



Australian Government

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

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Modification History

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

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 identified and analysed microbiological and biochemical effects that take place in the fermentation of three different food and/or beverage products, including:

- conducting relevant in-process tests required to monitor the progress of fermentation.

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:

- types of fermentation, including yeasts, bacteria, symbiotic culture of bacteria and yeast (SCOBY) and fungi
- types and effects of microbiological and chemical hazards from incorrect fermentation (for each product)
- spoilage in fermented food and/or beverages and how they could be avoided
- processes used in the control of microbial growth in food products
- criteria for successful fermentation of different types of fermented food and beverages, including: organism, fermentation time, fermentation temperature, fermentation atmosphere (aerobic vs anaerobic), pH for different fermented food and beverage categories, water activity (A_w)
- major microorganisms responsible for food poisoning and spoilage
- Food Standards Code in relation to fermented food and beverages
- standard microbiological techniques to identify food poisoning and spoilage organisms
- the importance of plant hygiene and how it can affect the finished product
- microbiological toxins and aflatoxins
- typical spoilage patterns in fermented foods caused by chemical and microbiological issues

- microbiological quality control programs
- plant hygiene, including sanitation and verification techniques
- rapid microbiological techniques:
 - accelerated culture techniques
 - rapid biochemical tests
 - measurement of total bacteria metabolism
 - measurement of spoilage
 - non-traditional methods
 - automated and mechanised methods
- the relevance of rapid microbiological technology, as related to control of plant hygiene
- potential microbiological pathogens
- chemical hazards
- critical control limits and microbiological processes and species in fermented food and beverage production
- characteristics and phenomena that occur during fermentation
- common chemical reactions that occur in food processing, including both spontaneous and controlled reactions, including:
 - the role of enzymes in generating biological reactions
 - tests commonly used to measure phenomena, and related units of measurement
 - transition phases applicable to a given production process
 - the role of temperature and pressure in the transition process
- pH and its impact on fermentation
- role of secondary fermentation.

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:
 - test equipment, manufacturers' advice and operating procedures
- specifications:
 - product standards.

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

Links

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