



Australian Government

FBPCHE5006 Produce rennet coagulated artisan cheese

Release: 1

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Modification History

Release	Comments
Release 1	This version released with FBP Food, Beverage and Pharmaceutical Training Package Version 3.0.

Application

This unit of competency describes the skills and knowledge required to produce a range of rennet coagulated artisan cheeses, including hard and semi-hard cheese.

This unit applies to cheesemakers who have responsibility for overseeing the production of cheese, adapting the process where required to suit the specified outcome, and complying with workplace health and safety, food safety, record keeping and quality assurance requirements for the cheese making process.

No licensing or certification requirements apply to this unit at the time of publication. However, legislative and regulatory requirements for food processing exist, so local requirements must be checked. All work must comply with Australian food safety standards and relevant codes of practice.

Pre-requisite Unit

Nil

Unit Sector

Cheese (CHE)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for artisan cheese making	1.1 Identify characteristics, make parameters and production goals of type of rennet coagulated cheese to be produced 1.2 Identify hazards and manage risks associated with producing cheese of that type 1.3 Prepare make and ripening sheet for the cheese to be made,

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	showing reference parameters for that cheese type, and record all actual make and ripening parameters on the sheet as they occur 1.4 Prepare milk and starter culture using good hygiene practice (GHP) 1.5 Ensure all surfaces meet cleanliness and sanitisation requirements 1.6 Manage GHP and good manufacturing practice (GMP) throughout cheese making process 1.7 Record cheese production and ripening information according to workplace procedures
2. Prepare milk	2.1 Sample raw or pre-pasteurised milk and analyse composition 2.2 Confirm desired outcome of the cheese making process, based on milk composition and production goals 2.3 Standardise milk or modify make process for consistent outcome, as required
3. Inoculate milk and mix cheese ingredients in vat	3.1 Add colour to the milk to change the colour of the cheese according to cheese type 3.2 Add starter cultures and mould spores according to cheese type 3.3 Add adjunct cultures to influence the texture and flavour of the ripened cheese according to cheese type 3.4 Add enzymes to alter the flavour profile of the ripened cheese according to required cheese type 3.5 Acidify the milk with organic or inorganic acids before renneting according to required cheese type 3.6 Use acid to partly acidify the milk prior to adding culture to control the calcium phosphate level in the curd during cheese making, according to required cheese type 3.7 Add cultures and rennet to milk and hold at temperature according to required cheese type 3.8 Maintain a log of pH and temperature to monitor yield
4. Cut, stir and process the curd	4.1 Calculate total time, flocculation and hardening times for optimum acidification curve, coagulation and moisture content, according to desired cheese type and parameters 4.2 Supervise curd hardening, temperature and cutting to achieve optimal yield and the required acidification curve and moisture level

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	for the cheese 4.3 Monitor stirring, agitation, temperature and size of the curd and whey 4.4 Plan the heating schedule to ensure optimal syneresis for cheese type 4.5 Heat and stir curd and whey as required and check for uneven curd or overheating according to required outcome 4.6 Remove part of the whey and replace with water to wash lactose and lactic acid from the curd if required for specific cheese 4.7 Mat the curd under the whey to achieve required outcome if required for specific cheese 4.8 Remove all or part of the whey from the curds by draining out the vat, in line with required outcome 4.9 Prepare moulds into which curds will be hooped 4.10 Prepare curd for milling if required for specific cheese 4.11 Prepare curd for stretching if required for specific cheese 4.12 Prepare curd for hooping into chosen moulds
5. Monitor and adjust processing	5.1 Monitor processing to control moisture in cheeses 5.2 Control the rate and the amount of acid development 5.3 Control calcium phosphate levels to influence basic cheese structure 5.4 Control flavour and texture of the cheese by cutting and stirring, turning and draining and regulating pH, salt, moisture and fat 5.5 Control cheese flavour and pH levels by adding ingredients, such as milks, cultures, coagulating agents and salt 5.6 Control processing parameters to achieve optimal yield and parameters of desired cheese
6. Mould, turn, salt, press and age cheese	6.1 Hoop curd into prepared moulds at appropriate time 6.2 Turn cheeses in moulds at appropriate intervals to maximise optimal drainage and acidification 6.3 Press cheese and remove from moulds where appropriate for cheese type 6.4 Prepare the curd or cheese for salting if required

