



Australian Government

Department of Education, Employment and Workplace Relations

FDFST4054A Identify and implement product safety for manufacturing of cereal products

Release: 2

FDFST4054A Identify and implement product safety for manufacturing of cereal products

Modification History

April 2012: Minor typographical corrections.

Unit Descriptor

Unit descriptor	This unit covers the skills and knowledge required to produce cereal products using documented procedures, carry out product testing, and conduct a quality review of the process.
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Application of the Unit

Application of the unit	This unit applies to food science and technology personnel who have roles in product design, quality assurance and production management. The unit typically applies to staff who have responsibility for maintaining product safety, quality and efficiency for manufacturing of cereal products. This unit includes using knowledge of food science and processes to determine the required food safety, quality and performance required from food production equipment. Depending on the workplace application, liaison may be required with engineering and maintenance specialists.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Carry out preparation and pre-treatments for cereal based products processing	1.1 Processes for preparing cereal based products are documented 1.2 Ingredients are selected and prepared for processing 1.3 Materials and equipment used to prepare cereal based products are selected and prepared
2. Produce a range of cereal-based product samples	2.1 Permissible additives/preservatives used in the production of cereal based product samples are selected according to specifications 2.2 Data requirements appropriate for food safety, quality and production standards are identified 2.3 Data collection points consistent with equipment capabilities and data requirements are established 2.4 Procedures to deal with non-conformance in relation to process and the final product are developed 2.5 Correct processing techniques and technologies are used to produce cereal based products
3. Review packaging and procedures for cereal-based products	3.1 Suitable packaging requirements for cereal based products are identified consistent with regulatory, client and enterprise requirements 3.2 Test packaging of cereal products is undertaken or supervised and checked for safety and conformance to client and enterprise requirements 3.3 Adjustments to packaging procedures and design are made where required
4. Assess the quality and safety and shelf life of a range of cereal-based products	4.1 A range of testing techniques are performed to assess the quality and safety of cereal based products 4.2 A range of testing techniques are performed to determine the shelf life of cereal based products 4.3 All common hazards at critical control points (CCPs) for the production of products are identified and assessed
5. Review production processes	5.1 The CCPs and critical limits for product safety are reviewed 5.2 Operating procedures are reviewed for food safety and quality 5.3 The production plan is reviewed for processing of food products 5.4 Environmental impacts and associated costs are reviewed for processing of food products

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills include:

Ability to:

- select ingredients and prepare equipment for processing
- construct a process flow chart for a selected cereal product
- apply production equipment and processes
- manufacture cereal product using documented procedures
- conduct sensory evaluation and product testing
- collate and analyse the results of testing
- review production processes, HACCP-based food safety plans and product quality
- assess the environmental impacts for the production of a cereal-based product.

Required knowledge includes:

Knowledge of:

- the different varieties of cereal grains
- the processing techniques and technologies used to produce various cereal products
- the major constituents of a cereal grain
- the use of each constituent of a cereal grain
- the milling process generally used to produce flour
- gluten, and its role in a range of wheat flour based products
- bread, biscuit, cake and pastry production techniques
- the manufacturing processes used to produce pasta and noodle products
- the manufacturing processes used to produce breakfast cereal products.

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to produce samples of cereal-based products, and to provide information and data for reviewing the production system
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Critical aspects of assessment must include evidence of the ability to produce a range of cereal-based products, to assess their quality based on product testing, and to review the production process used for food safety and quality and environmental impact.
Context of and specific resources for assessment	Assessment of performance requirements in this unit should be undertaken within the context of food technology. Competency is demonstrated by performance of all stated criteria, including the critical aspects and knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statements applicable to the workplace environment. Assessment must occur in a real or simulated workplace where the assessee has access to: • Production process and related equipment, manufacturers' advice and operating procedures • Methods and related software systems as required for collecting data and calculating yields, efficiencies and material variances appropriate to production environment • Tests used to report relevant product/process information and recorded results
Method of assessment	Evidence may include product samples, third party report, portfolio, work documentation produced by the candidate, and written and/or oral questioning to assess knowledge and understanding of the performance criteria and critical aspects for assessment. Assessment should also include wherever possible observation of the candidate oversighting or conducting a range of beverage manufacturing processes and tests.

EVIDENCE GUIDE

Guidance information for assessment

Evidence should be gathered over a period of time in a range of actual or simulated environments.
 Recommended technical information:
 The ICC Handbook of Cereals, Flour, Dough and Product Testing Methods and Applications
 edited by Stanley P. Cauvain and Linda S. Young (2009)

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Occupational health and safety requirements

- OHS legislation, regulations and Codes of practice
- Safety Data Sheets (SDSs) for hazardous substances
- Enterprise specific OHS requirements.

Regulations

- Australian and international standards including:
- professional association regulations
- industry guidelines and codes of practice
- industry regulations
- Australian and New Zealand Food Standards Code
- ISO Standards
- Codex Alimentarius
- export requirements
- State food safety regulations
- International, Australian and State environmental protocols and regulations regarding effluent

Materials, equipment and systems

Manufacturing processes may include but are not limited to:

- baking
- extrusion
- mixing
- blending
- grinding

RANGE STATEMENT	
	• rolling • steaming • pressing • drying
Cereal products	Include pastas, breakfast cereals and bread products.
Testing techniques	Include sensory (organoleptic) testing, microbiological testing, tests for starches, sugars and carbohydrates, moisture testing.

Unit Sector(s)

Unit sector	Technical
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