****

**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**DAIRY FARM MANAGER**

**LEVEL 4**



TVET CDACC

P.O. BOX 15745-00100

NAIROBI

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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.

**PRINCIPAL SECRETARY**

**VOCATIONAL AND TECHNICAL TRAINING**

**MINISTRY OF EDUCATION**

# 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.

**CHAIRMAN**

**TVET CDACC**

# 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.

**CHAIRMAN**

**DAIRY SECTOR SKILLS ADVISORY COMMITTEE**

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# ABBREVIATIONS AND ACRONYMS

ATVET Agricultural Technical and Vocational Education and Training

BC Basic Competency

CAADP Comprehensive Africa Agricultural Development Programme

CDACC Curriculum Development, Assessment and Certification Council

CR Core Competency

DA Dairy

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

OS Occupational Standards

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

TVET Technical and Vocational Education and Training

# KEY TO UNIT CODE

**DA /OS /FM /BC /01/ 4/B**

Industry or sector

Occupational Standards

Occupational area

Type of competency

Competency number

Competency level

Version control

# OVERVIEW

Dairy Farm Manager level 4 qualification consists of competencies that an individual must achieve to develop dairy farm structures, produce dairy forage, formulate dairy feed, feed dairy animals, milk dairy animals, breed dairy animals, rear young stock and maintain dairy herd health.

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

**BASIC UNITS OF COMPETENCY**

|  |  |
| --- | --- |
| **Unit Code** | **Unit of Title** |
| DA/OS/FM/BC/01/4/B | Demonstrate Communication Skills |
| DA/OS/FM/BC/02/4/B | Demonstrate Numeracy Skills |
| DA/OS/FM/BC/03/4/B | Demonstrate Digital Literacy |
| DA/OS/FM/BC/04/4/B | Demonstrate Entrepreneurial Skills |
| DA/OS/FM/BC/05/4/B | Demonstrate Employability Skills |
| DA/OS/FM/BC/06/4/B | Demonstrate Environmental Literacy |
| DA/OS/FM/BC/07/4/B | Demonstrate Occupational Safety and Health Practices |

CORE UNITS OF COMPETENCY

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| DA/OS/FM/CR/01/4/B | Develop Dairy Farm Structures |
| DA/OS/FM/CR/02/4/B | Produce Dairy Forage |
| DA/OS/FM/CR/03/4/B | Breed Dairy Animals |
| DA/OS/FM/CR/04/4/B | Formulate Dairy Feed |
| DA/OS/FM/CR/05/4/B | Feed Dairy Animals |
| DA/OS/FM/CR/06/4/B | Milk Dairy Animals |
| DA/OS/FM/CR/07/4/B | Rear Dairy Young Stock |
| DA/OS/FM/CR/08/4/B | Maintain Dairy Herd Health |

# BASIC UNITS OF COMPETENCY

# DEMONSTRATE COMMUNICATION SKILLS

**UNIT CODE:** DA/OS/FM/BC/01/4/B

**UNIT DESCRIPTION**

This unit covers the competencies required demonstrate communication skills. It involvesobtaining and conveying workplace information, completing relevant work-related documents, communicating information about workplace processes, leading workplace discussion and communicating workplace issues.

**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. Obtain and convey workplace information | 1. Specific and relevant information is accessed from ***appropriate sources*** based on standard procedures 2. Effective questioning, active listening and speaking skills are used to gather and convey information based on communication needs 3. Appropriate ***medium*** is used to transfer information and ideas in accordance with workplace guidelines 4. Appropriate non- verbal communication is used as per the communication needs 5. Appropriate lines of communicationwith supervisors and colleagues are identified and followed based on workplace requirements 6. Location and storage of information is undertaken according to workplace procedures    1. Personal interaction is carried out clearly and concisely according to workplace requirements |
| 1. Complete relevant work-related documents | * 1. Range of forms relating to conditions of employment are completed according to workplace procedures   2. Workplace data is recorded based on workplace requirements   3. Errors in recording information are identified and acted upon in accordance with workplace policies   4. Reporting requirements are completed according to organizational guidelines |
| 1. Communicate information about workplace processes | 1. Information sources are identified according to workplace procedures 2. ***Methods of communication*** are selected based on workplace guidelines 3. Multiple operations are communicated according to workplace structure 4. Work-related questions are asked and responded based on set protocols 5. Information is selected and organized according to workplace requirements 6. Verbal and written reporting is undertaken as per workplace requirements 7. Communication is maintained according to workplace standards |
| 1. Lead workplace discussions | 1. Response to workplace issues are sought and provided as per workplace protocol 2. Constructive contributions are made based on ***workplace discussions*** 3. Workplace objectives and action plan are communicated according to workplace requirements |
| 1. Identify and communicate issues arising in the workplace | 1. Issues and problems are identified as per workplace guidelines 2. Problems and issues in the workplace are organized according to workplace operations 3. Dialogue is initiated with appropriate personnel as per workplace structure 4. Problems and issues raised are communicated as per the workplace reporting procedures |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Methods of communication mayinclude but not limited to: | * Non-verbal gestures * Verbal * Face to face * Two-way radio * Speaking to groups * Using telephone * Written * Internet |
| 1. Workplace discussion may include but not limited to: | * Coordination meetings * Toolbox discussion * Peer-to-peer discussion |

