



Australian Government

**Assessment Requirements for FBPFST5006
Apply food microbiological techniques and
analysis**

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 applied microbiological techniques to analyse food on at least two occasions, including:

- critically examining the principles of rapid microbiological techniques, including:
 - accelerated culture techniques
 - rapid biochemical tests
 - measurement of total bacteria metabolism
 - measurement of spoilage
 - non-traditional methods
 - automated and mechanised methods
- performing tests to determine the adequacy of plant sanitation procedures, by rapid microbiological or other techniques, including:
 - rinse methods
 - swab methods
 - replica or contact methods
- using standard microbiological techniques to isolate and identify yeasts and bacteria in given food samples
- performing sub-culturing and pure culture techniques for 'scale up' to 'starter' cultures
- maintaining new culture strains after fermentation using standard techniques
- recording, analysing and documenting data, with associated conclusions and recommendations
- ascertaining the effect of a standard food preserving technique on the growth patterns of microbes
- using standard microbiological techniques to identify and enumerate food poisoning and spoilage organisms from a food sample
- determining the ramifications of product contamination in terms of public health and product shelf-life

- ascertaining the spoilage patterns of specific foods at different temperatures of storage
- using industry standard terminology.

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:

- processes used in the control of microbial growth in food products
- major bacteria responsible for food poisoning and spoilage
- processes used in the control of microbial growth in food products
- Food Standards Code
- statistical methods for process control, including Viable Count methods
- 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
- spoilage patterns
- growth cycle of microorganisms in food
- the relationship between spoilage patterns and the growth cycle of the specific food spoilage/poisoning organisms
- microbiological quality control programs
- plant hygiene, including sanitation checks – rinse, swab, contact and rapid methods
- 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
- types and characteristics of fermentation microorganisms, including:
 - *Saccharomyces* spp.
 - *Streptococcus* spp.
 - *Lactobacillus* spp.
- standard microbiological techniques to isolate and identify yeasts and bacteria in given food samples
- sub-culturing and pure culture techniques for ‘scale up’ to ‘starter’ cultures
- maintenance of new culture strains after fermentation
- critical control limits and microbiological processes and species in food production
- analysis of microbiological data by comparison with food safety and production standards
- effective data presentation and reporting
- health and safety in the workplace hazards and controls relating to work processes.

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:
 - laboratory and related equipment, manufacturers' advice and operating procedures
 - methods and related software systems for collecting data and calculating yields, efficiencies and material variances appropriate to production environment
- specifications:
 - tests used to report relevant product/process information and recorded results.

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