

**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARD**

**FOR**

**DAIRY FARM OPERATOR**

**KNQF LEVEL 4**

**ISCED OCCUPATIONAL STANDARD CODE: 0811 354A**

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# FOREWORD

The provision of quality education and training is fundamental to the Government’s overall strategy for social economic development. Quality education and training will contribute to achievement of Kenya’s development blueprint, Vision 2030 and sustainable development goals.

Reforms in the education sector are necessary for the achievement of Kenya Vision 2030 and meeting the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution of Kenya 2010 and this resulted to the formulation of the Policy Framework for Reforming Education and Training. A key feature of this policy is the radical change in the design and delivery of the TVET training. This policy document requires that training in TVET be competency based, curriculum development be industry led, certification be based on demonstration of competence and mode of delivery allows for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that these Occupational Standards were developed for the purpose of developing a competency-based curriculum for Dairy Farm Management Level 4. These Occupational Standards will also be the basis for assessment of an individual for competence certification.

It is my conviction that these Occupational Standards will play a great role towards development of competent human resource for the agriculture sector’s growth and sustainable development.

# PREFACE

Kenya Vision 2030 aims to transform the country into a newly industrializing, “middle-income country providing a high-quality life to all its citizens by the year 2030”. Kenya intends to create a globally competitive and adaptive human resource base to meet the requirements of a rapidly industrializing economy through life-long education and training. TVET has a responsibility of facilitating the process of inculcating knowledge, skills and attitudes necessary for catapulting the nation to a globally competitive country, hence the paradigm shift to embrace Competency Based Education and Training (CBET).

The Technical and Vocational Education and Training Act No. 29 of 2013 on Reforming Education and Training in Kenya, emphasized the need to reform curriculum development, assessment and certification. This called for a shift to CBET in order to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labour force.

TVET Curriculum Development, Assessment and Certification Council (TVET CDACC), in conjunction with Dairy Sector Skills Advisory Committee (SSAC), German International Cooperation and Ministry of Agriculture, Livestock and Fisheries have developed these Occupational Standards for Dairy Farm Manager. TVET CDACC in conjunction with Micro Enterprises Support Programme Trust (MESPT) have reviewed these Occupational Standards and incorporated Food Safety. These standards will be the basis for development of competency-based curriculum for Dairy Farm Management level 4.

The occupational standards are designed and organized with clear performance criteria for each element of a unit of competency. These standards also outline the required knowledge and skills as well as evidence guide.

I am grateful to the Council Members, Council Secretariat, Dairy SSAC, expert workers and all those who participated in the development and review of these Occupational Standards.

# ACKNOWLEDGMENT

These Occupational Standards were developed through combined effort of various stakeholders from private and public organizations. I am thankful to the management of these organizations for allowing their staff to participate in this course. I wish to acknowledge the invaluable contribution of industry players who provided inputs towards the development of these Standards.

I thank TVET Curriculum Development, Assessment and Certification Council (TVETCDACC) for providing guidance on the development of these Standards. My gratitude goes to Dairy Sector Skills Advisory Committee (SSAC) members for their contribution to the development of these Standards. I thank all the individuals and organizations who participated in the validation of these Standards.

My gratitude also goes to NEPAD Planning and Coordinating Agency (NPCA) of the Africa Union Commission and German Ministry of Economic Cooperation and Development (BMZ) through its implementing agency German International Cooperation (GIZ) GmbH which enabled the development of these Standards through the CAADP ATVET project.

I also appreciate the office of the National Coordinator of GIZ CAADP ATVET Project which was instrumental in the cooperation between the project team, Ministry of Agriculture, Livestock and Fisheries (MoALF) and Ministry of Education.

Much gratitude goes to Micro Enterprises Support Program Trust (MESPT) who initiated the review process and the incorporation of Food Safety in the Occupational Standards. I acknowledge the Danish International Development Agency (DANIDA) and the European Union (EU) who sponsored the review process.

I acknowledge all other institutions which in one way or another contributed to the development of these Standards.

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# ABBREVIATIONS AND ACRONYMS

CAADP Comprehensive Africa Agricultural Development Programme

CDACC Curriculum Development, Assessment and Certification Council

DANIDA Danish International Development Agency

EMCA Environment Management Coordination Act

GAP Good Agricultural Practices

GIZ German International Cooperation

HACCP Hazard Analysis Critical Control Points

ICT Information Communication Technology

LPM Livestock Production Manual

MESPT Micro Enterprises Support Programme Trust

OSH Occupation Safety and Health

OSHA Occupation Safety and Health Act

OSHS Occupational Safety and Health Standards

PPE Personal Protective Equipment

SSAC Sector Skills Advisory Committee

# KEY TO UNIT CODE

Sector / Industry

Sub Sector

Occupational Area

Version Control

Unit of Competence Number

ISCED level, Programme Orientation and Level of Completion

xx

x

xxx

x

x

x

# OVERVIEW

Dairy Farm Management level 4 qualification consists of competencies that an individual must possess to manage dairy farm. It involves developing dairy farm structures, producing dairy forage, breeding dairy animals, formulating dairy feed, feeding dairy animals, milking dairy animals, rearing dairy young stock and maintaining dairy herd health.