**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
* Active listening
* Interpretation
* Negotiation
* Writing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Organization requirements for written and electronic communication methods
* Effective verbal communication methods
* Report writing
* Effective questioning techniques (clarifying and probing)
* Workplace etiquette

**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. Dealt with a range of communication/information at one time 2. Made constructive contributions in workplace issues 3. Sought workplace issues effectively 4. Responded to workplace issues promptly 5. Presented information clearly and effectively in written form 6. Used appropriate sources of information 7. Asked appropriate questions 8. Provided accurate information |
| 1. Resource Implications | 1. Access to relevant workplace where assessment can take place 2. Appropriately simulated environment where assessment can take place 3. Materials relevant to the proposed activity or tasks |
| 1. Methods of Assessment | 1. Third-party reports 2. Portfolio 3. Interview 4. Written tests 5. Observation 6. Oral questioning |
| 1. Context of Assessment | Competency may be assessed   1. On the job 2. Off the job 3. During industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE NUMERACY SKILLS

**UNIT CODE:** DA/OS/FM/BC/02/4/B

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate numeracy skills. It involves identifying and using whole numbers and simple fractions, decimals and percentages for work, identifying, measuring and estimating familiar quantities for work, reading and using familiar maps, plans and diagrams for work, identifying and describing common 2D and some 3D shapes for work, constructing simple tables and graphs for work using familiar data and identifying and interpreting information in familiar tables, graphs and charts for work.

**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. Identify and use whole numbers and simple fractions, decimals and percentages for work | | 1. Simple fractions, decimals and percentages identified and interpreted as per standard operating procedures. 2. Understanding of place value by organising numbers from smallest to largest demonstrated as SOPs 3. Required numerical information located and decision made on appropriate method to solve a problem as per SOPs 4. Limited range of calculations performed using the four operations using SOPs 5. Links between operations described as per SOPs 6. Estimations made to check reasonableness of results of problem-solving process as SOPs 7. Numerical information recorded, and the result of the task communicated using informal and some formal language and symbolism as per workplace procedures |
| 1. Identify, measure and estimate familiar quantities for work | 1. Measurement information in workplace tasks and texts identified and interpreted as per workplace procedures. 2. Familiar units of measurement needed for tasks is identified as per measurements manuals/charts 3. Familiar and simple amounts estimated as per workplace procedures. 4. Appropriate measuring equipment selected as per SOPs 5. ***Simple measuring equipment*** graduated in familiar units to measure relevant quantities is used as per graduation manuals. 6. Calculation done using familiar units of measurement as per SOPs 7. Measurements and results checked against estimates as per job specifications. 8. Results are recorded or reported as per workplace procedures 9. Results relevant to the workplace task are communicated using informal and some formal mathematical and general language as per workplace procedures. |
| 1. Read and use familiar maps, plans and diagrams for work | 1. Items and places are in familiar maps, plans and diagrams as per SOPs 2. Common symbols and keys recognised in familiar maps, plans and diagrams as per SOPs 3. Understanding of direction and location demonstrated by describing the location of objects, or route to familiar places as per SOPs 4. Instructions to locate familiar objects or places are given and followed as per SOPs 5. Informal and some formal oral mathematical language and symbols are used as per SOPs |
| 1. Identify and describe common 2D and some 3D shapes for work | 1. ***Common 2D shapes and some common 3D shapes*** in familiar situations are identified and named as per job requirements 2. Common 2D shapes and designs are compared and classified as per SOPs 3. Informal and some formal language used to describe common two-dimensional shapes and some common three-dimensional shapes in accordance with workplace procedures. 4. Simple items used to draw or construct common 2D shapes as per workplace procedures. 5. Common 3D shapes matched to their 2D sketches or nets as per SOPs |
| 1. Construct simple tables and graphs for work using familiar data | 1. Common types of graphs are identified and named as per SOPs 2. Familiar data to be collected is determined in accordance with job specifications. 3. A method to collect data is selected in accordance with workplace procedures. 4. A small amount of simple familiar data is collected as per workplace procedures 5. One or two variables determined from the data collected as per SOPs. 6. Data ordered and collated as per standard operating procedures. 7. A table is constructed and data entered as per SOPs 8. Graphs are constructed using data from table as per job specifications 9. Results are promptly checked as per workplace procedures 10. Graph information related to work is reported or discussed using informal and some formal mathematical and general language as per workplace procedures |
| 1. Identify and interpret information in familiar tables, graphs and charts for work | 1. Simple tables are identified in familiar texts and contexts in accordance with workplace procedures 2. Title, headings, rows and columns located in familiar tables as per SOPs 3. Information and data in simple tables identified and interpreted as per workplace procedures. 4. Information is related in accordance with workplace tasks 5. Familiar graphs and charts are identified in familiar texts and contexts as per SOPs 6. Title, labels, axes, scale and key from familiar graphs and charts are located as per SOPs 7. Information and data in familiar graphs and charts are identified and interpreted as per job requirements 8. Information is related to relevant workplace tasks as per job requirements. |

