



Australian Government

FBPFST5031 Identify the microbiological and biochemical properties of fermented food and/or beverages

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 identify the microbiological and chemical properties of fermented food and/or beverages, including the identification of food contamination and spoilage.

This unit applies to individuals who apply technical and theoretical knowledge and who design and communicate solutions to sometimes complex problems.

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

Food Science and Technology (FST)

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. Apply the principles of microbiological quality control for successful fermentation	1.1 Determine the fermentation critical control points (CCPs) for successful fermentation for different fermented food and beverage categories 1.2 Identify the indicators of unsuccessful fermentation for different fermented food and beverage categories

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Determine the correct microbiological quality control program for specific fermented food and beverage in terms of the Food Standards Code
2. Identify key microorganisms involved in fermentation	2.1 Identify the key microorganisms used in different fermentation processes 2.2 Identify the differences between different fermentation processes and when they are used 2.3 Identify the indicators of successful fermentation for each different fermentation process
3. Identify food poisoning and spoilage microorganisms that may result from incorrect fermentation practices	3.1 Identify the major pathogenic organisms and any associated toxins that may be present in an unsuccessful ferment 3.2 Interpret and determine appropriate action based on microbiological and chemical test results 3.3 Determine the ramifications of fermented product contamination in terms of public health and product shelf-life quality
4. Perform microbiological sampling and testing techniques	4.1 Perform microbiological sampling techniques to collect production samples 4.2 Take samples to determine the presence of the pathogenic and spoilage organisms to confirm adequacy of operating processes, including plant sanitation 4.3 Organise appropriate storage and transport of samples to testing facility 4.4 Identify the appropriate range of actions required when out-of-specification test results are received
5. Identify the biochemical pathways that occur in fermented food and beverage production	5.1 Identify the biochemical pathways associated with the different categories of fermented food and beverages 5.2 Identify the reactions and properties of sugars and starches through a fermentation process
6. Identify and conduct simple biochemical tests to track the process of fermenting food	6.1 Identify the significance of a range of chemical parameters to track the progress of the fermentation process, including sugar levels, pH, acidity, water activity (A_w), salinity, alcohol 6.2 Test for sugar levels to determine fermentation progress 6.3 Test for starch levels to determine fermentation progress

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	6.4 Test for acidity to determine fermentation progress 6.5 Handle samples and reagents safely

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 food safety guidelines, standards and regulations - Interpret documented processes for control of microbial growth in food products
Numeracy	- Maintain and analyse data resulting from microbiological tests - Determine calibration procedures and schedule for test equipment

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPFST5031 Identify the microbiological and biochemical properties of fermented food and/or beverages	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>