The units of competency comprising Dairy Farm Management level 4 qualification include the following core units:

**CORE COMPETENCIES**

|  |  |  |
| --- | --- | --- |
| **UNIT CODE** | | **UNIT NAME** |
| 0811 341 01A | | Produce Dairy Forage |
| 0811 341 02A | | Feed Dairy Animals |
| 0811 341 03A | | Milk Dairy Animals |
| 0811 341 04A | | Rear Dairy Young Stock |
| 0732 341 05A | Develop Dairy Farm Structures | |
| 0811 341 06A | Breed Dairy Animals | |
| 0811 341 07A | Formulate Dairy Feed | |
| 0841 341 08A | Maintain Dairy Herd Health | |

## PRODUCE DAIRY FORAGE

**UNIT CODE: 0811 341 01A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to produce dairy forage. It involves preparing to produce dairy forage, producing dairy forage, evaluating dairy forage production and completing dairy forage production.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to produce dairy forage | * 1. PPEs used in forage production are identified   2. ***Forage*** planting land is prepared using correct ***farm tools, implements and machinery*** in accordance with the planting material   3. ***Safe planting materials*** are prepared according to Good Agricultural Practices (GAP) and work place policy.   4. Soil erosion is controlled based on topography, soil type and level of degradation.   5. Occupational safety and health procedures are adhered to according to work place procedures |
| 1. Produce dairy forage | 2.1 Forage planting materials are planted as per GAP and livestock production manual  2.2 Planted materials are gapped as per spacing requirements  2.3 Planted forage is fertilized and irrigated as per soil conditions and based on Livestock Production Manual, fertilizer standards, Fertilizer And Animal Foodstuffs Act (CAP 345) and guidelines for treated waste water used for irrigation.  2.4 Forage irrigation is carried out as per work requirement |
| 1. Evaluate dairy forage production | 3.1 Quality and safety of forage is checked based on Livestock Production Manual  3.2 Quantity of forage produced is checked based on livestock production manual and farm production projections  3.3 Errors are detected, reported and rectified based on workplace policy |
| 1. Complete dairy forage production | 4.1 Dairy forage is conserved as per forage type and work instructions based on the code of practice for the animal feed industry and Livestock Production Manual.  4.2 Waste is disposed with due regard to environment protection regulations |

**RANGE**

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

|  |  |  |
| --- | --- | --- |
| **Variable** | **Range** | |
| 1. Forage may include but not limited to: | * Pastures – Kikuyu grass, Rhodes, Star grass, Nandi Setaria, * Fodder crops – Maize, Lucerne, Napier, Desmodium, Vetch, multi-purpose trees | |
| 1. Farm tools may include but not limited to: | * Hoe * Fork * Slasher * Sickle * Rake | |
| 1. Farm implements may include but not limited to: | * Trailer * Plough Mower * Tedder * Rake * Baler * Forage harvester * Harrow * Tiller * Planter * Sprayer | |
| 1. Farm machinery may include but not limited to: | * Tractor * Lorry * Pickup | |
| 1. Safe planting materials may include but not limited to | Certified, clean, disease free   * Seeds * Seedlings * Cuttings * Splits and * Tubers for propagation | |
| 1. Environment protection regulations may include but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 |  |

**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:

* Measuring skills
* Trouble shooting
* Agronomic skills
* Communication skills

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Types of planting materials
* Primary and secondary cultivation
* Soil erosion control methods
* Soil sampling procedures
* Practices of forage establishment and management
  + Methods of planting
  + Weeds, pests and diseases control methods
  + Irrigation methods
* Fertilizer application
* Hazard Analysis Critical Control Point (HACCP) process
* Code of hygienic practice (s)
* Forage harvesting and conservation methods
* Occupational safety and health procedures

**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:   1. Applied food safety measures to produce dairy forage 2. Prepared planting land to a level suitable to the planting material 3. Managed and harvested forage according to guidelines in the livestock production manual and the code of practice for the animal feed industry 4. Conserved and stored fodder using correct method and procedures and the code of practice for the animal feed industry 5. Adhered to occupational safety and health procedures as per OS&H regulations and farm procedures 6. Observed laid down environmental protection measures at the workplace 7. Documented dairy forage production and food safety records |
| 1. Resource Implications | The following resources should be provided:   1. Appropriately simulated environment where assessment can take place 2. Access to relevant workplace assessment environment 3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Oral questioning 3. Third party report 4. Written test 5. Portfolio of Evidence 6. Interview |
| 1. Context of Assessment | Competency may be assessed  On-the-job  Off-the –job  During Industrial attachment. |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## FEED DAIRY ANIMALS

**UNIT CODE: 0811 341 02A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to feed dairy animals. It involves preparing to feed dairy animals, feeding dairy animals, evaluating dairy animal feeding and completing dairy animal feeding.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to feed dairy animals | * 1. ***Dairy animals*** are grouped based on their nutritional requirements age, sex and physiological status   2. ***Feed materials and supplies*** are assembled as per nutritional requirements and work place procedures based on the ***standards for dairy animal feeds***.   3. Occupational safety and health procedures are adhered to according to work place procedures   4. Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures |
| 1. Feed dairy animals | * 1. Feed ingredients are processed in accordance with the livestock production manual   2. Feeding system is applied based on the code of practice for the animal feed industry.   3. Rations for different dairy classes are mixed as per the nutritional requirements of the animal and in accordance with the code of practice for the animal feed industry and the dairy animal feed standards   4. Dairy animals are fed based on their nutritional requirements and in accordance with dairy feeding manual. |
| 1. Evaluate dairy animal feeding | * 1. Feed ingredients and rations are sampled based on sampling procedures   2. Feed intake is evaluated based on palatability, form and physiological status   3. Errors are detected, reported and rectified based on workplace policy and LPM |
| 1. Complete dairy animal feeding | * 1. Surplus materials and supplies not consumed are stored as per manufacturer’s instructions and the code of practice for the animal feed industry.   2. Recyclable and non-recyclable materials are disposed-off based on type with regard to environment protection regulations. |

