

PROCESS CONCENTRATED AND DRIED MILK PRODUCTS

ISCED UNIT CODE: 0721 551 17A

TVET CDACC UNIT CODE: DA/OS/PM/CR/01/6/MA

UNIT DESCRIPTION

This unit specifies the competencies required by a Dairy Plant Technologist level 6 to process Concentrated and Dried Milk Products. It involves production of condensed, evaporated and dried milk products.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace functions	These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicized terms are elaborated in the range)</i>
1. Produce Condensed Milk	1.1 Raw milk sample is collected as per KS ISO 707:2008 Sampling of milk and milk products 1.2 <i>Raw milk quality analysis</i> is carried out in accordance with KS ISO/TC 34/SC 5 milk and milk products 1.3 <i>Condensed Milk processing materials and equipment</i> are assembled based on work requirement. 1.4 Raw milk is standardized to the required fat content in accordance with work instructions. 1.5 <i>Condensed milk</i> is processed based on KS EAS 87:2019 1.6 Condensed milk products are packaged as per KS EAS 87:2019 1.7 Condensed milk is stored in accordance KS EAS 87:2019 1.8 Condensed milk sample is collected as per KS ISO 707:2008 Sampling of milk and milk products 1.9 Condensed milk quality is analyzed in accordance with KS ISO/TC 34/SC 5 milk and milk products

	<p>1.10 Condensed milk processing equipment are cleaned according Kenya Standards (KS)1552- 2016 Code of Hygienic practice for milk and milk products</p> <p>1.11 Dairy waste disposed as per KS 1552- 2016 code of Hygienic practice for milk and milk products</p> <p>1.12 Condensed milk products processing is records are updated as per work instruction manual</p>
2. Produce Evaporated Milk	<p>2.1 Raw milk sample is collected as per KS ISO 707:2008 Sampling of milk and milk products</p> <p>2.2 <i>Raw milk quality analysis</i> is carried out in accordance with KS ISO/TC 34/SC 5 milk and milk products</p> <p>2.3 <i>Evaporated Milk processing materials and equipment</i> are assembled based on work requirement.</p> <p>2.4 Raw milk is standardized to the required fat content in accordance with work instructions.</p> <p>2.5 Evaporated milk is processed based on KS 2510:2019</p> <p>2.6 Evaporated milk is packaged as per KS 2510:2019</p> <p>2.7 Evaporated milk is stored in accordance KS 2510:2019</p> <p>2.8 Evaporated milk sample is collected as per KS ISO 707:2008 Sampling of milk and milk products</p> <p>2.9 Evaporated milk quality is analyzed in accordance with KS ISO/TC 34/SC 5 milk and milk products</p> <p>2.10 Evaporated milk processing equipment are cleaned according Kenya Standards (KS)1552- 2016 Code of Hygienic practice for milk and milk products</p> <p>2.11 Dairy waste disposed as per KS 1552- 2016 code of Hygienic practice for milk and milk products</p> <p>2.12 Evaporated milk products processing is records are updated as per work instruction manual</p>
3. Produce Dried Milk product	<p>3.1 Raw milk sample is collected as per KS ISO 707:2008 Sampling of milk and milk products</p>

	<p>3.2 <i>Raw milk quality analysis</i> is carried out in accordance with KS ISO/TC 34/SC 5 milk and milk products</p> <p>3.3 <i>Dried Milk product processing materials and equipment</i> are assembled based on work requirement.</p> <p>3.4 Raw milk is standardized to the required fat content in accordance with work instructions.</p> <p>3.5 Dried Milk product is processed based on KS EAS 49:2023</p> <p>3.6 Dried Milk product is packaged as per KS EAS 49:2023</p> <p>3.7 Dried Milk product is stored in accordance KS EAS 49:2023</p> <p>3.8 Dried Milk product sample is collected as per KS ISO 707:2008 Sampling of milk and milk products</p> <p>3.9 Dried Milk product quality is analyzed in accordance with KS ISO/TC 34/SC 5 milk and milk products</p> <p>3.10 Dried Milk product processing equipment are cleaned according Kenya Standards (KS)1552- 2016 Code of Hygienic practice for milk and milk products</p> <p>3.11 Dairy waste disposed as per KS 1552- 2016 code of Hygienic practice for milk and milk products</p> <p>3.12 Dried Milk product products processing is records are updated as per work instruction manual</p>
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RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
1. Raw milk analysis may include but are not limited to:	<ul style="list-style-type: none"> • Organoleptic test • Compositional test • Resazurin test • Alcohol test • Lactometer test • Antibiotic test

	<ul style="list-style-type: none"> • pH test
2. Condensed Milk processing materials and equipment may include but are not limited to:	<p><u>Material</u></p> <ul style="list-style-type: none"> • Milk • Sugar <p><u>Equipment</u></p> <ul style="list-style-type: none"> • Stainless steel vessel • Evaporator • Heat source • Mixer • Condenser • Packaging equipment
3. Evaporated Milk processing materials and equipment may include but are not limited to:	<p><u>Material</u></p> <ul style="list-style-type: none"> • Milk <p><u>Equipment</u></p> <ul style="list-style-type: none"> • Evaporator • Homogenizer • Retort • Canning line • Packaging equipment
4. Dried Milk product processing materials and equipment may include but are not limited to:	<p><u>Material</u></p> <ul style="list-style-type: none"> • Milk <p><u>Equipment</u></p> <ul style="list-style-type: none"> • Pasteuriser • Cream separator • Evaporator • Homogenizer • Drier

REQUIRED KNOWLEDGE AND SKILLS

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

The individual needs to demonstrate knowledge of:

Required knowledge

The individual needs to demonstrate knowledge of:

- Physical and chemical properties of milk and milk products
- Milk concentration techniques
- Milk drying techniques
- Milk sampling techniques
- Milk quality testing techniques
- Milk preservation techniques
- Good manufacturing practices
- Code of hygiene
- Legal requirements
- Record keeping
- Dairy waste and management

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Required skills

The individual needs to demonstrate the following skills:

- Communication skills
- Problem solving
- Analytical skills
- Milk handling skills
- Food safety risk assessment

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Processed condensed milk based on KS EAS 87:2019 1.2 Packaged condensed milk products as per KS EAS 87:2019 1.3 Analyzed condensed milk quality in accordance with KS ISO/TC 34/SC 5 milk and milk products 1.4 Processed evaporated milk based on KS 2510:2019 1.5 Packaged evaporated milk as per KS 2510:2019 1.6 Analyzed evaporated milk quality in accordance with KS ISO/TC 34/SC 5 milk and milk products 1.7 Processed dried Milk product based on KS EAS 49:2023 1.8 Packed dried Milk product as per KS EAS 49:2023 1.9 Analysed Dried Milk product quality in accordance with KS ISO/TC 34/SC 5 milk and milk products
2. Resource implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Appropriately simulated environment where assessment can take place 2.2 Access to relevant work environment 2.3 Resources relevant to the proposed activities or tasks
3. Methods of assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Practical assessment 3.2 Oral questioning 3.3 Portfolio of evidence 3.4 Interviews 3.5 Third party report 3.6 Written tests
4. Context of assessment	<p>Competency may be assessed:</p> <ul style="list-style-type: none"> 4.1 Workplace 4.2 Simulated work environment
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector and workplace job role is recommended.</p>