



Australian Government

Assessment Requirements for FBPCHE5001 Carry out sampling and interpret tests for cheese production

Release: 1

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Modification History

Release	Comments
Release 1	This version released with the FBP Food, Beverage and Pharmaceutical Training Package Version 2.0.

Performance Evidence

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

There must be evidence that the individual has carried out sampling and interpreting tests for cheese production, including:

- interpreting and applying three different sampling plans and procedures, including:
 - in relation to the process chart for a cheese product
 - hard cheeses using a cheese trier or sample shaft
 - liquid cheese homogenate for microbiological analysis
- measuring and altering pH
- interpreting test results for yeasts and moulds, coliforms and staphylococci
- determining and applying methods for the control of growth of microorganisms
- identifying and reviewing safety hazards and control methods required when handling chemicals and working with processes that involve chemical reactions.

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:

- use of technical terms used to communicate information on properties of food and materials commonly used in the food industry
- physical characteristics or phenomena that occur through cheese processing:
 - chemistry (acidity, calcium phosphate and salt levels)
 - microbiological counts
 - handle and feel of the product
 - total solids (or moisture)
 - heat and temperature
 - taste, smell and appearance of the final cheese product

- the processes where characteristics and phenomena can be observed
- processes for the making of different types of cheese
- the processing stages designed to affect the structure of these compounds (e.g. the use of fermentation to coagulate the casein micelles for acid-coagulated cheeses, compared to the use of rennet for rennet-coagulated cheeses)
- common chemical reactions that occur, factors required to cause a reaction, and the effect of reactions for cheese making, including both spontaneous and controlled reactions, such as:
 - oxidation
 - enzymic
 - Maillard
 - acid-based reactions
 - other reactions relevant to a given cheese type and production process
- physical changes that occur to ingredients and product through cheese making
- reactions and properties of carbohydrates, proteins and fats through the cheese making process
- behaviour of each type of matter and its relationship to the production process
- changes in acidity through the cheese making process and its influence on spoilage, moisture and mineral content, texture and flavour
- temperature control and its impact throughout a cheese making process
- acidity profile (either pH or titratable acidity) ranges for the different types of cheeses
- the significance of fermentation for the control of spoilage and pathogens in cheese, and its influence on moisture levels, mineral content, texture and flavour
- the basic molecular structures of carbohydrates, proteins and fats
- the role of enzymes in generating biological reactions (e.g. the use of rennet as a coagulating agent)
- coagulation time and setting time for rennet
- factors that influence syneresis and its importance in cheese making
- types of microbial cells and their components and functions
- the main types of microorganisms and their activity in cheese making, both those that enhance the process and those that impact negatively on cheese characteristics
- types of pathogenic bacteria that can be present in milk and cheese products
- sampling requirements for cheese making
- pH, moisture and salt gradients in brine salted cheese (need for homogeneity in sampling)
- buffering in milk and the role of casein and phosphate levels
- basic molecular structures of carbohydrates, proteins and fats
- disinfection and sterilisation as applied to practical aspects of microbiological diversity and growth
- microorganisms of significance in the production and spoilage of cheese
- raw milk quality tests
- testing methods and interpretation of results for salmonella, staphylococcus, listeria and E. coli in raw milk cheese
- testing methods and interpretation for bacteriophage in whey

- interpreting measurements at stages in a cheese making process covering:
 - salt to moisture ratio (S/M)
 - moisture in the non-fat substance (MNFS)
 - fat in the dry matter (FDM)
- chemical and physical methods available for controlling microbial growth
- health and safety hazards and control methods, and food safety standards relevant to the workplace
- sources of technical information.

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:
 - production process and related equipment for cheese production
 - sampling and testing equipment
 - • a range of cheeses at different stages of production for sampling
 - test results for a range of different cheeses or different stages of production
- specifications:
 - manufacturers' advice and product specifications.

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

Links

Companion Volume Implementation Guides are found in VETNet: -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4>