**RANGE**

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

|  |  |  |
| --- | --- | --- |
| **Variable** | **Range** | |
| 1. Dairy animals may include but not limited to: | * Dairy cattle * Dairy goats * Camels | |
| 1. Feed materials and supplies may include but not limited to: | * Napier grass * Fodder maize * Lucerne * Salt lick | * Dairy meal * Hay * Silage * Feed additives |
| 1. Tools and Equipment may include but not limited to: | * Wheelbarrows * Shovels * Chaff cutters * Cleaning tools | * Hammer mills * Weighing scales * Weighing bands * Feed mixers |
| 1. Environment protection regulations may include but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 | |

**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:

* Weighing
* Troubleshooting
* Animal handling
* Feed mixing
* Feed mill and mixer operations and maintenance
* Data recording

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Types of feeding systems and strategies
* Basic nutritional requirements of diary animals
  + Growth
  + Body maintenance
  + Production
* Basic nutritional composition of feed materials
* Relevant standards and regulations for dairy animal feeding
* Food safety principles
* Sampling methods
* Dairy animal feed intake

**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:   1. Applied food safety measures to feed dairy animals 2. Grouped dairy animals into feeding classes 3. Assembled feed materials and supplies as per nutritional requirements and work place procedures 4. Mixed Rations for different dairy classes as per the nutritional requirements of the animal 5. Sampled feed ingredients and rations based on work instructions 6. Evaluated feed intake based on palatability, form and physiological status 7. Stored Surplus materials and supplies not consumed as per workplace procedure 8. Separated Recyclable and non-recyclable materials as per work instructions 9. Developed and shared feeding records and based on workplace policy |
| 1. Resource Implications | The following resources should be provided:   1. Appropriately simulated environment where assessment can take place 2. Access to relevant workplace assessment environment 3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Oral questioning 3. Third party report 4. Written test 5. Portfolio of Evidence 6. Interview |
| 1. Context of Assessment | Competency may be assessed:  On-the-job  Off-the –job  During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## MILK DAIRY ANIMALS

**UNIT CODE: 0811 341 03A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to milk dairy animals. It involves preparing to milk dairy animals, milking dairy animals, evaluating dairy animal milking and completing dairy animal milking.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to milk dairy animals | * 1. ***Milking tools and equipment*** are assembled based on the milking method and species of dairy animal and the code of hygienic practice for milk and milk products.   2. ***Milking materials*** and ***supplies*** are assembled based on the milking method and the code of hygienic practice for milk and milk products.   3. ***Milking animals*** are assembled in accordance with Livestock Production Manual.   4. PPEs are identified, gathered based on requirements of the job and the code of hygienic practice for milk and milk products.   5. Occupational safety and health procedures are adhered to according to work place procedures as per the public health regulations. |
| 1. Milk dairy animals | * 1. Milking animals are restrained according to animal welfare regulations   2. Udder is prepared according to the livestock production manual and the code of hygienic practice for milk and milk products.   3. Milking animals are tested for mastitis infection according to the Livestock Production Manual and the code of hygienic practice for milk and milk products.   4. Milking animals are milked based on method of milking as per Livestock Production Manual and the code of hygienic practice for milk and milk products.   5. Milked animal’s udder quarters are disinfected as per Livestock Production Manual and the code of hygienic practice for milk and milk products   6. Milk is weighed and sieved in accordance with Livestock Production Manual and the code of hygienic practice for milk and milk products.   7. Milk is stored and cooled based on Livestock Production Manual and the code of hygienic practice for milk and milk products. |
| 1. Evaluate dairy animal milking | * 1. Average time taken to milk is observed based on Livestock Production Manual.   2. Cleanliness of milk, milking parlor and equipment is checked based on workplace policy and the code of hygienic practice for milk and milk products.   3. Faults in the milking machine are detected and rectified according to work place procedures and manufacturer’s specifications. |
| 1. Complete dairy animal milking | * 1. Milking is recorded according to Livestock Production Manual and work place policy   2. Milking equipment are cleaned and stored as per cleaning standard operating procedures and the code of hygienic practice for milk and milk products   3. Milking parlour is cleaned as per Livestock Production Manual, workplace policy and the code of hygienic practice for milk and milk products   4. Waste is disposed of in regard to environment protection regulations and the code of hygienic practice for milk and milk products. |

**RANGE**

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

|  |  |  |
| --- | --- | --- |
| **Variable** | **Range** | |
| 1. Milking tools and equipment may include but not limited to: | * Milking buckets * Sieve * Cans * Mastitis test kit | * Strip cup * Teat dip cup * Portable milking machine |
| 1. Milking materials and supplies may include but not limited to | * Milking salve * Udder clothes * Mastitis testing reagents | * Teat dip solution * Restraining rope |
| 1. Milking animals may include but not limited to: | Lactating;   * Dairy cattle * Dairy goats * Camels | |
| 1. Environment protection regulations may include but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 | |

**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:

* Weighing
* Animal handling
* Milking
* Troubleshooting
* Cleaning
* Communication
* Milking machine operation

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Methods of milking
* Milk let down
* Hygienic milk production
* Udder health
* Food safety principles
* Code of hygienic practice for milk and milk products
* Mastitis management
* Types of disinfectants
* Milking machine operation and maintenance
* Milk spoilage
* Animal welfare
* Occupational safety and health regulations
* Milk recording