**RANGE**

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.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Simple measuring equipment may include but not limited to: | * Rulers * Watches/clocks * Scales * Thermometers * AVO meter |
| 1. Common 2D shapes and common 3D shapes may include but not limited to: | * Round * Square * Rectangular * Triangle * Sphere * Cylinder * Cube * Polygons * Cuboids |

**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
* Logical thinking
* Computing
* Drawing of graphs
* Applying mathematical formulas
* Analytical

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Types of common shapes
* Differentiation between two dimensional shapes / objects
* Formulae for calculating area and volume
* Types and purpose of measuring instruments
* Units of measurement and abbreviations
* Fundamental operations (addition, subtraction, division, multiplication)
* Rounding techniques
* Types of fractions
* Different types of tables and graphs
* Meaning of graphs, such as increasing, decreasing, and constant value
* Preparation of basic data, tables & graphs

**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. Simple fractions, decimals and percentages are correctly identified and interpreted   2. Performed a limited range of calculations using the 4 operations   3. Performed calculations using familiar units of measurement   4. Recognised common symbols and keys in familiar maps, plans and diagrams   5. Constructed simple tables and graphs using familiar data   6. Identified and interpret information in familiar tables, graphs and charts |
| 1. Resource Implications | 1. Access to relevant workplace where assessment can take place 2. Appropriately simulated environment where assessment can take place 3. Materials relevant to the proposed activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   1. Written Test 2. Interview 3. Oral Questioning |
| 1. Context of Assessment | Competency may be assessed   1. On the job 2. Off the job 3. During industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE DIGITAL LITERACY

**UNIT CODE:** DA/OS/FM/BC/03/4/B

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate digital literacy in a working environment. It entails identifying computer software and hardware, applying security measures to data, hardware, software, applying computer software in solving task sand applying internet and email in communication at workplace.

**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. Identify computer software and hardware | * 1. ***Appropriate computer software*** is identified according to manufacturer’s specification   2. ***Appropriate computer hardware*** is identified according to manufacturer’s specification |
| 1. Apply security measures to data, hardware, software | * 1. ***Data security and privacy are classified*** in accordance with the technological situation   2. ***Security and control measures*** are applied in accordance with laws governing protection of ICT   3. Computer threats and crimes are detected as per information security management guidelines.   4. Protection against computer crimes is undertaken in accordance with laws governing protection of ICT |
| 1. Apply computer software in solving tasks | * 1. Basic word processing concepts are applied in resolving workplace tasks   2. Word processing utilities are applied in accordance with workplace procedures   3. Data is manipulated on worksheet in accordance with office procedures |
| 1. Apply internet and email in communication at workplace | * 1. Electronic mail is applied in workplace communication in accordance with office procedures   2. Office internet functions are defined and executed in accordance with office procedures   3. Network configuration and uses are determined in accordance with office operations procedures |

**RANGE**

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.

|  |  |
| --- | --- |
| **Range** | **Variable** |
| 1. Appropriate computer software may include but not limited to: | * Operating system * MS office * Web browser * Media players |
| 1. Appropriate computer hardware may include but not limited to: | * Computer Case * Monitor * Keyboard * Mouse * Hard Disk Drive * Motherboard * Video Card |
| 1. Data security and privacy may include but not limited to: | * Confidentiality * Cloud computing * Confidentiality * Cyber terrorism * Integrity -but-curious data serving |
| 1. Security and control measures may include but not limited to: | * Countermeasures and risk reduction * Cyber threat issues * Risk management |

**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:

* Analytical
* Interpretation
* Typing
* Communication
* Computing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Input and output devices
* Central processing Unit (CPU)
* Peripherals
* Storage Media
* Software concept
* Types of concept
* Function of computer software
* Data security and privacy
* Security threats and control measures
* Computer crimes
* Detection and protection of computer crimes
* Laws governing protection of ICT
* Word processing;
* Functions and concepts of word processing.
* Documents and tables creation and manipulations
* Mail merging
* Word processing utilities
* Spread sheet;
* Meaning, formulae, function and charts, uses, layout, data manipulation and application to cell
* Networking and Internet;
* Meaning, functions and uses of networking and internet.
* Electronic mail and world wide web
* Emerging trends and issues in ICT;
* Identify and apply emerging trends and issues in ICT
* Challenges posed by emerging trends and issues

**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. Identified input, output, CPU and storage media devices of computers in accordance to computer specification   2. Identified concepts, types and functions of computer software according to operation manual   3. Identified and controlled security threats   4. Detected and protected computer crimes   5. Applied word processing in office tasks   6. Prepared work sheet and applied data to the cells in accordance to workplace procedures   7. Used Electronic Mail for office communication as per workplace procedure   8. Applied internet and World Wide Web for office tasks in accordance with office procedures   9. Applied laws governing protection of ICT |
| 1. Resource Implications | * 1. Access to relevant workplace where assessment can take place   2. Appropriately simulated environment where assessment can take place   3. Materials relevant to the proposed activity or tasks |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Written tests   2. Practical assignment   3. Interview   4. Oral Questioning   5. Observation |
| 1. Context of Assessment | Competency may be assessed   1. On the job 2. Off the job 3. During industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

**DEMONSTRATE ENTREPRENEURIAL SKILLS**

**UNIT CODE:** DA/OS/FM/BC/04/4/B

**UNIT DESCRIPTION**

This unit covers the competencies required demonstrate entrepreneurial skills. It involvescreating and maintaining small scale business, establishing small scale business customer base, managing small scale business and growing/ expanding small scale business.

