

Title	Carry out a cheese and lactic casein fermentation process in a dairy processing operation		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: describe the cheese and lactic casein fermentation process; describe the preparation and use of starters for cheese making; prepare cheese and lactic casein fermentation equipment for operation; and operate and monitor cheese and lactic casein fermentation equipment, in a dairy processing operation.
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Classification	Dairy Processing > Milk Products
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Available grade	Achieved
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Guidance Information

- 1 Legislation and regulations relevant to this unit standard include but are not limited to:
 - Animal Products Act 1999;
 - Health and Safety at Work Act 2015;
 - Animal Products (Dairy) Regulations 2005;
 and any subsequent amendments.
- 2 All evidence presented in this unit standard must be in accordance with:
 - organisational requirements.
- 3 Definitions

Control points – refer to those key points in a work process which must be monitored and controlled. This includes food safety (critical) quality and regulatory control points as well as inspection points.

Materials – refer to raw materials/pre-processed materials to be fermented, starters such as single strain starters, multiple strain cultures, mixed strains.

Organisational requirements – instructions to staff on policies and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – site specific requirements, and company quality management requirements.
- 4 This unit standard must be assessed in a realistic workplace environment. The candidate must be under realistic time pressures and use relevant commercial equipment.

Outcomes and performance criteria

Outcome 1

Describe the cheese and lactic casein fermentation process in a dairy processing operation.

Performance criteria

- 1.1 Describe the cheese and lactic casein fermentation process in terms of basic principles.
- 1.2 Describe cleaning and sanitation requirements and procedures for a cheese and lactic casein fermentation process.
- 1.3 Describe the functions and basic operating principles of components of cheese and lactic casein fermentation equipment.
- Range evidence is required of three components.
- 1.4 Describe how the quality, composition and physical characteristics of raw materials affect the cheese and lactic casein fermentation process in terms of process outcomes.
- 1.5 Describe the main cheese and lactic casein fermentation controls and quality control points in terms of their effect on the quality of the product.
- Range controls and quality control points may include but are not limited to – procedures, operating parameters, equipment and instrumentation components, materials and services; evidence of three controls is required; effects may include but are not limited to – physical quality, functional quality, microbiological quality, consistency of quality; evidence of three effects is required.
- 1.6 Describe a critical control point in terms of key operating parameters, monitoring and operational checks.

Outcome 2

Describe the preparation and use of starters for cheese making in a dairy processing operation.

Performance criteria

- 2.1 Describe the preparation and use of starters for cheese making in terms of preparation of bulk starter media for the growth of starter organisms.
- Range preparation includes but is not limited to – environmental and equipment hygiene, antibiotic testing, heat treatment.

2.2 Describe the preparation and use of starters for cheese making in terms of inoculation and incubation of starter organisms.

Range inoculation and incubation includes but is not limited to – traditional incubation, neutralisation, concentration of starter organism.

2.3 Describe the preparation and use of starters for cheese making in terms of storage requirements for maintenance of starter activity.

Outcome 3

Prepare cheese and lactic casein fermentation equipment for operation in a dairy processing operation.

Performance criteria

3.1 Identify production requirements for fermentation.

3.2 Confirm materials and services necessary to the cheese and lactic casein fermentation process are available to meet production requirements.

3.3 Check cheese and lactic casein fermentation equipment in terms of status, condition and readiness for use.

Outcome 4

Operate and monitor cheese and lactic casein fermentation equipment in a dairy processing operation.

Performance criteria

4.1 Start up cheese and lactic casein fermentation equipment.

4.2 Monitor cheese and lactic casein fermentation equipment, product and control points to confirm that they meet production requirements.

Range monitoring may include but is not limited to – monitoring control points and parameters, adjusting operating parameters, plant checks, identifying sampling and testing requirements, taking samples, handling samples, dispatch of samples, conducting tests; evidence of three monitoring examples is required.

4.3 Identify, rectify and/or report any out-of-specification product, process and equipment performance.

4.4 Clean and sanitise cheese and lactic casein fermentation equipment.

4.5 Collect, treat and dispose of or store waste for recycling.

4.6 Record workplace information related to operating and monitoring fermentation equipment.

4.7 Shut down cheese and lactic casein fermentation equipment.

Range shutdown includes but is not limited to – putting plant on standby, routine, emergency.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	30 June 2003	31 December 2014
Rollover and Revision	2	25 September 2006	31 December 2014
Rollover	3	17 July 2009	31 December 2016
Review	4	18 June 2015	31 December 2024
Review	5	27 May 2021	N/A
Revision	6	26 January 2023	N/A

Consent and Moderation Requirements (CMR) reference	0022
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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 if you wish to suggest changes to the content of this unit standard.