



Australian Government

FBPBEV3003 Operate and monitor a brewery fermentation process

Release: 1

FBPBEV3003 Operate and monitor a brewery fermentation process

Modification History

Release	Comments
Release 1	This version released with FBP Food, Beverage and Pharmaceutical Training Package Version 6.0.

Application

This unit of competency describes the skills and knowledge required to set up, operate, adjust and shut down brewery fermentation equipment to ferment and mature beer.

This unit applies to individuals who work in a brewery. It typically applies to the production worker responsible for applying basic operating principles to the operation and monitoring of brewery fermentation and maturation processes and associated equipment.

All work must be carried out to comply with workplace procedures, in accordance with state/territory health and safety and food safety regulations, legislation and standards that apply to the workplace.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Beverages (BEV)

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. Prepare for work in processing area	1.1 Check production requirements according to product specifications 1.2 Confirm clarification requirements, including specifications for any additions and agents

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 Confirm availability of services according to workplace procedures 1.4 Wear appropriate personal protective clothing, and ensure correct fit according to safe work requirements 1.5 Conduct pre-start checks according to operator instructions, including checking that hygiene and sanitisation standards are met and all safety guards are in place 1.6 Set the fermentation process to meet production requirements
2. Operate and monitor the system	2.1 Start up, operate and monitor the system according to safe work procedures 2.2 Confirm system and sub-system outputs meet specifications 2.3 Monitor equipment to confirm optimal operations 2.4 Monitor and control temperature to confirm optimal conditions 2.5 Monitor and control pressure to ensure optimal operating conditions 2.6 Undertake analysis to ensure yeast is effective and free of bacterial contamination according to food safety and workplace 2.7 Identify, rectify and report out-of-specification product, process and equipment performance 2.8 Record workplace information for the beer fermentation and maturation process according to workplace procedures
3. Recover beer if required	3.1 Put yeast slurry through a beer recovery process in order to minimise beer wastage 3.2 Transfer recovered beer to appropriate tank or vessel according to food safety and workplace procedures
4. Shut down the system	4.1 Shut down the system safely according to operating procedures 4.2 Clean and maintain equipment to meet the cleaning schedule and procedural requirements 4.3 Collect, treat and dispose of or recycle waste generated by both the process and cleaning procedures 4.4 Record workplace information in the appropriate format

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 workplace and standard operating procedures relevant to work task - Interpret production requirements
Writing	Complete processing records using electronic, digital and/or paper-based formats
Numeracy	- Monitor and interpret production and process control indicators and data - Use fractions, decimals, proportions and percentages to determine responses to results - Use volumes (ml, L, hL) and weights (mg, g, kg) to describe product quantities

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPBEV3003 Operate and monitor a brewery fermentation process	FBPOPR2030 Operate a brewery fermentation process	Prerequisite removed Unit title and sector code updated to better match work task Code updated to better match complexity of work task Minor changes to Performance Criteria to clarify intent Foundation Skills refined Performance Evidence clarified Minor changes to Knowledge Evidence and Assessment Conditions	Equivalent

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 FBPBEV3003 Operate and monitor a brewery fermentation process

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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 set up, operated, adjusted and shut down brewery fermentation and maturation equipment to process at least one batch of beer to specifications, including:

- applying safe work practices
- applying food safety procedures to work practices
- monitoring control points within the fermentation process
- sampling to ensure yeast effectiveness and freedom from bacterial contamination
- undertaking corrective action required in the event of variation to specifications and operating parameters.

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:

- purpose, principles and requirements of the fermentation and maturation of beer
- relationship between the fermentation and maturation process, and the wort production process
- stages and changes that occur during fermentation
- fermentation process specifications, procedures and operating parameters
- significance of control points within the fermentation and maturation process
- fermentation equipment and instrumentation components, purpose and operation
- vessel-cooling systems for the brewery fermentation process
- purpose of temperature control and cold storage in the beer maturation process
- purpose of protein absorbing agents
- purpose of oxygen scavenging agents
- purpose of tannin absorbing agents
- procedures for vessel transfer

- quality characteristics to be achieved
- common causes of variation, and corrective action required
- purpose of finings in a beer maturation process
- purpose of dry hopping
- purpose of other flavour additions in cellars
- health and safety hazards and controls, including the purpose and limitations of protective clothing and equipment relevant to the work process
- contamination/cross-contamination and food safety risks related to the fermentation and maturation process and related controls
- common microbiological, physical, chemical and allergen hazards related to brewing, including the types of hazards likely to occur, the conditions under which they occur, possible consequences, and control methods to prevent occurrence
- good manufacturing practices (GMP) relevant to work task
- procedures and responsibilities for reporting problems during the fermentation process
- environmental issues and controls, including waste handling and disposal
- shutdown and cleaning requirements associated with changeovers, and types of shutdowns
- recording requirements and procedures for fermentation
- cleaning and sanitisation procedures for beer fermentation and maturation equipment
- sampling and testing procedures.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - a brewery or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - personal protective clothing and equipment
 - relevant hazard control equipment
 - manual handling equipment
 - fermentation and maturation processing equipment
 - wort to be processed
 - sampling and testing equipment
- specifications:
 - work procedures, including advice on safe work practices, food safety, quality and environmental requirements
 - information on equipment capacity and operating parameters
 - recording requirements and procedures.

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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