acceptable variance to ensure repeatability of measurement.
- 3.2 Confirm readings as being the result of a valid measurement and record data.

- 3.3 Adjust instruments under calibration to bring readings within specification and record data.
- 3.4 Analyse resulting test data to detect trends or inconsistencies that would significantly affect the accuracy or validity of the test results.

Outcome 4

Record and document laboratory test results in a primary products food processing operation.

Performance criteria

- 4.1 Report and document compliance or non-compliance with requirements of the test and/or specifications.
- 4.2 Record results of each test.
- 4.3 Attach where required calibration labels, equipment stickers, quality control tags and seals.

Outcome 5

Maintain laboratory test equipment in a primary products food processing operation.

Performance criteria

- 5.1 Identify maintenance procedures and records.
- 5.2 Maintain equipment, facilities, reference standards and stocks of consumables.
- 5.3 Plan and evaluate maintenance.
- 5.4 Identify, document and report maintenance needed for faulty or damaged equipment.

Replacement information	This unit standard replaced unit standard 21988.
--------------------------------	--

Planned review date	31 December 2026
----------------------------	------------------

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
--	------

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.