**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:   1. Donned PPEs 2. AssembledMilking tools, equipment, materials and supplies 3. Assembledand restrainedMilking animals 4. Prepared udder according to the livestock production manual and the code of hygienic practice for milk and milk products. 5. Tested milking animal for mastitis before milking 6. Used correct milking techniques 7. Operated milking machine in accordance with user’s manual 8. Disinfected udder after milking 9. Weighed and sieved Milk 10. Stored and cooled Milk 11. Documented milk production and food safety records 12. Stored reusable materials and supplies 13. Disposed of Waste in regard to environment protection regulations and the code of hygienic practice for milk and milk products. |
| 1. Resource Implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant workplace assessment environment   3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Oral questioning 3. Third party report 4. Written test 5. Portfolio of Evidence 6. Interview |
| 1. Context of Assessment | Competency may be assessed:  On-the-job  Off-the –job  During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## REAR DAIRY YOUNG STOCK

**UNIT CODE: 0811 341 04A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to rear dairy young stock. It involves preparing to rear dairy young stock, rearing dairy young stock, evaluating rearing of dairy young stock and completing rearing of dairy young stock.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to rear dairy young stock | * 1. ***Young stock*** management ***tools, equipment, materials*** and ***supplies*** are identified and assembled based on livestock species in accordance with the livestock production manual   2. Structures for managing young stock are identified and prepared in accordance with the livestock production manual   3. Personal Protection Equipment and Apparel (PPE) are identified and gathered based on job requirements   4. Occupational safety and health procedures are adhered to according to work place procedures   5. Female animals showing signs of imminent parturition are identified and separated according to the livestock production manual |
| 1. Rear dairy young stock | * 1. Neonate is fed adequate amounts of colostrum according to the LPM   2. Orphaned neonates are foster-fed according to the LM   3. Young stock is ***identified*** using suitable method in accordance with LPM, animal welfare regulations and work place policy   4. Young stock is introduced to roughage feeding in accordance with LPM   5. Young stock ***healthcare*** is provided based on identified animal health risk. |
| 1. Evaluate rearing of dairy young stock | * 1. Young stock are weighed in accordance with LPM instructions and work place policy   2. Dams with dystocia in need of vet attention are identified and reported according to the livestock production manual |
| 1. Complete rearing of dairy young stock | * 1. Young males unsuitable for breeding are castrated based on animal welfare regulations, LPM and work place policy   2. Young stock are weaned in accordance with the LPM   3. Calf pens are cleaned and bedding changed as per Livestock Production Manual and workplace policy.   4. Waste is disposed of with regard to environment protection regulations. |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Young Stock may include but not limited to: | Offspring of the following between birth and weaning:   * Cattle * Goats * Camels |
| 1. Tools and equipment may include but not limited to: | Tools and equipment required for:   * Identification * Castration * Disbudding / dehorning * Hoof trimming * Young stock handling * Weighing |
| 1. Materials and supplies may include but not limited to: | * Feed – artificial colostrum ingredients, milk replacers, pellets, pencils, mineral supplements * Dewormers * Cleaning materials |
| 1. Environment protection regulations may include but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 |
| 1. Neonates may include but not limited to: | The young ones at birth of the following:   * Cattle * Goats * Camels |
| 1. Identified may include but not limited to: | Markings or gadgets on animals for purposes of distinguishing individual animals:   * Ear tagging * Tattooing * Ear Notching * Electronic transponders * Branding |
| 1. Healthcare may include but not limited | * Implement vaccination programs against endemic diseases * Endo and Ecto - parasite control * Quarantining * Disease notification |

**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:

* Animal handling
* Animal production
* Troubleshooting
* Farm equipment operation skills
* Animal health applied skills

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Young stock feeding requirements
* Food safety principles
* Foster feeding
* Young stock health care
* Parturition signs
* Methods of animal identification
* Animal welfare
* Castration methods
* Disbudding methods
* Weaning process

**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:   1. Donned PPEs 2. Identified and separated females showing signs of imminent parturition 3. Identified females requiring assistance to parturate 4. Implemented recommended young stock feeding regime 5. Fed Neonate adequate amounts of colostrum according to the LPM 6. Foster-fed Orphaned neonates 7. Weaned young stock using right procedure at correct age and body weight 8. Introduced Young stock to roughage feeding 9. Debudded Young stock 10. Removed extra mammary teats Young stock 11. Weighed Young stock in accordance with LPM 12. Identified dams with dystocia and in need of vet attention 13. Castrated young males unsuitable for breeding 14. Cleaned Calf pens and changed bedding as per Livestock Production Manual 15. Observed occupational safety and health measures in the working environment 16. Stored reusable materials and supplies 17. Observed laid down environmental protection measures at the work place 18. Disposed of Waste with regard to environment protection regulations. 19. Documented dairy young stock rearing and food safety records |
| 1. Resource Implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant workplace assessment environment   3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Oral questioning 3. Third party report 4. Written test 5. Portfolio of Evidence 6. Interview |
| 1. Context of Assessment | Competency may be assessed:  On-the-job  Off-the –job  During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## MILK DAIRY ANIMALS

