



Australian Government

FBPTEC4022 Prepare starter cultures for fermentation

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 prepare for the fermentation of food or beverages, including producing a starter culture.

This unit applies to those workers who have responsibility for overseeing the production of fermented food and/or beverages and the quality assurance requirements associated with those products.

No licensing or certification requirements apply to this unit at the time of publication. However, legislative and regulatory requirements for fermented food processing, and commercial sale of food and beverage products, 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

Technical (TEC)

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. Set up for starter culture production	1.1 Identify hazards in the starter culture production and manage risks 1.2 Clean and sanitise equipment and environment according to workplace procedures 1.3 Identify specification for starter culture 1.4 Confirm availability of raw materials to prepare starter

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.5 Check quality of raw materials meets specification for starter culture
2. Produce starter	2.1 Check the integrity of the yeast, bacteria and/or fungi to ensure it is clear of contamination 2.2 Inoculate cultivation medium with yeast, bacteria and/or fungi, specific to product specification 2.3 Mix medium with yeast, bacteria and/or fungi 2.4 Incubate for specified time, in line with starter culture requirements 2.5 Stop incubation process when starter medium reaches desired parameters 2.6 Record details of process for traceability, in line with organisational and regulatory requirements 2.7 Store starter for future use

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
Numeracy skills	- Convert units involving multiples and submultiples - Use fractions, decimals, proportions and percentages to determine responses to results - Use volumes (ml, L) and weights (mg, g, kg) to describe product quantities - Calculate dose (mg), average mass, mass percentage, density, moisture, relative and absolute humidity - Determine ratios, such as mass to mass, mass to volume and volume to volume percentages - Calculate concentration, such as g/100mL, mg/L and dilution ml/L
Get the work done	- Think through options to identify and respond to atypical results of tests - Trace and source obvious cause of artefact or malfunction

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPFTEC4022 Prepare starter cultures for fermentation	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 FBPTEC4022 Prepare starter cultures for fermentation

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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 prepared for fermentation by producing two different starter cultures from the following list, each on two separate occasions, that consistently meets specifications for the product:

- yeast
- bacteria
- fungi
- yeast and bacterial symbiotic culture of bacteria and yeast (SCOBY)
- combinations of fermentation organisms above relevant to product.

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:

- general fermented products that require a starter culture to begin the fermentation process
- ideal temperature to promote enzyme activity, relevant to starter culture
- specific starters used for different products, including yeast, bacteria, fungi, and yeast and bacterial SCOBY, or combinations of these relevant to product
- contaminants that may affect different types of starters
- natural starters versus commercial starters, including mothering process
- typical basic tests, equipment and methods relevant to starter culture preparation, such as temperature, pH and humidity
- sanitation requirements and purpose
- instruments and measurements used for typical tests relevant to product, such as thermometer probe, pH meter, hygrometer and calibration requirements for each
- acceptable parameters for typical test results
- anaerobic and aerobic pathogen risks associated with starter culture preparation
- air circulation requirements of specific starter cultures

- possible effects of temperature fluctuations, relative humidity and air circulation on starter culture
- workplace and/or legal traceability requirements
- interpretation of test results, including simple calculations
- methods for controlling atypical outcomes of tests, relevant to process.

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 fermented food or beverage production environment
- resources, equipment and materials:
 - raw materials and equipment to produce starter
 - test equipment
- specifications:
 - specification for product.

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

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