

## APPLY DAIRY PRODUCTION PRINCIPLES

ISCED UNIT CODE: 0811 551 08A

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

### UNIT DESCRIPTION

This unit specifies the competencies required by a Dairy Plant Technologist level 6 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

ELEMENTS AND PERFORMANCE CRITERIA	ELEMENTS AND PERFORMANCE CRITERIA
1. Apply breeding principles	1.1 <b>Dairy animal breeds</b> 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 dairy animal structures principles	2.1 Tools, equipment and materials are assembled as per work requirements 2.2 Site of <b>dairy animal structures</b> is selected based on LPM 2.3 Dairy animal structures are designed according to Livestock Production Manual (LPM). 2.4 Dairy animal structures are constructed based on livestock production manual 2.5 Dairy animal structures are maintained as per work procedures 2.6 Maintenance records are kept as per work requirements 2.7 Waste is managed according to environmental protection regulations

3. Apply animal nutrition principles	<p>3.1 <b>Dairy animal feeds</b> are identified as per the nutritional requirements</p> <p>3.2 Feed formulation tools, equipment and materials are used based on feed formulation manual</p> <p>3.3 <b>Components of animal feed</b> rations are identified as per animal feeding standard</p> <p>3.4 Dairy animal feed rations are formulated as per animal feeding standard</p> <p>3.5 Dairy animal is fed as per animal feed requirement</p> <p>3.6 Dairy animal feeds are conserved as per Livestock production manual (LPM)</p> <p>3.7 Dairy animal feed waste is managed according to environmental protection regulations</p>
4. Apply hygienic milk production practices	<p>4.1 <b>Milking materials and equipment</b> are assembled based on the milking technique selected</p> <p>4.2 Milking dairy animal are assembled in accordance with the LPM</p> <p>4.3 Udder is cleaned and pre-dipped according to LPM</p> <p>4.4 <b>Mastitis test</b> is carried out based LPM</p> <p>4.5 Milk let down is stimulated based on selected <b>milking technique</b></p> <p>4.6 Milking is carried out based on Essentials of Clean Milk Production Standard.</p> <p>4.7 Udder quarters are disinfected as per the LPM</p> <p>4.8 Milked dairy animal is released as per work procedures</p> <p>4.9 Milk is sieved and weighed according to the work procedures</p> <p>4.10 Milk is stored and cooled in accordance with LPM</p> <p>4.11 Milk production record is maintained based on the work procedures</p> <p>4.12 Milking equipment are cleaned as per work procedures</p> <p>4.13 Milking parlour is cleaned as per work procedures</p> <p>4.14 Re-usable materials are stored as per manufacturers instruction and work policy</p> <p>4.15 Waste is managed and disposed with due regard to environment protection regulations</p>

5. Perform dairy practices	<p>5.1 Dairy animal <b>identification method</b> is selected based on Good Agricultural Practices (GAPs)</p> <p>5.2 Dairy animal is dehorned or disbudded based on GAPs</p> <p>5.3 Overgrown hooves are trimmed based on GAPs</p> <p>5.4 Culling is performed based on work policy</p> <p>5.5 Internal and external parasites are controlled based on LPM and GAPs</p> <p>5.6 Vaccination is performed as per workplace policy, manufacturer's instructions and LPM</p> <p>5.7 Dairy animal isolation and quarantine is carried out to control notifiable diseases based on GAPs</p> <p>5.8 Dairy animal is provided with clean water ad-libitum as per LPM</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

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

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

## 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.

6. Critical aspects of competency	<p>Assessment requires evidence that the candidate</p> <p>1.8 Carried out dairy animal breeding is based on LPM</p> <p>1.9 Fed dairy animal as per animal feed requirement</p> <p>1.10 Conserved dairy animal feeds as per Livestock production manual (LPM)</p> <p>1.11 Carried out dairy animal milking based on Essentials of Clean Milk Production Standard</p> <p>1.12 Cleaned milking equipment as per workplace procedures</p> <p>1.13 Cleaned milking parlour as per workplace procedures</p> <p>1.14 Dehorned or disbudded dairy animal based on GAPs.</p> <p>1.15 Trimmed overgrown hooves based on GAPs</p> <p>1.16 Performed culling based on workplace policy</p>
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	<p>1.17 Controlled internal and external parasites based on LPM and GAPs</p> <p>1.18 Performed vaccination as per workplace policy, manufacturer's instructions and LPM</p>
7. Resource Implication	<p>The following resources should be provided:</p> <p>7.1 Access to relevant workplace where assessment can take place</p> <p>7.2 Appropriately simulated environment where assessment can take place</p> <p>7.3 Materials relevant to the proposed assessment activity or tasks</p>
8. Method of Assessment	<p>Competency in this unit may be assessed through:</p> <p>8.1 Practical assessment</p> <p>8.2 Questionnaires</p> <p>8.3 Oral questioning</p> <p>8.4 Projects</p> <p>8.5 Written tests</p>
9. Context of assessment	<p>Competency may be assessed:</p> <p>9.1 Workplace</p> <p>9.2 Simulated work environment</p>
10. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>