



Australian Government

FBPTEC4013 Manage wort production for brewing

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 manage the production of wort that will be fermented and used in the production of beer.

This unit applies to workers who have responsibility for overseeing the production of wort for fermented beverages and the quality assurance requirements associated with those products. It may include supervising the work of others.

Legislative requirements relating to producing alcohol apply to this unit. Users are advised to check current requirements with the Australian Taxation Office and state/territory liquor licensing and health agencies.

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. Prepare to produce wort	1.1 Identify and apply standards, regulations and guidance materials that cover the risks associated with working in hazardous environments, including potentially explosive environments, dust, heat and steam 1.2 Wear appropriate personal protective equipment (PPE) to ensure personal safety 1.3 Apply effective clean-in-place (CIP) and sanitation procedures

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 Identify specification for product 1.5 Ensure adequate quantities of raw materials for specification 1.6 Check quality of raw materials meets quality specifications and record details
2. Mill grain	2.1 Set mill to crush malted grain to specification 2.2 Carry out test run to ensure malt is crushed to specification 2.3 Operate mill to crush malt and produce grist
3. Convert mash	3.1 Transfer grist to mash tun 3.2 Set water level, temperature and time in line with product specification, to convert starches to sugars 3.3 Operate mash tun to produce and convert mash 3.4 Monitor quality of mash using simple tests 3.5 Analyse test results and adjust process as required
4. Separate mash	4.1 Transfer mash into separation vessel 4.2 Monitor separation process by using simple tests 4.3 Dispose of spent grist in line with environmental requirements 4.4 Complete processing and batch records in line with workplace procedures
5. Boil wort	5.1 Transfer wort into kettle 5.2 Set temperature of kettle for controlled boil 5.3 Add hops and adjuncts to influence flavour, in line with specifications 5.4 Monitor quality of wort using simple tests 5.5 Analyse test results and adjust process as required 5.6 Complete processing and batch records to ensure traceability
6. Cast wort	6.1 Set operating parameters of equipment for wort transfer to cellar/fermentation vessel 6.2 Monitor quality of wort using simple tests 6.3 Analyse test results and adjust process as required 6.4 Cool and oxygenate wort to fermentation specification

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	6.5 Complete processing and batch records to ensure traceability
7. Conduct housekeeping activities	7.1 Clean equipment and work area in line with workplace procedures 7.2 Conduct routine maintenance activities 7.3 Dispose of waste in line with regulatory 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
Numeracy	- Measure and record weight of raw materials and volume of wort (using kg, L and hL) - Accurately read and interpret gauges and test results
Get the work done	Identify changes in quality of product and trace source

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPTEC4013 Manage wort production for brewing	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 FBPTEC4013 Manage wort production for brewing

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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 managed the production of one batch of wort that meets product specification, including:

- addressing risks and managing hazards
- taking samples to monitor quality
- completing batch records in line with workplace requirements.

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 of milling grain to expose starchy material in the husk
- problems created from grain that is too heavily crushed or milled
- stage and changes that occur during wort production
- purpose of malt, hops, water, adjuncts and the preparation procedure
- quality characteristics and uses of end product and output
- typical tests carried out on wort to check pH, bitterness, colour
- instruments used for testing and how each is calibrated and certified
- procedures and equipment used for transfer operations, including pumps, membranes, hoses, valves, control instruments
- formulae and calculations used in recipe design in order to adjust process as required
- isomerisation of hops
- roles of enzymes in mash process, particularly alpha and beta amylase
- equipment and instrumentation components, purpose and operation
- cleaning, sanitisation and sterilisation procedures and purpose
- significance and method of monitoring control points within the equipment operation
- common causes of variation and corrective action required

- hazards and controls, including manual handling, working with dust, potential for explosion when working with grain and milling, risks of burns when working with heat and steam
- routine maintenance requirements
- waste handling and disposal requirements
- hazards and controls, including manual handling, working with ethanol and flammable substances
- Australian Standards, legislation, regulations and workplace licence requirements related to working in hazardous and potentially explosive environments
- Food Standards Code in relation to brewing
- Australian Taxation Office (ATO) requirements for excise
- recording requirements for traceability of product and ATO regulations.

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:
 - raw materials for wort production
 - access to equipment for production of wort
 - testing equipment
 - safety equipment and personal protective equipment (PPE)
- specifications:
 - product specifications.

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

Links

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