**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. Create and maintain small scale business | 1. Generation and evaluation of business ideas is undertaken in accordance with the existing procedure 2. Competencies are matched with business opportunities in accordance with business practices. 3. Procedure for starting a small business is identified as per the legal requirements 4. SWOT/ PESTEL analysis and or industrial survey is carried out according to office procedures 5. ***Business operations*** are monitored and controlled following established procedures. 6. Quality assurance measures are implemented in accordance with the business practices. 7. Good relations are maintained with staff/workers as per the workplace policies. 8. Policies and procedures on occupational safety and health and environmental concerns are constantly observed as per the workplace policies |
| 1. Establish small scale business customer base | 1. Good customer relations are maintained in accordance with office procedures 2. New customers and markets are identified, explored and reached out to according to the marketing plan 3. Promotions/Incentives are offered to loyal customers in accordance with office procedures 4. Additional products and services are evaluated and tried in accordance with marketing strategy 5. Customer record is maintained in accordance with office procedures |
| 1. Manage small scale business | 1. Enterprise is built up and sustained in line with judicious control of cash flows. 2. Profitability of enterprise is ensured as per the internal controls. 3. Unnecessary or lower-priority expenses and purchases are avoided as per the marketing strategy 4. Basic cost-benefit analysis are undertaken in accordance with office procedures 5. Basic financial management are undertaken in accordance with office procedures 6. Basic financial accounting in undertaken in accordance with office procedures 7. Business ***internal controls*** are implemented in accordance with office procedure 8. Setting business priorities and strategies is carried out according to office procedures 9. Preparation and interpretation of basic financial statements is undertaken in accordance with set procedures 10. Preparation of business plansfor small business is undertaken in accordance with ***business strategy*** 11. Business Social Responsibility is maintained in accordance with Standard Operations Procedures (SOP) |
| 1. Grow/ expand small scale business | 1. Prepared business growth strategy for small sale business in accordance with office procedures 2. Incorporated technology in small scale business growth in accordance with technological trends 3. Emerging issues and trends are considered in accordance with business growth strategy 4. Built audience interest in product/service according to growth strategy 5. Boosted cooperate communication according to business ***communication strategy*** |

**RANGE**

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

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Business operations may include but not limited to: | * Purchasing * Accounting/administrative * Work production/operations/sales * Marketing |
| 1. Internal control may include but not limited to: | * Accounting systems * Financial statements/reports * Cash management * Human resource management |
| 1. Business Strategy may include but not limited to: | * Management of wastages * Environmental Conservation |
| 1. Communication strategy may include but not limited to: | * Blue print of exchange of information * Technology and exchange of information |

**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:

* Marketing
* Advertising
* Basic bookkeeping
* Accounting
* Communication

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Generation and evaluation of business ideas
* Legal requirements for starting a small business
* SWOT/ PESTEL analysis
* Occupational Safety and Health
* Public relations concepts
* Business plan
* Business financing
* Marketing strategies
* Business management and control
* Production/ operation process
* Product promotion strategies
* Market and feasibility studies
* Business ethics
* Building customer relations
* Business models and strategies
* Types and categories of businesses
* Business internal controls
* Relevant national and local legislation and regulations
* Basic quality control and assurance concepts
* Building relations with customer and employees
* Building competitive advantage of the enterprise
* Business growth strategies

**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. Demonstrated entrepreneurial skills 2. Demonstrate competencies to create a small-scale business 3. Demonstrated ability to conceptualize and plan a micro/small business 4. Grew customer base for the small-scale business 5. Demonstrated ability to manage/operate a micro/small-scale business 6. Demonstrated competencies to grow a micro/small-scale business | |
| 1. Resource Implications | |  | | --- | | The following resources should be provided: |  1. Assessment location 2. Case studies on micro/small-scale enterprises 3. Assessment materials |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   |  |  | | --- | --- | | 1. Written tests 2. Observation 3. Oral questioning 4. Portfolio 5. Projects |  | |
| 1. Context of Assessment | Competency may be assessed   1. On the job 2. Off the job 3. During industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

**DEMONSTRATE EMPLOYABILITY SKILLS**

**UNIT CODE:** DA/OS/FM/BC/05/4/B

**UNIT DESCRIPTON**

This unit covers competencies required to demonstrate employability skills. It involves conducting self-management, demonstrating critical safe work habits, demonstrating workplace learning and workplace ethics.

