



Australian Government

Department of Education, Employment and Workplace Relations

FDFST5027A Implement and review the production of milk and related products by the membrane system

Release: 2

FDFST5027A Implement and review the production of milk and related products by the membrane system

Modification History

April 2012: Minor typographical corrections.

Unit Descriptor

Unit descriptor	This unit covers the skills and knowledge required to implement and review standards and procedures for milk and related products manufactured by the membrane system.
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Application of the Unit

Application of the unit	<p>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 in food production in the dairy processing sector.</p> <p>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.</p>
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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. Monitor the manufacturing of milk and related products d by the membrane system, to meet quality standards	<p>1.1 Appropriate production systems are selected and the preferred sequence of activity to prepare the system for operation is determined</p> <p>1.2 Resource requirements for the preparations and production of milk and related products manufactured by the membrane system are established</p> <p>1.3 A production schedule to ensure all resources and requirements are available and meet company requirements is interpreted or developed</p> <p>1.4 The production system is set to the required operating specifications before and during production</p> <p>1.5 Data requirements appropriate for food safety, quality and production standards are documented</p> <p>1.6 Data collection points consistent with equipment capabilities and data requirements are established</p> <p>1.7 Procedures to deal with non-conformance in relation to process and the final product are applied or developed</p> <p>1.8 Process controls for the production of milk and related products manufactured by the membrane system are monitored</p>
2. Diagnose, rectify and/or report problems arising from the manufacturing of milk and related products by the membrane system	<p>2.1 Methods used to identify defects are determined</p> <p>2.2 Systems used to identify defects in the production process are implemented</p> <p>2.3 A system to identify defects in the preparation and production of milk and related products manufactured by the membrane system is implemented, and adjustments applied to process/equipment as identified</p> <p>2.4 Problems are reported to designated person according to company policies and procedures</p>
3. Review production processes	<p>3.1 The critical control points (CCPs) and critical limits for product safety are reviewed</p> <p>3.2 A sampling plan for products manufactured by the membrane system is developed and implemented</p> <p>3.3 Sensory analysis of products manufactured by the membrane system is conducted and analysed</p> <p>3.4 Food tests are undertaken</p> <p>3.5 Operating procedures are reviewed for the food safety and quality of products manufactured by the membrane system</p> <p>3.6 Safe work systems for processing of products manufactured by the membrane system are reviewed</p> <p>3.7 Environmental impacts and energy efficiencies are reviewed for processing of products manufactured by the membrane system</p>

Required Skills and Knowledge

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

Required skills include:

Ability to:

- determine the purpose of each process, and the principles of operation of equipment and accessories, for the preparation and production of each milk and related products manufactured by the membrane system
- determine the appropriate production system for the preparation and production of each milk and related products manufactured by the membrane system
- estimate the resource requirements for the preparation and production of milk and related products manufactured by the membrane system
- diagnose, rectify and/or report problems arising from the preparation and production of milk and related products manufactured by the membrane system
- implement adjustments to process/equipment in response to system review
- report problems to designated person according to company policies and procedures
- overview the implementation of the HACCP plan
- carry out product sampling and testing according to the HACCP plan and operational procedures
- provide relevant information to work colleagues to facilitate understanding of, and compliance with, the Australian Standards and associated regulations
- take action to improve own work practice as a result of self-evaluation, feedback from others, or changed work practices, regulations or technology
- use technology to access information, prepare reports, and to access and prepare relevant data
- implement workplace OH&S procedures.

Required knowledge includes:

Knowledge of:

- different types of milk and related products manufactured by the membrane system
- statutory compositional requirements for the different types of milk and related products manufactured by the membrane system
- specific domestic and export market requirements for milk and related products manufactured by the membrane system
- production systems used for the preparation and production of milk and related products manufactured by the membrane system
- operation of equipment and accessories used in the preparation and manufacturing processes of milk and related products manufactured by the membrane system
- output of each of the processes used in the preparation and production of milk and related products manufactured by the membrane system
- critical factors in the preparation and production of milk and related products manufactured by the membrane system

- potential problems and product defects arising from the preparation and production of milk and related products manufactured by the membrane system
- formulation of milk and related products manufactured by the membrane system
- role of major ingredients found in milk and related products manufactured by the membrane system
- testing procedures for raw materials through to manufactured product
- packaging procedures
- quality and continuous improvement processes
- sensory analysis techniques
- chemical and physical hazards which may affect milk and related products manufactured by the membrane system
- procedures for milk product storage, handling and preparation
- safe work procedures
- sanitation and hygiene procedures
- HACCP principles and critical limits in a HACCP program
- identification of Critical Control Points (CCPs) and critical limits
- water and energy use and recycling in processing
- regulatory requirements associated with milk and related products manufactured by the membrane system
- environmental impacts of the membrane system
- safe systems of work

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

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Critical aspects of assessment must include evidence of the ability to implement processing of milk and related products manufactured by the membrane system including: implementing process control procedures and data collection; diagnosing and reporting problems for manufacturing; carrying out sensory evaluation and product testing; and reviewing the production system 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
- Tests used to report relevant product/process information and recorded results

Method of assessment

The following assessment methods are suggested:

- Written and/or oral questioning to assess knowledge and understanding
- Observation of candidate conducting a range of processes and tests
- Analysis of samples produced by the candidate
- A report on review of the production system

Guidance information for assessment

Evidence should be gathered over a period of time in a range of actual or simulated environments.

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.

Legislation	<p>Legislative requirements are typically reflected in procedures and specifications. Legislation relevant to this industry includes the Food Standards Code including labelling, weights and measures legislation; and legislation covering food safety, environmental management, occupational health and safety, anti-discrimination and equal opportunity.</p> <p>International, Australian and State EPA protocols and regulations regarding effluent.</p>
Policies and procedures	<p>Work is carried out according to company procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements.</p>
OHS requirements	<ul style="list-style-type: none"> • legislation, regulations, Codes of practice • safety data sheets (SDSs) <p>enterprise and process specific occupational health and safety requirements</p>
Materials, equipment and systems	<p>Equipment may include centrifuges, heat exchangers, homogenisers, mixing vats, sanitary pumps, conveying belts, fillers and aseptic fillers, freezers and associated tanks, pipe work and valves.</p> <p>Membrane modules may be flat sheet (plate), spirally wound, hollow fibre, tubular and may have a symmetrical, asymmetric or composite asymmetric structure. Related equipment typically includes pipe work, valves and pumps, refrigeration equipment.</p>
Milk and related products	<p>Includes standardised milk, whole fresh milk, recombined milk, vitamised milk, irradiated milk, mineralised milk, reconstituted or rehydrated milk, skimmed milk, heat treated or UHT milk, flavoured milks</p>

Unit Sector(s)

Unit sector	Technical
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