



Australian Government

FBPDPR3002 Operate and monitor a fermentation process

Release: 1

FBPDPR3002 Operate and monitor a 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 knowledge and skills required to set up, operate, adjust and shut down a fermentation process typically used in the production of dairy products.

This unit applies to individuals who apply basic operating principles to the operation and monitoring of machines and equipment used for the fermentation of dairy products in a dairy processing environment.

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

Dairy Processing (DPR)

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 the fermentation equipment and process for operation	1.1 Confirm materials and personal protective equipment are available 1.2 Identify and confirm cleaning and maintenance requirements according to food safety requirements 1.3 Identify food safety requirements for the task and product

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.4 Fit personal protective equipment, and adjust machine components and attachments needed for operating requirements 1.5 Enter parameters required to meet safety and operating requirements 1.6 Conduct pre-start checks according to workplace procedures
2. Operate and monitor equipment	2.1 Start up the fermentation process according to workplace procedures 2.2 Monitor equipment to identify variation in operating conditions 2.3 Adjust equipment operations to meet product specification 2.4 Take samples and confirm that fermentation meets specification 2.5 Identify, rectify and report out-of-specification product or process outcomes 2.6 Maintain the work area according to workplace guidelines, workplace health and safety and food safety requirements 2.7 Enter information in workplace records in required format
3. Shut down the fermentation process	3.1 Identify the appropriate shutdown procedure 3.2 Shut down the process according to workplace procedures 3.3 Identify and report maintenance requirements

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 standard operating procedures for the fermentation process
Writing	Record processing data using electronic, digital and/or paper-based formats
Numeracy	- Monitor processing time, temperature (°C), and water activity (A_w) - Read and monitor gauges and scales

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPDPR3002 Operate and monitor a fermentation process	FBPDPR2006 Operate a fermentation process	Unit title and code updated to match complexity of task Minor changes to Performance Criteria for clarity 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 FBPDPR3002 Operate and monitor a 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 operated a fermentation process to produce at least one batch of fermented food to meet product specification, including:

- applying food safety procedures to work practices
- following safe work practices
- taking corrective action in response to typical faults and inconsistencies.

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 and basic principles of the fermentation process, including the stages and reactions that occur during fermentation
- basic operating principles of equipment, including:
 - main equipment components
 - status and purpose of guards
 - equipment operating capacities and applications
 - the purpose and location of sensors and related feedback instrumentation
- services required and action to take if services are not available
- the flow of this process and the effect of outputs on downstream processes
- quality characteristics to be achieved by the fermentation process
- types of starters used and their role in the fermentation process
- quality requirements of materials and the effect of variation on process performance
- operating requirements and parameters, and corrective action required where operation is outside specified operating parameters
- typical equipment faults and related causes, including:
 - signs and symptoms of faulty equipment

- early warning signs of potential problems
- methods used to monitor the fermentation process, including inspecting, measuring and testing as required by the process
- good manufacturing practices (GMP) relevant to work task
- inspection or test points (control points) in the process, and the related procedures and recording requirements
- contamination/cross-contamination and food safety risks associated with the process, and related control measures
- common causes of variation, and corrective action required
- health and safety hazards and controls, including the purpose and limitations of protective clothing and equipment relevant to the work process
- requirements of different shutdowns as appropriate to the process and workplace production requirements, including:
 - emergency and routine shutdowns
 - procedures to follow in the event of a power outage
- isolation, lock-out and tag-out procedures and responsibilities
- procedures and responsibility for reporting production and performance information
- environmental issues and controls relevant to the process, including waste or rework collection and handling procedures
- basic operating principles of process control, including the relationship between control panels and systems and the physical equipment
- routine maintenance procedures for fermentation equipment
- cleaning procedures for fermentation equipment
- procedures to record traceability of product.

Assessment Conditions

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

- physical conditions:
 - a workplace or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - personal protective equipment
 - fermentation equipment
 - product to be fermented
 - cleaning materials and equipment
- specifications:
 - work procedures, including advice on safe work practices, food safety and quality requirements
 - information on equipment capacity and operating parameters
 - product specifications, control points and processing parameters
 - sampling schedules

- documentation and recording requirements.

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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