**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. Conduct self-management | 1. Personal vision, mission and goals are formulated based on potential and in relation to organization objectives 2. Emotional intelligence is demonstrated as per workplace requirements. 3. Individual performance is evaluated and monitored according to the agreed targets. 4. Assertiveness is developed and maintained based on the requirements of the job. 5. Accountability and responsibility for own actions are demonstrated based on workplace instructions. 6. Self-esteem and a positive self-image are developed and maintained based on values. 7. Time management, attendance and punctuality are observed as per the organization policy. 8. Goals are managed as per the organization’s objective 9. Self-strengths and weaknesses are identified based on personal objectives |
| 1. Demonstrate critical safe work habits | 1. Stress is managed in accordance with workplace policy. 2. Punctuality and time consciousness is demonstrated in line with workplace policy. 3. Personal objectives are integrated with organization goals based on organization’s strategic plan. 4. ***Resources*** are utilized in accordance with workplace policy. 5. Work priorities are set in accordance to workplace goals and objectives. 6. Leisure time is recognized and utilized in line with personal objectives. 7. ***Drugs and substances of abuse*** are identified and avoided based on workplace policy. 8. HIV and AIDS prevention awareness is demonstrated in line with workplace policy. 9. Safety consciousness is demonstrated in the workplace based on organization safety policy. 10. ***Emerging issues*** are identified and dealt with in accordance with organization policy. |
| 1. Demonstrate workplace learning | * 1. Learning opportunities are sought and managed based on job requirement and organization policy.   2. Improvement in performance is demonstrated based on courses attended.   3. Application of learning is demonstrated in both technical and non-technical aspects based on requirements of the job   4. Time and effort is invested in learning new skills based on job requirements   5. Initiative is taken to create more effective and efficient processes and procedures in line with workplace policy.   6. New systems are developed and maintained in accordance with the requirements of the job.   7. Awareness of personal role in workplace ***innovation*** is demonstrated based on requirements of the job. |
| 1. Demonstrate workplace ethics | 1. Policies and guidelines are observed as per the workplace requirements 2. Self-worth and professionalism is exercised in line with personal goals and organizational policies 3. Code of conduct is observed as per the workplace requirements 4. Integrity is demonstrated as per legal requirement |

**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. Personal objectives may include but not limited to: | * Long term * Short term * Broad * Specific |
| 1. Feedback may include but not limited to: | * Verbal * Written * Informal * Formal |
| 1. Team may include but not limited to: | * Small work group * Staff in a section/department * Inter-agency group |
| 1. Drug and substance abuse may include but not limited to: | * Alcohol * Tobacco * Miraa * Over-the-counter drugs * Cocaine * Bhang * Glue |
| 1. Emerging issues may include but not limited to: | * Terrorism * Social media * National cohesion * Open offices |
| 1. Range of media for learning may include but not limited to: | * Mentoring * peer support and networking * IT and courses |
| 1. Innovation may include but not limited to: | * New ideas * Original ideas * Different ideas * Methods/procedures * Processes * New tools |

**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
* Interpersonal
* Critical thinking
* Observation
* Organizing
* Record keeping
* Problem solving
* Decision Making
* Resource utilization

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Work values and ethics
* Company policies
* Company operations, procedures and standards
* Occupational Health and safety procedures
* Fundamental rights at work
* Personal hygiene practices
* Workplace communication
* Concept of time
* Time management
* Decision making
* Types of resources
* Work planning
* Record keeping
* Workplace problems and how to deal with them
* Assertiveness
* Team work
* HIV and AIDS
* Drug and substance abuse
* Safe work habits
* Professional growth and development
* Technology in the workplace
* Emerging issues
  + Social media
  + Terrorism
  + National cohesion

###### 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. Conducted self-management   2. Demonstrated critical safe work habits   3. Demonstrated workplace learning   4. Demonstrated workplace ethics |
| 1. Resource Implications | The following resources should be provided:   1. Access to relevant workplace where assessment can take place 2. Appropriately simulated environment where assessment can take place |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   1. Oral questioning 2. Portfolio of evidence 3. Third Party Reports 4. Written tests |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE ENVIRONMENTAL LITERACY

**UNIT CODE:** DA/OS/FM/BC/06/4/B

**UNIT DESCRIPTION**

# This unit specifies the competencies required to demonstrate environmental literacy. It involves controlling environmental hazard, controlling environmental pollution, demonstrating sustainable resource use and evaluating current practices in relation to resource usage.

**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. Control environmental hazard | * 1. Storage methods for environmentally hazardous materials are followed according to environmental regulations and OSHS.   2. Disposal methods of hazardous wastes are followed according to environmental regulations and OSHS.   3. ***PPE*** is used according to OSHS. |
| 1. Control environmental pollution | * 1. ***Environmental pollution*** ***control measures*** are compiled following standard protocol.   2. Procedures for solid waste management are observed according Environmental Management and Coordination Act 1999   3. Methods for minimizing noise pollution complied following environmental regulations. |
| 1. Demonstrate sustainable use of resource s | * 1. Methods for minimizing wastage are complied with.   2. ***Waste management procedures*** are employed following principles of 3Rs (Reduce, Reuse, Recycle)   3. Methods for economizing or reducing resource consumption are practiced. |
| 1. Evaluate current practices in relation to resource usage | * 1. Information on resource efficiency ***systems and procedures*** are collected and provided as per work groups/sector   2. ***Current resource usage*** is measured and recorded as per work group/sector   3. Current purchasing strategies are analyzed and recorded according to industry procedures.   4. Current work processes to access information and data is analyzed following enterprise protocol. |
| 1. 5. Identify environmental legislations/conventions for environmental concerns | 1. Environmental legislations/conventions and local ordinances are identified according to the different environmental aspects/impact 2. Industrial standard/environmental practices are described according to the different environmental concerns |