**UNIT CODE: 0811 341 03C**

**UNIT DESCRIPTION**

This unit specifies the competencies required to milk dairy animals. It involves preparing to milk dairy animals, milking dairy animals, evaluating dairy animal milking and completing dairy animal milking.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to milk dairy animals | * 1. ***Milking tools and equipment*** are assembled based on the milking method and species of dairy animal and the code of hygienic practice for milk and milk products.   2. ***Milking materials*** and ***supplies*** are assembled based on the milking method and the code of hygienic practice for milk and milk products.   3. ***Milking animals*** are assembled in accordance with Livestock Production Manual.   4. PPEs are identified, gathered based on requirements of the job and the code of hygienic practice for milk and milk products.   5. Occupational safety and health procedures are adhered to according to work place procedures as per the public health regulations. |
| 1. Milk dairy animals | * 1. Milking animals are restrained according to animal welfare regulations   2. Udder is prepared according to the livestock production manual and the code of hygienic practice for milk and milk products.   3. Milking animals are tested for mastitis infection according to the Livestock Production Manual and the code of hygienic practice for milk and milk products.   4. Milking animals are milked based on method of milking as per Livestock Production Manual and the code of hygienic practice for milk and milk products.   5. Milked animal’s udder quarters are disinfected as per Livestock Production Manual and the code of hygienic practice for milk and milk products   6. Milk is weighed and sieved in accordance with Livestock Production Manual and the code of hygienic practice for milk and milk products.   7. Milk is stored and cooled based on Livestock Production Manual and the code of hygienic practice for milk and milk products. |
| 1. Evaluate dairy animal milking | * 1. Average time taken to milk is observed based on Livestock Production Manual.   2. Cleanliness of milk, milking parlor and equipment is checked based on workplace policy and the code of hygienic practice for milk and milk products.   3. Faults in the milking machine are detected and rectified according to work place procedures and manufacturer’s specifications. |
| 1. Complete dairy animal milking | * 1. Milking is recorded according to Livestock Production Manual and work place policy   2. Milking equipment are cleaned and stored as per cleaning standard operating procedures and the code of hygienic practice for milk and milk products   3. Milking parlour is cleaned as per Livestock Production Manual, workplace policy and the code of hygienic practice for milk and milk products   4. Waste is disposed of in regard to environment protection regulations and the code of hygienic practice for milk and milk products. |

**RANGE**

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

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| --- | --- | --- |
| **Variable** | **Range** | |
| 1. Milking tools and equipment may include but not limited to: | * Milking buckets * Sieve * Cans * Mastitis test kit | * Strip cup * Teat dip cup * Portable milking machine |
| 1. Milking materials and supplies may include but not limited to | * Milking salve * Udder clothes * Mastitis testing reagents | * Teat dip solution * Restraining rope |
| 1. Milking animals may include but not limited to: | Lactating;   * Dairy cattle * Dairy goats * Camels | |
| 1. Environment protection regulations may include but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 | |

**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:

* Weighing
* Animal handling
* Milking
* Troubleshooting
* Cleaning
* Communication
* Milking machine operation

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Methods of milking
* Milk let down
* Hygienic milk production
* Udder health
* Food safety principles
* Code of hygienic practice for milk and milk products
* Mastitis management
* Types of disinfectants
* Milking machine operation and maintenance
* Milk spoilage
* Animal welfare
* Occupational safety and health regulations
* Milk recording

**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 | Assessment requires evidence that the candidate:   1. Applied food safety measures to milk dairy animals 2. AssembledMilking tools and equipment 3. AssembledMilking materials and supplies 4. AssembledMilking animals 5. Restrained the milking animal. 6. Prepared udder according to the livestock production manual and the code of hygienic practice for milk and milk products. 7. Tested milking animal for mastitis before milking 8. Used correct milking techniques 9. Operated milking machine in accordance with user’s manual 10. Disinfected udder after milking 11. Weighed and sieved Milk 12. Stored and cooled Milk 13. Observed vverage time taken to milk 14. Cleaned milking parlor and equipment 15. Cleaned and stored milking equipment 16. Stored Reusable materials and supplies 17. Detected faults in the milking machine 18. Observed occupational safety and health measures in the working environment 19. Observed laid down environmental protection measures at the work place 20. Documented milk production and food safety records 21. Stored reusable materials and supplies 22. Disposed of Waste in regard to environment protection regulations and the code of hygienic practice for milk and milk products. |
| 1. Resource Implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant workplace assessment environment   3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Oral questioning 3. Third party report 4. Written test 5. Portfolio of Evidence 6. Interview |
| 1. Context of Assessment | Competency may be assessed:  On-the-job  Off-the –job  During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## REAR DAIRY YOUNG STOCK

**UNIT CODE: 0811 341 04C**

**UNIT DESCRIPTION**

This unit specifies the competencies required to rear dairy young stock. It involves preparing to rear dairy young stock, rearing dairy young stock, evaluating rearing of dairy young stock and completing rearing of dairy young stock.

**ELEMENTS AND PERFORMANCE CRITERIA**

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| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to rear dairy young stock | * 1. ***Young stock*** management ***tools, equipment, materials*** and ***supplies*** are identified and assembled based on livestock species in accordance with the livestock production manual   2. Structures for managing young stock are identified and prepared in accordance with the livestock production manual   3. Personal Protection Equipment and Apparel (PPE) are identified and gathered based on job requirements   4. Occupational safety and health procedures are adhered to according to work place procedures   5. Female animals showing signs of imminent parturition are identified and separated according to the livestock production manual |
| 1. Rear dairy young stock | * 1. Neonate is fed adequate amounts of colostrum according to the LPM   2. Orphaned neonates are foster-fed according to the LM   3. Young stock is ***identified*** using suitable method in accordance with LPM, animal welfare regulations and work place policy   4. Young stock is introduced to roughage feeding in accordance with LPM   5. Young stock ***healthcare*** is provided based on identified animal health risk. |
| 1. Evaluate rearing of dairy young stock | * 1. Young stock are weighed in accordance with LPM instructions and work place policy   2. Dams with dystocia in need of vet attention are identified and reported according to the livestock production manual |
| 1. Complete rearing of dairy young stock | * 1. Young males unsuitable for breeding are castrated based on animal welfare regulations, LPM and work place policy   2. Young stock are weaned in accordance with the LPM   3. Calf pens are cleaned and bedding changed as per Livestock Production Manual and workplace policy.   4. Waste is disposed of with regard to environment protection regulations. |

