



Australian Government

Department of Education, Employment and Workplace Relations

FDFST4022A Implement and review the preparation of milk for processing

Release: 2

FDFST4022A Implement and review the preparation of milk for processing

Modification History

April 2012: Minor typographical corrections.

Unit Descriptor

This unit covers the skills and knowledge required to implement and review the standards and procedures for receiving and preparing milk for product manufacture.

Application of the Unit

This unit applies to food science and technology personnel who have roles in product design, quality assurance and food safety, or production management. The unit typically applies to staff with responsibility for maintaining product safety, quality and efficiency in food production in the dairy processing sector. 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.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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. Receive fresh milk and blend using standard industry data	1.1 Receival and testing procedures for milk from farm are applied 1.2 A safe working environment is provided for milk receival and testing 1.3 Received milk is tested and data is recorded and stored 1.4 Received milk is stored under correct conditions and adjusted or blended based on test data
2. Implement procedures for separation, homogenisation and pasteurisation of received milk in preparation for further processing	2.1 The preferred sequence of activity to prepare the system for operation is implemented 2.2 A production schedule is implemented to ensure all resources and requirements are available and meet company requirements 2.3 Data collection points consistent with equipment capabilities and data requirements are documented 2.4 Procedures to deal with non-conformance in relation to process and the final product are implemented 2.5 Production system is set to operating specifications before and during preparation and testing of received milk 2.6 Process control system for the preparation of milk for further processing is implemented
3. Diagnose, rectify and/or report problems arising from the preparation of milk for manufacture	3.1 Product tests are interpreted according to enterprise procedures 3.2 System used to identify defects and abnormalities in delivered milk is implemented and monitored 3.3 Adjustments to process/equipment as identified are implemented. 3.4 Problems are recorded and reported according to company policies and procedures
4. Review production processes for preparing milk for further processing	4.1 The critical control points (CCPs) and critical limits for product safety are reviewed 4.2 A sampling plan is developed and implemented 4.3 Food tests are undertaken to check product composition and compliance with further manufacturing requirements 4.4 Operating procedures are reviewed for food safety and quality 4.5 Safe work systems for processing are reviewed 4.6 Environmental impacts and energy efficiencies are reviewed for preparation of milk for processing

Required Skills and Knowledge

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

Required skills include:

Ability to:

- implement handling and storage procedures used to prevent spoilage of raw milk
- assess the impact of processing on milk
- establish CCPs and critical limits for each step in production of milk for processing
- carry out milk testing
- monitor production of milk for further processing
- 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:

- the various components of milk
- the hazards associated with raw milk
- the various spoilage organisms associated with milk
- compositional requirements for a range of milk based products
- the testing and processing stages in preparing milk for further processing
- the risks to milk product quality from incorrect preparation and handling of fresh milk
- output of each of the processes used in the preparation of milk for further processing
- compositional requirements for milk prepared for further processing for a range of processed milk products
- principles of operation of equipment and accessories used in the preparation of milk for further processing
- critical factors in the testing and preparation of received milk for further processing into dairy products
- processes used in the preparation and manufacture of non-fermented dairy products
- processes used to prepare milk for further processing
- resource requirements for the preparation of milk for further processing
- potential product defects and their causes which may arise in the preparation of milk for further processing

- milk sampling and testing
- data requirements appropriate for food safety, quality and production standards
- manufacturing processes, including materials and equipment, involved in preparing delivered milk for further processing
- manufacturing processes used to produce specialised dairy products such as whey powders, caseinates, industrial butters and infant formulas
- milk handling and its impact on properties for further processing
- chemical and physical hazards which may affect milk
- procedures for milk storage, handling and preparation
- safe work procedures
- sanitation and hygiene procedures
- HACCP principles and critical limits in a HACCP program
- identification of CCPs and critical limits
- water and energy use and recycling in processing
- regulatory requirements associated with the preparation of milk for processing
- environmental impacts of the food processing operation

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 implement and review the processes associated with receiving and preparing milk for product manufacture. Milk is not homogenised in the manufacture of some cheeses and need not be included in evidence for assessment where this is the case.
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 and review the processes associated with receiving and preparing milk for product manufacture including: implementing process control procedures and data collection to prepare milk for further processing; carrying out food testing of raw and processed milk; diagnosing and reporting problems for manufacturing of dairy product; 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 • 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	The following assessment methods are suggested: • Observation of candidate conducting a range of processes and tests • Written and/or oral questioning to assess knowledge

	and understanding • A report on a review of the milk receival system
Guidance information for assessment	Evidence should be gathered over a period of time in a range of actual or simulated environments.

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	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.
Policies and procedures	Work is carried out according to company procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements.
OHS requirements	• legislation, regulations, Codes of practice • safety data sheets (SDSs) • enterprise and process specific occupational health and safety requirements.
Manufactured dairy products	These include condensed milk, cream and butter, milk powder, butter, cheese, dairy blends, yoghurt, anhydrous milk fat and milk products with amendments or additives.
Materials used to manufacture milk products	Dairy products processing equipment to prepare milk for further processing may include fermenting vessels, butter and cream centrifuge, heat exchangers, homogenisers, aseptic fillers, mix tanks, autoclaves, vacuum evaporation and spray drying equipment.

Unit Sector(s)

Technical.