

## PRODUCE LIVESTOCK FEEDS

UNIT CODE: 0811 551 15A

TVET CDACC UNIT CODE: AGR/OS/AP/CR/01/4/MA

### UNIT DESCRIPTION

This unit specifies competencies required to produce livestock feeds. It involves producing livestock forage, conserving livestock forage, and formulating livestock feed rations.

### ELEMENTS AND PERFORMANCE CRITERIA

| ELEMENT   | PERFORMANCE CRITERIA   |
|---|--|
| These describe the key outcomes which make up workplace function. | These are assessable statements which specify the required level of performance for each of the elements.<br><b><i>Bold and italicized terms are elaborated in the Range.</i></b>  |
| 1. Produce livestock forage                                       | 1.1 <b><i>Tools and equipment</i></b> are assembled as per work requirements<br>1.2 <b><i>Propagation materials</i></b> are sourced as per <b><i>Agro-Ecological Zone (AEZ)</i></b><br>1.3 Land is prepared as per planting material requirements<br>1.4 Propagation materials are prepared according to <b><i>Good Agricultural Practices (GAP)</i></b><br>1.5 Propagation materials are established as per good agricultural practices<br>1.6 <b><i>Forages</i></b> are <b><i>managed</i></b> as per good agricultural practices<br>1.7 Forages are harvested as per maturity index and height |
| 2. Conserve livestock forage                                      | 2.1 Quality of harvested forages is assessed based livestock production manual<br>2.2 Forages are conserved into silage or hay as per LPM<br>2.3 Conserved forage is stored based on established storage requirements and conditions<br>2.4 Forage production records are generated and disseminated as per the workplace requirements<br>2.5 Waste is managed according to environmental protection regulations   |

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| 3. Formulate livestock rations                                    | <p>3.1 Feed formulation tools, equipment and materials are identified and assembled based on feed formulation manual and workplace requirements</p> <p>3.2 <b><i>Animal feeds ingredients</i></b> are identified as per animal feeding standard</p> <p>3.3 Animal feeds ingredient are sourced as per type of feed to be formulated and animal nutritional requirements</p> <p>3.4 Ingredient proportions are weighed as per feed formulation formula</p> <p>3.5 Livestock feed rations are formulated using <b><i>feed formulation methods</i></b> as per animal feeding standard</p> <p>3.6 Formulated feeds are packaged and labeled as per feed manufacturing guidelines</p> <p>3.7 Packaged feeds are stored as per livestock feed manufacturing guidelines</p> <p>5. Waste is managed according to environmental protection regulations</p> |

### **RANGE OF VARIABLES**

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

| <b>RANGE</b>   | <b>VARIABLE</b>   |
|--|---|
| 1. Tools and equipment may include but are not limited to: | <ul style="list-style-type: none"> <li>• Equipment</li> <li>• Grass cutters</li> <li>• Generator</li> <li>• Water pump with hose</li> <li>• Tractors (optional)</li> <li>• Draft animals</li> </ul> |

| RANGE   | VARIABLE  |
|---|---|
|   | <ul style="list-style-type: none"> <li>• Plow and harrow</li> <li>• Shovel</li> <li>• Hoe</li> <li>• Water sprinklers</li> <li>• Planter</li> <li>• Wheelborrow</li> <li>• Hole digger</li> <li>• Planting materials</li> <li>• Fertilizer (Organic and inorganic)</li> <li>• Pesticides</li> <li>• Root inoculants</li> <li>• Herbicides</li> <li>• Fencing materials</li> </ul> |
| 2. Propagation materials may include but are not limited to:  | <ul style="list-style-type: none"> <li>• Seeds, Seedlings</li> <li>• Cuttings, Splits and</li> <li>• Tubers for propagation</li> </ul>  |
| 3. Good Agricultural Practices (GAP) includes but not limited | <ul style="list-style-type: none"> <li>• Liming</li> <li>• Mulching</li> </ul>  |
| 4. Forages may include but not limited to;                    | <ul style="list-style-type: none"> <li>• Pastures</li> <li>• Fodder crops</li> </ul>  |
| 5. Animal feeds ingredients may include but not limited to;   | <ul style="list-style-type: none"> <li>• Feed additives , Bran</li> <li>• Mineral premixes</li> </ul>   |
| 6. Feed formulation methods may include but not limited to;   | <ul style="list-style-type: none"> <li>• Person square</li> <li>• Trial and error</li> <li>• Computer method</li> </ul>   |

## **REQUIRED SKILLS AND KNOWLEDGE**

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

### **Required Skills**

The individual needs to demonstrate the following skills:

- Communication skills
- Food safety risk assessment and communication
- Training skills
- Measuring skills
- Agronomic skills
- Communication skills
- Basic mechanical operations
- Maintenance of forage

### **Required knowledge**

The individual needs to demonstrate knowledge of:

- Agro ecological zoning
- Types of planting materials
- Primary and secondary cultivation
- Hazard Analysis Critical Control Point (HACCP) process
- Code of hygienic practice (s)
- Risk assessment
- Mycotoxins
- Water quality
- Safe use of pesticides and herbicides
- Code of practice for the animal feed industry
- Principles of forage establishment and management
  - Methods of planting
  - Weeds, pests and diseases control methods
  - Irrigation methods
- Forage harvesting and conservation methods
- Occupational safety and health Act

## **EVIDENCE GUIDE**

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

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|--|--|
| 1. Critical aspects of competency      | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Carried out food safety measures to produce forage</li> <li>1.2 Prepared planting land to a level suitable to the planting material</li> <li>1.3 Established forage suitable for the AE zone</li> <li>1.4 Managed and harvested forage according to guidelines in the livestock production manual</li> <li>1.5 Conserved and stored fodder using correct method and procedures</li> <li>1.6 Observed occupational safety and health measures in the working environment</li> <li>1.7 Observed laid down environmental protection measures at the work place</li> <li>1.8 Documented and maintained dairy forage production and food safety records</li> </ul> |
| 2. Resource implication                | <p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>2.1 Appropriately simulated environment where assessment can take place</li> <li>2.2 Access to relevant workplace assessment environment</li> <li>2.3 Resources relevant to the proposed assessment activity or tasks</li> </ul>   |
| 3. Method of assessment                | <p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> <li>3.1 Practical</li> <li>3.2 project</li> <li>3.3 Written tests</li> <li>3.4 Oral questioning</li> </ul>  |
| 4. Context of assessment               | <p>Competency elements must be assessed</p> <ul style="list-style-type: none"> <li>4.1 On the job</li> <li>4.2 In a simulated work environment</li> </ul>  |
| 5. Guidance information for assessment | <p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>  |