**RANGE**

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

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| **Variable** | **Range** |
| 1. Young Stock may include but not limited to: | Offspring of the following between birth and weaning:   * Cattle * Goats * Camels |
| 1. Tools and equipment may include but not limited to: | Tools and equipment required for:   * Identification * Castration * Disbudding / dehorning * Hoof trimming * Young stock handling * Weighing |
| 1. Materials and supplies may include but not limited to: | * Feed – artificial colostrum ingredients, milk replacers, pellets, pencils, mineral supplements * Dewormers * Cleaning materials |
| 1. Environment protection regulations may include but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 |
| 1. Neonates may include but not limited to: | The young ones at birth of the following:   * Cattle * Goats * Camels |
| 1. Identified may include but not limited to: | Markings or gadgets on animals for purposes of distinguishing individual animals:   * Ear tagging * Tattooing * Ear Notching * Electronic transponders * Branding |
| 1. Healthcare may include but not limited | * Implement vaccination programs against endemic diseases * Endo and Ecto - parasite control * Quarantining * Disease notification |

**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:

* Animal handling
* Animal production
* Troubleshooting
* Farm equipment operation skills
* Animal health applied skills

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Young stock feeding requirements
* Food safety principles
* Foster feeding
* Young stock health care
* Parturition signs
* Methods of animal identification
* Animal welfare
* Castration methods
* Disbudding methods
* Weaning process

**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 | Assessment requires evidence that the candidate:   1. Applied food safety measures to rear dairy young stock 2. Identified and separated females showing signs of imminent parturition 3. Identified females requiring assistance to parturate 4. Implemented recommended young stock feeding regime 5. Fed Neonate adequate amounts of colostrum according to the LPM 6. Foster-fed Orphaned neonates 7. Weaned young stock using right procedure at correct age and body weight 8. Introduced Young stock to roughage feeding 9. Debudded Young stock 10. Removed extra mammary teats Young stock 11. Weighed Young stock in accordance with LPM 12. Identified dams with dystocia and in need of vet attention 13. Castrated young males unsuitable for breeding 14. Cleaned Calf pens and changed bedding as per Livestock Production Manual 15. Observed occupational safety and health measures in the working environment 16. Stored reusable materials and supplies 17. Observed laid down environmental protection measures at the work place 18. Disposed of Waste with regard to environment protection regulations. 19. Documented dairy young stock rearing and food safety records |
| 1. Resource Implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant workplace assessment environment   3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Oral questioning 3. Third party report 4. Written test 5. Portfolio of Evidence 6. Interview |
| 1. Context of Assessment | Competency may be assessed:  On-the-job  Off-the –job  During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## DEVELOP DAIRY FARM STRUCTURES

**UNIT CODE: 0732 341 05A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to develop dairy farm structures. It involves preparing to develop dairy farm structures, develop dairy farm structures, evaluate construction of dairy farm structures and complete dairy farm structures construction

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to develop dairy farm structures | * 1. Dairy enterprises are identified based dairy production system   2. Site is cleared based on vegetation on the ground and soil type.   3. Tools and equipment are identified and gathered based on the requirements of the job.   4. PPEs are identified and gathered based on requirements of the job and the code of hygienic practices for milk and milk products.   5. Occupational safety and health procedures are adhered to according to work place procedures and public health act.   6. Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures |
| 1. Develop dairy farm structures | * 1. Development of ***dairy farm structures*** is carried out following work procedures based on the code of hygienic practices for milk and milk products and the code of practice for the animal feed industry   2. Foundation is laid based on the type of structure.   3. Roof is laid based on the design and type of structure. |
| 1. Evaluate construction of dairy farm structures | 3.1 Faults in dairy farm structure are detected, reported and repaired based on standard operating procedures.  3.2 Dairy farm structures are cleaned as per the dairy structure cleaning and maintenance procedures based on the code of hygienic practices for milk and milk products and the code of practice for the animal feed industry |
| 1. Complete dairy farm structures construction | * 1. Recyclable materials and supplies are stored as per manufacturer’s instructions   2. Non-recyclable materials and supplies are disposed-off in regard to environment protection regulations. |

**RANGE**

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

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| **Variable** | **Range** | |
| 1. Construction materials may include but not limited to: | * Timber * Poles * Nails * Iron sheets * Barbed wire | |
| 1. Environment protection regulations includes but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 | |
| 1. Dairy farm structures may include but not limited to: | * Milking Parlor * Zero grazing unit * Holding crush * Hay barn * Plunge dip | * Fences * Feeding troughs * Watering troughs * Spray race * Feed formulation unit |

**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:

* Measuring skills
* Troubleshooting
* Masonry skills
* Carpentry skills
* Communication skills

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Dairy enterprises
* Types of dairy farm structures
* Types of construction materials
  + Mixing ratios
  + Making concrete
* Dairy structure maintenance requirements
* Food safety principles
* Code of hygienic practices for milk and milk products
* Code of practice for the animal feed industry
* Waste disposal
* Environment protection regulations
* Occupational safety and health regulations

**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:   * 1. Applied food safety measures to develop dairy farm structures   2. Identified and donned correct PPEs   3. Measured and pegged structure layout accurately   4. Mixed construction materials in the recommended ratio   5. Observed occupational safety and health measures in the working environment   6. Observed laid down environmental protection measures at the work place   7. Documented dairy farm structures development and food safety records |
| 1. Resource Implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant workplace assessment environment   3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Oral questioning   3. Third party report   4. Written test   5. Portfolio of Evidence |
| 1. Context of Assessment | Competency may be assessed:  On-the-job  Off-the –job  During Industrial attachment. |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## BREED DAIRY ANIMALS

