

2. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Access to relevant workplace where assessment can take place 2.2 Appropriately simulated environment where assessment can take place. 2.3 Resources relevant to the proposed activity or tasks.
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Observation 3.2 Oral questioning 3.3 Written test 3.4 Portfolio of Evidence 3.5 Interview 3.6 Third party report
4. Context of Assessment	<p>Competency may be assessed:</p> <ul style="list-style-type: none"> 4.1 On-the-job 4.2 In a simulated work environment
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

COMMON UNITS OF COMPETENCY

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APPLY DAIRY PRODUCTION PRINCIPLES

ISCED UNIT CODE: 0721 451 07A

TVET CDACC UNIT CODE: DA/OS/PM/CC/03/5/MA

UNIT DESCRIPTION

This unit specifies the competencies required by a Dairy Plant Technician level 5 to apply dairy production principles. It involves breeding dairy cattle, applying principles of animal nutrition, applying hygienic milk production practices and performing dairy practices

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. Breed dairy cattle	1.1 Dairy animal breeds are identified based on Livestock production manual (LPM) 1.2 Breeding management tools, equipment and materials are used in accordance with LPM 1.3 Dairy animal breeding is carried out based on LPM 1.4 Breeding records are prepared as per work procedures
2. Apply principles of animal nutrition	2.1 Dairy animal feeds are identified as per the nutritional requirements 2.2 Feed formulation tools, equipment and materials are used based on feed formulation manual 2.3 Components of animal feed rations are identified as per animal feeding standard 2.4 Dairy animal feed rations are formulated as per animal feeding standard 2.5 Dairy animal is fed as per animal feed requirement 2.6 Dairy animal feeds are conserved as per LPM 2.7 Dairy animal feed waste is managed according to environmental protection regulations
3. Apply hygienic milk production practices	3.1 Milking materials and equipment are assembled based on the milking technique selected 3.2 Milking dairy animal are assembled in accordance with the LPM 3.3 Udder is cleaned and pre-dipped according to LPM 3.4 Mastitis test is carried out based LPM 3.5 Milk let down is stimulated based on selected milking technique 3.6 Milking is carried out based on Essentials of Clean Milk Production Standard. 3.7 Udder quarters are disinfected as per the LPM 3.8 Milked dairy animal is released as per workplace procedures

	<p>3.9 Milk is sieved and weighed according to the workplace procedures</p> <p>3.10 Milk is stored and cooled in accordance with LPM</p> <p>3.11 Milk production record is maintained based on the workplace procedures</p> <p>3.12 Milking equipment are cleaned as per workplace procedures</p> <p>3.13 Milking parlour is cleaned as per workplace procedures</p> <p>3.14 Re-usable materials are stored as per manufactures instruction and workplace policy</p> <p>3.15 Waste is managed and disposed with due regard to environment protection regulations</p>
4. Perform dairy practices	<p>4.1 Dairy animal identification method is selected based on Good agricultural Practices (GAPs)</p> <p>4.2 Dairy animal is dehorned or disbudded based on GAPs</p> <p>4.3 Overgrown hooves are trimmed based on GAPs</p> <p>4.4 Culling is performed based on workplace policy</p> <p>4.5 Internal and external parasites are controlled based on LPM and GAPs</p> <p>4.6 Vaccination is performed as per workplace policy, manufacturer's instructions and LPM</p> <p>4.7 Dairy animal isolation and quarantine is carried out to control notifiable diseases based on GAPs</p> <p>4.8 Dairy animal is provided with clean water ad-libitum as per LPM</p>

RANGE

RANGE	VARIABLE
1. Dairy animal feeds may include but not limited to:	<ul style="list-style-type: none"> • Carbohydrates • Proteins • Vitamins • Minerals • Fats/ lipids • Water
2. Components of animal feed rations may include but not limited to:	<ul style="list-style-type: none"> • Energy Sources • Protein Sources • Fiber Sources • Vitamins and Minerals • Additives and Supplements
3. Dairy animal breeds method may include but not limited to:	<ul style="list-style-type: none"> • Cow • Goat • Camel