**RANGE**

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.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. PPE may include but are not limited to: | * Masks * Gloves * Goggles * Safety hat * Overall * Hearing protector * Safety boots |
| 1. Environmental pollution control measures may include but are not limited to: | * Methods for minimizing or stopping spread and ingestion of airborne particles * Methods for minimizing or stopping spread and inhaling gases and fumes * Methods for minimizing or stopping spread and ingestion of liquid wastes |
| 1. Waste management procedures may include but are not limited to: | * Sorting * Storing of items * Recycling of items * Disposal of items * Handling * Transport |
| 1. Current resources usage may include but are not limited to: | * Electric * Water * Fuel * Telecommunications * Supplies * Materials |

**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
* Recording
* Analytical
* Monitoring
* Writing
* Communication

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Storage methods of environmentally hazardous materials
* Disposal methods of hazardous wastes
* Usage of PPE Environmental regulations
* OSHS
* Types of pollution
* Environmental pollution control measures
* Different solid wastes
* Solid waste management
* Different noise pollution
* Methods of minimizing noise pollution
* Solid Waste Act
* Methods of minimizing wastage
* Waste management procedures
* Economizing of resource consumption
* Principle of 3Rs
* Types of resources
* Techniques in measuring current usage of resources
* Calculating current usage of resources
* Types of workplace environmental hazards
* Environmental regulations
* Environmental regulations applying to the enterprise.
* Procedures for assessing compliance with environmental regulations.
* Collection of information on environmental and resource efficiency systems and procedures,
* Measurement and recording of current resource usage
* Analysis and recording of current purchasing strategies.
* Analysis current work processes to access information and data Analysis of data and information

**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. Controlled environmental hazards 2. Controlled environmental pollution 3. Demonstrated sustainable resource use 4. Evaluated current practices in relation to resource usage |
| 1. Resource Implications | The following resources should be provided:   * 1. Workplace with storage facilities   2. Tools, materials and equipment relevant to the tasks (e.g. cleaning tools, cleaning materials, trash bags, etc.)   3. PPEs   4. Manuals and references   5. Legislation, policies, procedures, protocols and local ordinances relating to environmental protection   6. Case studies/scenarios relating to environmental Protection |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   1. Observation 2. Oral questioning 3. Written tests 4. Third party reports 5. Portfolio |
| 1. Context of Assessment | Competency may be assessed   1. On the job 2. Off the job 3. During industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

**DEMONSTRATE OCUPATIONAL SAFETY AND HEALTH PRACTICES**

**UNIT CODE:** DA/OS/FM/BC/07/4/B

**UNIT DESCRIPTION**

This unit specifies the competencies required to practice safety and health and comply with OSH requirements relevant to work. It involves observing workplace procedures for hazards and risk prevention and participating in arrangements for workplace safety and health maintenance.

**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. Adhere to workplace procedures for hazards and risk prevention | 1. Arrangement of work area and items in accordance with   workplace procedures requirements   1. Work standards and procedures are followed based on instructions 2. ***Prevention and control measures*** are applied based on instructions |
| 1. Participate in arrangements for workplace safety and health maintenance | 1. Orientations on ***OSH requirements and regulations*** is undertaken in line with policy. 2. Feedback on occupational health and safety are provided as per workplace instructions. 3. Workplace procedures for reporting hazards, incidents, injuries and sickness are adhered to as per workplace policy. 4. ***OSH-related training needs*** are identified and proposed as per workplace policy. |

**RANGE**

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.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Prevention and control measures may include but are not limited to: | * Eliminate the hazard * Isolate the hazard * Substitute the hazard with a safer alternative * Use administrative controls to reduce the risk * Use engineering controls to reduce the risk * Use personal protective equipment * Safety, Health and Work Environment Evaluation * Periodic and/or special medical examinations of workers |
| 1. Safety gears /PPE (Personal Protective Equipment’s) may include but are not limited to: | * Arm/Hand guard, gloves * Eye protection (goggles, shield) * Hearing protection (ear muffs, ear plugs) * Hair Net/cap/bonnet * Hard hat * Face protection (mask, shield) * Apron/Gown/coverall/jump suit * Anti-static suits * High-visibility reflective vest |
| 1. Incidents and emergencies may include but are not limited to: | * Chemical spills * Equipment/vehicle accidents * Explosion * Fire * Gas leak * Injury to personnel * Structural collapse * Toxic and/or flammable vapors emission. |
| 1. OSH requirements / regulations may include but are not limited to: | * Building code * Permit to Operate |
| 1. OSH-related trainings may include but are not limited to: | * Safety Orientations relevant to tasks * Safe and Correct Operation of Tools and Equipment * Health Orientations/trainings * Prevention and Control of OSH Hazards in the workplace * Chemical Handling * Safety Trainings * Prevention and Control of Work-related Injuries and Illness * Basic First-aid Trainings * Emergency Response Trainings * Trainings on use of fire-extinguisher |

**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
* Knowledge management
* Collaborating
* Interpersonal
* Troubleshooting
* Critical thinking
* Observation

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* General OSH principles and legislations
* Principles of good housekeeping (5S)
* Company/workplace policies/ guidelines
* Standards and safety requirements of work process and procedures
* Standard Workplace emergency plan and procedures
* Safety and health requirements of tasks
* Workplace guidelines on providing feedback on OSH and security concerns
* OSH regulations
* Hazard control procedures
* OSH trainings relevant to work