**UNIT CODE: 0811 341 06A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to breed dairy animals. It involves preparing to breed dairy animals, breeding dairy animals, evaluating dairy animal breeding, completing dairy animal breeding.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to breed dairy animals | * 1. Breeding management ***tools, equipment, materials*** and ***supplies*** are identified and assembled based on breeding activity, livestock species in accordance with the Livestock Production Manual   2. Personal Protection Equipment and Apparel are identified and gathered based on job requirements   3. ***Dairy animals*** are ***Identified*** in accordance with the Livestock Production Manual (LPM), animal welfare regulations and the code of practice for milk and milk products   4. Occupational safety and health procedures are adhered to according to work place procedures   5. Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures |
| 1. Breed dairy animals | * 1. Female animals on heat are detected based on LPM   2. Breeding systems are identified based on breeding manual |
| 1. Evaluate dairy animal breeding | * 1. Repeat breeders are detected based on frequency of heat   2. Errors are detected, reported and rectified as per workplace policy. |
| 1. Complete dairy animal breeding | * 1. Dairy animals are culled based on culling criteria   2. Surplus Materials and supplies are stored as per manufacturer’s instructions.   3. Waste is managed and disposed based on environment protection regulations. |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Tools and equipment may include but not limited to: | Tools and equipment required for:   * Identification * Castration * Handling parturition * Weighing * Artificial insemination |
| 1. Materials and supplies may include but not limited to: | Supplies and materials required for:   * Cleaning * Disinfection * Artificial Insemination * Identification |
| 1. Dairy animals may include but not limited to: | * Dairy cattle * Dairy goat * Camel |
| 1. Identified may include but is not limited to: | Marking or placing gadgets on animals that distinguish individual animals by;   * Ear tagging * Tattooing * Ear Notching * Electronic transponders * Branding |
| 1. Environment protection regulations may include but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 |
| 1. Served may include but not limited to: | * Use of natural (bull, buck) * Artificial (insemination) * Embryo Transfer |

**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:

* Animal handling
* Data recording
* Heat detection
* Trouble shooting

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Methods of animal identification
* Heat signs
* Interpreting the bulls catalogue
* Parturition process
* Transmission of breeding diseases
* Artificial insemination
* Culling methods
* Environment protection regulations
* Waste management and disposal methods

**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:   * 1. Applied food safety measures to breed dairy animals   2. Assigned identification marks for dairy animals following recommended procedures in the livestock breeding manual   3. Identified the correct time of oestrus to serve dairy animals   4. Used the correct tools and equipment to serve the animal   5. Used PPEs while serving the dairy animals   6. Identified Parturating animals in need of assistance   7. Notified farm authorities on dystocia cases in need of vet attention   8. Observed occupational safety and health measures in the working environment   9. Observed laid down environmental protection measures at the work place   10. Documented dairy animal breeding and food safety records |
| 1. Resource Implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant workplace assessment environment   3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Oral questioning 3. Written test 4. Portfolio of Evidence 5. Interview 6. Third party report |
| 1. Context of Assessment | Competency may be assessed:  On-the-job,  Off-the-job  During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## FORMULATE DAIRY FEED

**UNIT CODE: 0811 341 07A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to formulate dairy feed. It involves preparing to formulate dairy feed, formulating dairy feed, evaluating dairy feed formulation and completing dairy feed formulation.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to formulate dairy feed | * 1. Feed formulation ***tools, equipment, materials*** and ***supplies*** are identified and assembled as per the work instructions based on the feed formulation manual, the code of practice for the animal feed industry and feed standards.   2. Personal Protection Equipment and Apparel are identified and gathered based on job requirements and the code of hygiene practice for milk and milk products.   3. Ingredients are sampled for laboratory analysis according to ***sampling procedures***   4. Packaging materials are labeled as per ***feed manufacturing guidelines*** |
| 1. Formulate dairy feed | * 1. Feed ingredients are prepared and processed according to feed manufacturing guidelines and the code of practice for the animal feed industry.   2. Prepared feed ingredients are mixed as per feed manufacturing guidelines and the code of practice for the animal feed industry   3. Mixed rations are packaged as per feed manufacturing guidelines and the code of practice for the animal feed industry   4. Feed is stored in accordance with animal feed manufacturing guidelines and the code of practice for the animal feed industry |
| 1. Evaluate dairy feed formulation | * 1. Mixed rations are sampled for evaluation according to sampling methods   2. Errors are detected, reported and rectified based on workplace policy and feed formulation guidelines. |
| 1. Complete dairy feed formulation | * 1. Feed handling equipment and structures are cleaned in accordance with good manufacturing practices, work place policy and the code of practice for the animal feed industry.   2. Reusable materials and supplies are stored based on the manufacturer’s instructions and the code of practice for the animal feed industry   3. Non-recyclable waste materials are disposed of in due regard to environment protection regulations. |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Tools and equipment may include but not limited to: | Tools and equipment required for:   * Feed sampling * Feed processing * Feed mixing * Packaging and labelling * Weighing |
| 1. Materials and supplies may include but not limited to: | Supplies and materials required for:   * Packaging * Cleaning |
| 1. Ingredients may include but not limited to: | * Feedstuff * Additives |
| 1. Sampling procedures may include but not limited to: | * Random sampling * Systematic sampling * Purposive sampling |
| 1. Feed manufacturing guidelines may include but not limited to: | Animal feed regulatory authorities’ specifications on;   * Manufacturing procedures * Nutrient content * Processing procedures * Mixing procedures * Ingredient inclusion levels * Labeling * Storage |
| 1. Environment protection regulations includes but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 |

**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:

* Sampling skills
* Troubleshooting
* Feed quality evaluation
* Judging skills
* Manual mixing skills
* Feed processing and mixing machine operation skills