RANGE	VARIABLE
4. Milking materials and equipment may include but not limited to:	<ul style="list-style-type: none"> • Animal Restraint • Cleaning • Cups • Herd Test Buckets • Thermometer • Separator
5. Mastitis test may include but not limited to:	<ul style="list-style-type: none"> • CMT • Strip cup
6. Milking technique may include but not limited to:	<ul style="list-style-type: none"> • Hand milking • Milking machine
7. Dairy animal identification method may include but not limited to:	<ul style="list-style-type: none"> • Ear tagging • Ear notching • Branding • Neck chains • Straps with numbers • Ear tattooing

REQUIRED SKILLS AND KNOWLEDGE

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

Required knowledge

The individual needs to demonstrate knowledge of:

- Principles of animal production
- Animal selection and breeding
- Dairy animal nutrition
- Parasite and disease management in cattle
- Dairy animal routine management practices
- Dairy animal production records

Required Skills

The individual needs to demonstrate the following skills:

- Communication
- Analytical
- Evaluation
- Management
- Problem solving
- Time management
- Data collection
- Numeracy
- Observation
- Negotiation
- Digital literacy
- Equipment calibration

EVIDENCE GUIDE

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

1. Critical aspects of competency	Assessment requires evidence that the candidate <ul style="list-style-type: none">1.1 Carried out dairy animal breeding based on LPM1.2 Fed dairy animal as per animal feed requirement1.3 Conserved dairy animal feeds as per Livestock production manual (LPM)1.4 Carried out dairy animal milking based on Essentials of Clean Milk Production Standard1.5 Cleaned milking equipment as per workplace procedures1.6 Cleaned milking parlour as per workplace procedures1.7 Dehorned or disbudded dairy animal based on GAPs.1.8 Trimmed overgrown hooves based on GAPs1.9 Performed culling based on workplace policy1.10 Controlled internal and external parasites based on LPM and GAPs1.11 Performed vaccination as per workplace policy, manufacturer's instructions and LPM
2. Resource	The following resources should be provided:

implication	<p>2.1 Access to relevant workplace where assessment can take place</p> <p>2.2 Appropriately simulated environment where assessment can take place</p> <p>2.3 Materials relevant to the proposed assessment activity or tasks</p>
3. Method of assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Written tests</p> <p>3.2 Questionnaires</p> <p>3.3 Oral questioning</p> <p>3.4 Projects</p> <p>3.5 Observation</p>
4. Context of assessment	<p>4.1 Competency elements must be assessed in a safe working environment</p> <p>4.2 Assessment may be conducted in a workplace or simulated environment</p>
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

APPLY FUNDAMENTALS OF DAIRY TECHNOLOGY

ISCED UNIT CODE: 0721 451 05A

TVET CDACC UNIT CODE: DA/OS/PM/CC/01/5/MA

UNIT DESCRIPTION:

This unit specifies the competencies required by Dairy Processing Attendant level 4 to apply fundamentals of dairy technology. It involves application milk composition and dairy microbiology knowledge and dairy equipment operations principles.

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. Apply milk composition knowledge	1.1 Milk constituents are tested as per dairy processing manual 1.2 Milk physical properties are applied as per work instructional manual 1.3 Milk chemical properties are applied as per work instruction manual
2. Apply dairy microbiology knowledge	2.1 Microbiological principles are applied in dairy processing as per Kenya Standard (KS) 1552: 2016 Code of hygienic practice for milk and milk products. 2.2 Microbiology test apparatus are used as per good laboratory practices. 2.3 Dairy microbial specimens are collected as per good laboratory practices. 2.4 Microbial findings are documented as per work instruction manual. 2.5 Microbial wastes are managed as per KS 1552: 2016 Code of hygienic practice for milk and milk products. 2.6 Microbiology apparatus is cleaned and maintained as per good laboratory practices.
2. Apply dairy equipment operational principles	3.1 Dairy equipment and machinery are assembled as per work requirement 3.2 Dairy equipment and machinery are operated as per equipment and machinery operation manual 3.16 Dairy utilities are utilized as per work requirement.