**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 | 1. Assessment requires evidence that the candidate: 2. Arranged work area and items in accordance with 3. workplace procedures requirements 4. Followed work standards and procedures based on instructions 5. Applied ***Prevention and control measures*** based on instructions 6. Undertook orientations on ***OSH requirements and regulations*** in line with policy. 7. Provided feedback on occupational health and safety as per workplace instructions. 8. Adhered to workplace procedures for reporting hazards, incidents, injuries and sickness to as per workplace policy. 9. Identified and proposed ***OSH-related training needs*** as per workplace policy. |
| 1. Resource Implications | The following resources should be provided:   1. Access to relevant workplace where assessment can take place 2. Appropriately simulated environment where assessment can take place |
| 1. Methods of Assessment | Competency in this unit may be assessed through:   1. Oral questioning 2. Portfolio of evidence 3. Third Party Reports 4. Written tests |
| 1. Context of Assessment | Competency may be assessed   1. On-the-job 2. Off-the –job 3. During Industrial attachment |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

## 

# CORE UNITS OF COMPETENCY

## DEVELOP DAIRY FARM STRUCTURES

**UNIT CODE:** DA/OS/FM/CR/01/4/B

**UNIT DESCRIPTION**

This unit specifies the competencies required to develop dairy farm structures. It involves applying food safety measures to develop dairy farm structures, preparing to develop dairy farm structures, developing dairy farm structures, evaluating construction of dairy farm structures, and completing 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. Apply food safety measures to develop dairy farm structures | 1. Hazard identification is conducted based on type (s) and source (s) 2. Hazard control or treatment is applied based on prerequisite programs, operational prerequisite programs and HACCP plan. 3. Risk is documented as per communication policies |
| 1. Prepare to develop dairy farm structures | * 1. ***Construction materials and supplies*** are prepared in accordance with job requirements.   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. Structure layout is measured and pegged as per approved design.   3. Foundation is laid based on the type of structure.   4. Walls are erected based on the design and type of structure.   5. Roof is laid based on the design and type of structure.   6. Fittings are put in place based on design, type of structure and requirements. |
| 1. Evaluate construction of dairy farm structures | 1. Faults in dairy farm structure are detected, reported and repaired based on standard operating procedures. 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.

|  |  |  |
| --- | --- | --- |
| **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 **MUST** be provided:   * 1. Assessment location / workplace   2. Personal Protective Equipment and Apparel |
| 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. |

## PRODUCE DAIRY FORAGE

**UNIT CODE:** DA/OS/FM/CR/02/4/B

**UNIT DESCRIPTION**

This unit specifies the competencies required to produce dairy forage. It involves applying food safety measures to produce dairy forage, 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. Apply food safety measures to produce dairy forage | 1. Hazard identification is conducted based on type (s) and source (s) 2. Hazard control or treatment is applied based on prerequisite programs, operational prerequisite programs and HACCP plan. 3. Risk is documented as per communication policies |
| 1. Prepare to produce dairy forage | * 1. ***Forage*** planting land is prepared using correct ***farm tools, implements and machinery*** in accordance with the planting material   2. Soil for analysis is sampled as per sampling procedure   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   6. Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures |
| 1. Produce dairy forage | * 1. Forage planting materials are planted as per GAP and livestock production manual   2. Planted materials are gapped as per spacing requirements   3. Weeds in forage are controlled as per GAP and the Pest Control Products Act (Cap 346)   4. Pests and diseases in forage are controlled following GAP and the Pest Control Products Act (Cap 346)   5. 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.   6. Dairy forage is harvested in accordance with the Livestock Production Manual |
| 1. Evaluate dairy forage production | * 1. Quality and safety of forage is checked based on Livestock Production Manual   2. Quantity of forage produced is checked based on livestock production manual and farm production projections   3. Errors are detected, reported and rectified based on workplace policy |
| 1. Complete dairy forage production | * 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.   2. Dairy forage is stored as per type of conserved forage and work instructions based on the code of practice for the animal feed industry and Livestock Production Manual.   3. Surplus materials and supplies are stored as per manufacturer’s instructions.   4. 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 must be provided:   1. Assessment location / workplace 2. Personal Protective Equipment and Apparel |
| 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. |

## BREED DAIRY ANIMALS

**UNIT CODE:** DA/OS/FM/CR/03/4/B

**UNIT DESCRIPTION**

This unit specifies the competencies required to breed dairy animals. It involves applying food safety measures to breed dairy animals, 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. Apply food safety measures to breed dairy animals | 1. Hazard identification is conducted based on type (s) and source (s) 2. Hazard control or treatment is applied based on prerequisite programs, operational prerequisite programs and HACCP plan. 3. Risk is documented as per communication policies |
| 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. Female animals on heat are detected based on LPM   5. Occupational safety and health procedures are adhered to according to work place procedures   6. Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures |
| 1. Breed dairy animals | * 1. Dairy animals on heat are ***served*** in accordance with the LPM   2. Parturating animals are provided care based on the LPM |
| 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 must be provided:   * 1. Assessment location / workplace   2. Personal Protective Equipment and Apparel |
| 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:** DA/OS/FM/CR/04/4/B