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Types of feeds and feedstuff
* Feed and feedstuff sampling procedures
* Animal feed processing procedures
* Importance of food safety
* Relevant standards and regulations in the animal feed industry
* Feed mixing methods
* Guidelines of feed manufacturing
* Occupational safety and health regulations

**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:   * 1. Applied food safety measures to formulate dairy feed   2. Prepared and processed Feedstuff in correct form of presentation   3. mixed feed ingredients   4. Rectified errors detected based on workplace policy and feed formulation guidelines.   5. Sampled for mixed rations for evaluation   6. Packaged and stored Feed as recommended   7. Labeled feed packages correctly   8. Cleaned feed handling equipment and structures   9. Stored Rrusable materials and supplies   10. Disposed of Non-recyclable waste materials in due regard to environment protection regulations.   11. Observed occupational safety and health measures in the working environment   12. Observed laid down environmental protection measures at the work place   13. Documented dairy feed formulation and food safety records. |
| 1. Resource Implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant workplace assessment environment   3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Product analysis   3. Oral questioning   4. Third party report   5. Portfolio of Evidence   6. Interview |
| 1. Context of Assessment | Competency may be assessed:  On-the-job  Off-the –job  During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

## MAINTAIN DAIRY HERD HEALTH

**UNIT CODE: 0841 341 08A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to maintain dairy herd health. It involves preparing to maintain dairy herd health, maintaining dairy herd health, evaluating maintenance of dairy herd health and completing maintenance of dairy herd health.

**ELEMENTS AND PERFORMANCE CRITERIA**

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| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to maintain dairy herd health | * 1. Herd health management ***tools, equipment, materials*** and ***supplies*** are identified and assembled based on livestock species in accordance with the livestock production manual   2. Structures for herd health management are identified and prepared in accordance with the livestock production manual and code of hygienic practices for milk and milk products   3. Personal Protection Equipment and Apparel are identified, gathered based on job requirements code of hygienic practices for milk and milk products   4. Occupational safety and health procedures are adhered to according to work place procedures |
| 1. Maintain dairy herd health | * 1. ***Biosecurity measures*** are implemented based on design in accordance with ***public health regulations*** and work place policy   2. Internal and external parasites are controlled in dairy herds in accordance with the Livestock Production Manual (LPM)and Animal Disease Act (Cap 364)   3. Vaccination program is adhered to according to work place policy as per the Animal Disease Act (Cap 364)   4. Animals showing signs of ill health are quarantined according to animal health care requirements and Animal Disease Act (Cap 364)   5. Overgrown ***dairy animal*** hooves are trimmed as per the LPM and animal welfare regulations   6. Overgrown dairy animal horns are cut as per the LPM and animal welfare regulations   7. Dairy animals are ***groomed*** according to the LPM and work place policy |
| 1. Evaluate maintenance of dairy herd health | * 1. Animals showing signs of ill health or parasite infestation are detected in accordance with LPM   2. Parasite and disease incidences are reported to farm authorities according to work place policy and Animal Disease Act (Cap 364) |
| 1. Complete maintenance of dairy herd health | * 1. Herd health management practices are recorded in accordance with work place policy   2. Herd health management equipment are cleaned, sterilized and stored in accordance with work place policy   3. Waste is disposed of with regard to environment protection regulations |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Tools and equipment may include but not limited to: | Tools and equipment required for:   * Deworming * Spraying and dipping * Hoof trimming * Disbudding / dehorning * Grooming * Weighing * Land clearing, cleaning and disinfection |
| 1. Materials and supplies may include but not limited to: | Supplies and materials required for:   * Dewormers * Acaricides * Cleaning and disinfection |
| 1. Environment protection regulations may include but not limited to: | * Public Health Act * EMCA 1999 * OSH Act 2007 |
| 1. Biosecurity measures may include but not limited to: | * Foot baths * Isolation pens/paddocks * Fencing * Disinfection/fumigation * Parasite and pest control * Proper disposal of dead animals |
| 1. Public health regulations may include but not limited to: | Guidelines designed and enforced by:   * National Environmental Management Authority * Kenya Veterinary Board * Ministry of Health |
| 1. Dairy animals may include but not limited to: | Livestock kept mainly for milk production:   * Cattle * Goats * Camels |
| 1. Groom may include but not limited to: | * Brushing * Washing * Clipping coat hair |

**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:

* Animal handling
* Farm equipment operation
* Troubleshooting
* Animal health care applied skills

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Control methods of common diseases and parasites
* Signs of ill health in dairy animals
* Animal welfare
* Food safety principles
* Methods of hoof trimming and dehorning
* Animal health care
* Grooming procedures
* Record keeping

**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 | Assessment requires evidence that the candidate:   1. Applied food safety measures to maintain dairy herd health 2. Implemented bio-security measures 3. Controlled internal and external parasites 4. Adhered to Vaccination program 5. Quarantined animals showing signs of ill health 6. Groomed dairy animals 7. Used correct procedure to trim hooves and dehorn dairy animals 8. Observed occupational safety and health measures in the working environment 9. Observed laid down environmental protection measures at the work place 10. Recorded herd health management practices 11. Cleaned, sterilized and stored Herd health management equipment 12. Stored Reusable materials and supplies 13. Disposed of Waste with regard to environment protection regulations 14. Documented dairy herd health maintenance and food safety |
| 1. Resource Implications | The following resources should be provided:   * 1. Appropriately simulated environment where assessment can take place   2. Access to relevant workplace assessment environment   3. Resources relevant to the proposed assessment activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Oral questioning 3. Third party report 4. Written test 5. Portfolio of Evidence 6. Interview |
| 1. Context of Assessment | Competency may be assessed:  On-the-job  Off-the –job  During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |