

**Modification history**

Release	Comments
Release 1	This version released with FBP Food, Beverage and Pharmaceutical Training Package version 5.0.

FBPGRA3XX7	Prepare malted grain
<b>Application</b>	<p>This unit of competency describes the skills and knowledge required to operate commercial equipment associated with preparing malted barley or wheat. It covers operating and monitoring steeping, germinating, and kilning equipment.</p> <p>The unit applies to operators in commercial malting plants who are responsible for converting stored grain into malted barley or wheat. These operators are often known as maltsters.</p> <p>All work must be carried out to comply with workplace procedures, in accordance with State/Territory work health and safety legislation that apply to the workplace.</p> <p>No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
<b>Prerequisite Unit</b>	
<b>Unit Sector</b>	Grain processing (GRA)

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. Steep grain	1.1 Identify work requirements with relevant personnel, including batch requirements for steeping, germination, kilning and malt cleaning processes 1.2 Select, fit and use personal protective equipment according to workplace health and safety requirements 1.3 Confirm equipment status and condition 1.4 Set up, start and monitor equipment according to operating procedures 1.5 Transfer grain from storage into steeping equipment according to workplace procedures 1.6 Place hoses or other wetting equipment correctly to ensure uniform hydration and to avoid damage to grain 1.7 Immerse, drain and rest grain for the specified number of cycles 1.8 Monitor moisture content of grain during air resting to determine when it is ready for transfer to germination vessels 1.9 Discharge wastewater to treatment or holding or other facilities according to workplace procedures
2. Germinate grain	2.1 Feed grain into germination vessel or floor according to workplace procedures 2.2 Set up, operate and monitor turning and air blowing equipment to meet safety and production requirements 2.3 Monitor green grain for humidity, temperature, moisture, chitting or acrospires, and general condition 2.4 Adjust rate of turning, humidity and temperature according to specifications for malt type 2.5 Transfer modified green grain to kiln according to specifications for malt type and results of laboratory testing

<b>Elements</b>	<b>Performance Criteria</b>
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
3. Operate kiln to produce malt	3.1 Conduct first drying of modified grain 3.2 Confirm germination has stopped according to workplace procedures 3.3 Cure modified grain through correct combination of air flow and heat for malt product specification 3.4 Confirm colour, moisture content and other required specifications 3.5 Clean the malt according to workplace procedures and food safety requirements 3.6 Transfer separated culm to storage according to workplace procedures 3.7 Transfer malt to storage according to workplace procedures
4. Shut down process and complete work	4.1 Identify the appropriate shutdown procedure 4.2 Shut down the process safely according to operating procedures 4.3 Clean and sanitise equipment according to workplace health and safety and food safety procedures 4.4 Identify and report maintenance requirements according to workplace procedures

<b>Foundation Skills</b>	
<i>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.</i>	
<b>Skill</b>	<b>Description</b>
Reading	<ul style="list-style-type: none"> <li>Interpret workplace environmental procedures and controls</li> <li>Interpret waste handling requirements and procedures</li> <li>Interpret directions for the safe operation of equipment</li> </ul>
Writing	<ul style="list-style-type: none"> <li>Record product and processing information on electronic, digital and/or paper-based formats</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>Identify batch and recipe specifications</li> <li>Accurately measure goods by weight (kg, T) and volume (m<sup>3</sup>)</li> <li>Achieve specified moisture content in grain through correct combinations of water and air steeping cycles</li> <li>Correctly adjust kiln heat settings for drying or curing and for different types and grades of barley and malt</li> </ul>

<b>Unit Mapping Information</b>			
<b>Code and title current version</b>	<b>Code and title previous version</b>	<b>Comments</b>	<b>Equivalence status</b>
FBPGRA3XX7 Prepare malted grain	FBPGRA2012 Prepare malted grain	Unit AQF indicator 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	Equivalent unit

		and Assessment Conditions	
--	--	------------------------------	--

<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4</a>
--------------	---

DRAFT

<b>TITLE</b>	<b>Assessment requirements for FBPGRA3XX7 Prepare malted grain</b>
<b>Performance Evidence</b>	
<p>An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.</p> <p>There must be evidence that the individual has operated commercial equipment associated with preparing malted barley or wheat, to prepare at least one batch of grain to meet malting specification, including:</p> <ul style="list-style-type: none"> <li>• applying safe work practices</li> <li>• applying food safety procedures to work practices</li> <li>• controlling absorption of water by grain during steeping to achieve specified water content</li> <li>• undertaking sampling and testing during steeping, germination and cleaning to determine if grain and malt is within specifications</li> <li>• taking corrective action in response to typical faults and inconsistencies.</li> </ul>	
<b>Knowledge Evidence</b>	
<p>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:</p> <ul style="list-style-type: none"> <li>• changes to grain from the steeping process</li> <li>• changes in grain during germination</li> <li>• role of humidity and temperature in initiating and controlling germination of grain</li> <li>• common variations in grain quality and type</li> <li>• common customer malt recipes used in the enterprise and implications for malt production</li> <li>• standard transfer times between stages, including receiving to steeping, steeping to germination, and germination to kilning</li> <li>• procedures for dealing with contingencies, breakdowns and other non-standard events for preparing malted grain</li> <li>• good manufacturing practices (GMP) relevant to work task</li> <li>• contamination/cross contamination and food safety risks associated with the scalping and grading process and related control measures, including microbiological, physical, chemical and allergen hazards</li> <li>• contamination avoidance procedures for preparing malted grain, including: <ul style="list-style-type: none"> <li>• jewellery and loose objects in work area</li> <li>• security and access procedures to work areas</li> <li>• pest control procedures</li> </ul> </li> <li>• appearance of grains before and after cleaning (deculming)</li> <li>• cleaning requirements associated with changeovers and types of shutdowns for preparing malted grain</li> <li>• purpose of moisture and acrospires testing within the malting process</li> <li>• health and safety hazards and controls relevant to preparing malted grain</li> <li>• cleaning and sanitation procedures for malting equipment</li> <li>• procedures to track traceability of product.</li> </ul>	
<b>Assessment Conditions</b>	
<p>Assessment of skills must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>• physical conditions: <ul style="list-style-type: none"> <li>• a grain processing workplace or an environment that accurately represents workplace conditions</li> </ul> </li> <li>• resources, equipment and materials: <ul style="list-style-type: none"> <li>• personal protective clothing and equipment</li> <li>• steeping, germination, kilning and deculming equipment</li> <li>• grain for malting</li> <li>• malted grain cleaning equipment</li> </ul> </li> <li>• specifications: <ul style="list-style-type: none"> <li>• work procedures including advice on safe work practices, food safety and environmental requirements</li> <li>• steeping, germination and kilning specifications and procedures</li> </ul> </li> </ul>	

<b>Assessment Conditions</b>	
<ul style="list-style-type: none"><li>• recording requirements.</li></ul> <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	
<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4</a>

DRAFT