**UNIT DESCRIPTION**

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

**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. Apply food safety measures to formulate dairy feed | 1. Hazard identification is conducted based on type (s) and source (s) 2. Hazard control or treatment is applied based on prerequisite programs, operational prerequisite programs and HACCP plan. 3. Risk is documented as per communication policies |
| 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. Feed formulation ***ingredients*** are assembled based on feed formulae   4. Ingredients are sampled for laboratory analysis according to ***sampling procedures***   5. Packaging materials are labeled as per ***feed manufacturing guidelines***   6. Occupational safety and health procedures are adhered to according to work place procedures and Public Health Act Cap 254.   7. Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures |
| 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 must be provided:   * 1. Assessment location / workplace   2. Personal Protective Equipment and Apparel |
| 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. |

## FEED DAIRY ANIMALS

**UNIT CODE:** DA/OS/FM/CR/05/4/B

**UNIT DESCRIPTION**

This unit specifies the competencies required to feed dairy animals. It involves applying food safety measures to feed dairy animals, 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. Apply food safety measures to feed dairy animals | 1. Hazard identification is conducted based on type (s) and source (s) 2. Hazard control or treatment is applied based on prerequisite programs, operational prerequisite programs and HACCP plan. 3. Risk is documented as per communication policies |
| 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. Required ***tools*** and ***equipment*** are identified and assembled based on the requirements of the job   4. PPEs are identified and gathered based on requirements of the job.   5. Occupational safety and health procedures are adhered to according to work place procedures   6. 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 classes correctly 3. Processed feed ingredients in accordance with the livestock production manual 4. Sampled Feed ingredients and rations 5. Evaluated feed intake based on palatability, form and physiological status 6. Provided required quality and quantity of feed ration to meet animal’s daily requirements 7. Recorded dairy animals feeding regimes 8. Determined amount of dairy animal’s feed intake 9. Observed occupational safety and health measures in the working environment 10. Observed laid down environmental protection measures at the work place 11. Documented dairy animal feeding and food safety records |
| 1. Resource Implications | The following resources must be provided:   1. Assessment location / workplace 2. Personal Protective Equipment and Apparel |
| 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:** DA/OS/FM/CR/06/4/B

**UNIT DESCRIPTION**

This unit specifies the competencies required to milk dairy animals. It involves applying food safety measures to milk dairy animals, 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. Apply food safety measures to milk dairy animals | 1. Hazard identification is conducted based on type (s) and source (s) 2. Hazard control or treatment is applied based on prerequisite programs, operational prerequisite programs and HACCP plan. 3. Risk is documented as per communication policies |
| 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.   6. Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures |
| 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. Reusable materials and supplies are stored as per manufacturer’s instructions manual, workplace policy and the code of hygienic practice for milk and milk products.   5. 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. 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 must be provided:   1. Assessment location / workplace 2. Personal Protective Equipment and Apparel |
| 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:** DA/OS/FM/CR/07/4/B

**UNIT DESCRIPTION**

This unit specifies the competencies required to rear dairy young stock. It involves applying food safety measures to rear dairy young stock, 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. Apply food safety measures to rear dairy young stock | 1. Hazard identification is conducted based on type (s) and source (s) 2. Hazard control or treatment is applied based on prerequisite programs, operational prerequisite programs and HACCP plan. 3. Risk is documented as per communication policies |
| 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. Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures 6. Additional nutrition is provided to dams within the last trimester of gestation livestock production manual (LPM) 7. Female animals showing signs of imminent parturition are identified and separated according to the livestock production manual 8. Dams with difficult parturition are identified and assisted according to the livestock production manual |
| 1. Rear dairy young stock | 1. ***Neonates*** are handled at birth according to instructions in the LPM 2. Neonate is fed adequate amounts of colostrum according to the LPM 3. Orphaned neonates are foster-fed according to the LM 4. Young stock is ***identified*** using suitable method in accordance with LPM, animal welfare regulations and work place policy 5. Young stock is housed based on production system, prevailing climatic conditions and age within LPM standards 6. Young stock is introduced to roughage feeding in accordance with LPM 7. Young stock is debudded and extra mammary teats removed in accordance with animal welfare regulations and work place policy 8. 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. Reusable materials and supplies are stored as per manufacturer’s instructions manual and workplace policy. 5. 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. 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 must be provided:   1. Assessment location / workplace 2. Personal Protective Equipment and Apparel |
| 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. |

## MAINTAIN DAIRY HERD HEALTH

**UNIT CODE:** DA/OS/FM/CR/08/4/B

**UNIT DESCRIPTION**

This unit specifies the competencies required to maintain dairy herd health. It involves applying food safety measures to maintain dairy herd health, 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**

|  |  |
| --- | --- |
| **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. Apply food safety measures to maintain dairy herd health | 1. Hazard identification is conducted based on type(s) and source (s) 2. Hazard control or treatment is applied based on prerequisite programs, operational prerequisite programs and HACCP plan. 3. Risk is documented as per communication policies |
| 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 5. Environmental protection measures are observed according to ***environment protection regulations*** and 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. Reusable materials and supplies are stored as per manufacturer’s instructions 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. 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.

|  |  |
| --- | --- |
| 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 must be provided:   1. Assessment location / workplace 2. Personal Protective Equipment and Apparel |
| 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. |