Elements	Performance Criteria
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	6.5 Apply salting treatments to ensure adverse salt profile effects are minimised in the finished product 6.6 Maintain brine bath, if used, for optimal salting and food safety outcomes, according to type of cheese being brined 6.7 Apply treatments to, and age, rennet coagulated cheeses to develop optimal flavour and texture, in line with required outcome and food safety requirements 6.8 Monitor, adjust and record ripening parameters for the cheese according to type, including turning, washing, brushing, ambient air temperature, humidity, air movement, air renewal
7. Conduct housekeeping activities	7.1 Clean equipment and work area in line with workplace procedures 7.2 Conduct routine maintenance activities 7.3 Dispose of waste in line with regulatory requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Interpret cheese make requirements from a variety of sources to consolidate information for cheese production
Writing	Document details of make process, including weights, temperature, humidity, pH, titratable acidity, salt and organoleptic parameters
Numeracy	- Weigh and measure ingredients for cheese making - Sample cheese to analyse pH, titratable acidity, moisture and salts - Calculate cheese yields
Get the work done	Adjust processing parameters and problem-solve issues as they arise

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPCHE5006 Produce rennet coagulated artisan cheese	Not applicable	New unit	No equivalent unit

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4>

Assessment Requirements for FBPCHE5006 Produce rennet coagulated artisan cheese

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has produced at least three varieties of rennet coagulated cheeses, including:

- one washed curd cheese
- one mould ripened cheese
- one milled curd cheese.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- the common types of rennet coagulated cheeses
- processes for making different types of rennet coagulated cheeses
- the chemical and physical composition of bovine and non-bovine milks, including on a seasonal basis, and components important in cheese making
- the main components of milk and cheese (both curds and whey, proteins, fats, carbohydrates and minerals) and how they change through processing and ripening
- specifications of desired cheese product at each stage of making and ripening
- typical bacterial, yeast and mould cultures and the flavours and textures they produce
- moisture control in cheese making
- types and impact of inhibitory substances in milk
- microbial contaminants of cheese (lipolytic bacteria, yeasts, moulds, bacillus, listeria, Escherichia coli, salmonella, coliforms and staphylococci) and their impact on cheese quality
- milk assessment and preparation for cheese making
- how to adjust the process for the desired cheese depending on the milk's composition
- types of starters and adjuncts used and their role in the fermentation and ripening processes

- types of adjunct cultures and their role in the flavour and texture characteristics of the ripened cheese
- using rennet as a coagulating enzyme
- processes of coagulation and syneresis and their role in rennet coagulated cheese making
- curd size and its impact on moisture and acidification
- buffer power in cheese and how it affects the cheese
- moisture and drainage control in cheese making
- white and blue mould and yeast treatments and their role in cheese making and ripening
- control points and critical control points in the manufacture and ripening of each cheese type
- the relationship between acidification and various physical manipulations of the curd, including cutting, stirring, washing, hooping, turning and pressing
- effects of pH and temperature on cheese processing performance and product quality
- principles of brine salting and maintenance of brine salting systems for brine salted cheeses
- principles of dry salting for dry salted cheeses
- sampling and testing procedures for microbes
- sampling procedures for cheese making
- contamination/food safety risks associated with the process, and related control measures
- techniques used to monitor the cheese making process, such as inspecting, measuring and testing
- common causes of variation and corrective action required for each cheese making process
- organoleptic properties of rennet coagulated cheeses and their relationship to processes and ingredients in cheese making
- yield efficiency
- cleaning and sanitation requirements for cheese making and ripening
- workplace health and safety hazards and controls
- procedures for recording production and performance information
- environmental issues and controls relevant to the process, including waste recycling, collection and handling procedures
- Food Standards Code in relation to dairy processing
- state/territory, Commonwealth and industry requirements relevant to food processing.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a workplace setting or an environment that accurately represents a real workplace
- resources, equipment and materials:
 - ingredients, production process and related equipment for rennet coagulated cheese
 - sampling and testing equipment and procedures

- food safety related information, including requirements for raw milk.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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