

TRAINING REGULATIONS



ANIMAL PRODUCTION (Ruminants) NC II

AGRICULTURE AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
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AGRI-FISHERY SECTOR

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TRAINING REGULATIONS FOR ANIMAL PRODUCTION (RUMINANTS) NC II

Section 1 ANIMAL PRODUCTION (RUMINANTS) NC II QUALIFICATION

The **ANIMAL PRODUCTION (RUMINANTS) NC II** Qualification consists of competencies that a person must achieve to raise ruminants for production of milk, meat and breeder. It comprises of maintenance of housing, farm implements and surrounding area, providing forage, performing breeding of ruminants, raising of dairy animals and raising of meat-type animals. The ruminants include both the large (cattle and buffalo) and small (goat and sheep) ruminants.

This Qualification is packaged from the competency map of the Agri-Fishery Sector as shown in Annex A.

The units of competency comprising this qualification includes the following:

Code	BASIC COMPETENCIES
500311105	Participate in workplace communication
500311106	Work in a team environment
500311107	Practice career professionalism
500311108	Practice occupational health and safety procedures

Code	COMMON COMPETENCIES
AFF321201	Apply safety measures in farm operations
AFF321202	Use farm tools and equipment
AFF321203	Perform estimation and calculations
AFF321205	Process farm wastes

Code	CORE COMPETENCIES
AFF621901	Maintain housing, farm implements and surrounding area
AFF621902	Provide forage
AFF621903	Perform breeding of ruminants
AFF621904	Raise dairy animals
AFF621905	Raise meat-type animals

A person who has achieved this Qualification is competent to be:

- **Livestock Raiser/Farmer**
- **Cattle Farm Worker (Specialist)**
- **Goat raiser/farmer**
- **Dairy Raiser/Farmer**

SECTION 2

COMPETENCY STANDARDS

These guidelines are set to provide the Technical Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for **ANIMAL PRODUCTION (RUMINANTS) NC II**.

BASIC COMPETENCIES

UNIT OF COMPETENCY : PARTICIPATE IN WORKPLACE COMMUNICATION

UNIT CODE : 500311105

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from appropriate sources 1.2 Effective questioning , active listening and speaking skills are used to gather and convey information 1.3 Appropriate medium is used to transfer information and ideas 1.4 Appropriate non- verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace procedures for the location and storage of information are used 1.7 Personal interaction is carried out clearly and concisely
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time 2.2 Own opinions are clearly expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established protocols 2.4 Workplace interactions are conducted in a courteous manner 2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to 2.6 Meetings outcomes are interpreted and implemented
3. Complete relevant work related documents	3.1 Range of forms relating to conditions of employment are completed accurately and legibly 3.2 Workplace data is recorded on standard workplace forms and documents 3.3 Basic mathematical processes are used for routine calculations 3.4 Errors in recording information on forms/ documents are identified and properly acted upon 3.5 Reporting requirements to supervisor are completed according to organizational guidelines

RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	1.1. Team members 1.2. Suppliers 1.3. Trade personnel 1.4. Local government 1.5. Industry bodies
2. Medium	2.1. Memorandum 2.2. Circular 2.3. Notice 2.4. Information discussion 2.5. Follow-up or verbal instructions 2.6. Face to face communication
3. Storage	3.1. Manual filing system 3.2. Computer-based filing system
4. Forms	4.1. Personnel forms, telephone message forms, safety reports
5. Workplace interactions	5.1. Face to face 5.2. Telephone 5.3. Electronic and two way radio 5.4. Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
6. Protocols	6.1. Observing meeting 6.2. Compliance with meeting decisions 6.3. Obeying meeting instructions

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none"> 1.1. Prepared written communication following standard format of the organization 1.2. Accessed information using communication equipment 1.3. Made use of relevant terms as an aid to transfer information effectively 1.4. Conveyed information effectively adopting the formal or informal communication
<p>2. Underpinning Knowledge and Attitudes</p>	<ol style="list-style-type: none"> 2.1. Effective communication 2.2. Different modes of communication 2.3. Written communication 2.4. Organizational policies 2.5. Communication procedures and systems 2.6. Technology relevant to the enterprise and the individual's work responsibilities
<p>3. Underpinning Skills</p>	<ol style="list-style-type: none"> 3.1. Follow simple spoken language 3.2. Perform routine workplace duties following simple written notices 3.3. Participate in workplace meetings and discussions 3.4. Complete work related documents 3.5. Estimate, calculate and record routine workplace measures 3.6. Basic mathematical processes of addition, subtraction, division and multiplication 3.7. Ability to relate to people of social range in the workplace 3.8. Gather and provide information in response to workplace Requirements
<p>4. Resource Implications</p>	<ol style="list-style-type: none"> 4.1. Fax machine 4.2. Telephone 4.3. Writing materials 4.4. Internet
<p>5. Methods of Assessment</p>	<ol style="list-style-type: none"> 5.1. Direct Observation 5.2. Oral interview and written test
<p>6. Context of Assessment</p>	<ol style="list-style-type: none"> 6.1. Competency may be assessed individually in the actual workplace or through accredited institution

UNIT OF COMPETENCY: WORK IN TEAM ENVIRONMENT

UNIT CODE : 500311106

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Describe team role and scope	1.1. The <i>role and objective of the team</i> is identified from available <i>sources of information</i> 1.2. Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources
2. Identify own role and responsibility within team	2.1. Individual role and responsibilities within the team environment are identified 2.2. Roles and responsibility of other team members are identified and recognized 2.3. Reporting relationships within team and external to team are identified
3. Work as a team member	3.1. Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives 3.2. Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and <i>workplace context</i> 3.3. Observed protocols in reporting using standard operating procedures 3.4. Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	1.1. Work activities in a team environment with enterprise or specific sector 1.2. Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	2.1. Standard operating and/or other workplace procedures 2.2. Job procedures 2.3. Machine/equipment manufacturer's specifications and instructions 2.4. Organizational or external personnel 2.5. Client/supplier instructions 2.6. Quality standards 2.7. OHS and environmental standards
3. Workplace context	3.1. Work procedures and practices 3.2. Conditions of work environments 3.3. Legislation and industrial agreements 3.4. Standard work practice including the storage, safe handling and disposal of chemicals 3.5. Safety, environmental, housekeeping and quality guidelines

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1. Operated in a team to complete workplace activity 1.2. Worked effectively with others 1.3. Conveyed information in written or oral form 1.4. Selected and used appropriate workplace language 1.5. Followed designated work plan for the job 1.6. Reported outcomes
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1. Communication process 2.2. Team structure 2.3. Team roles 2.4. Group planning and decision making
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1. Communicate appropriately, consistent with the culture of the workplace
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1. Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2. Materials relevant to the proposed activity or tasks
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1. Observation of the individual member in relation to the work activities of the group 5.2. Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 5.3. Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> 6.1. Competency may be assessed in workplace or in a simulated workplace setting 6.2. Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY: PRACTICE CAREER PROFESSIONALISM

UNIT CODE : 500311107

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Integrate personal objectives with organizational goals	1.1 Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2 Intra- and interpersonal relationships is are maintained in the course of managing oneself based on performance evaluation 1.3 Commitment to the organization and its goal is demonstrated in the performance of duties
1. Set and meet work priorities	2.1 Competing demands are prioritized to achieve personal, team and organizational goals and objectives. 2.2 Resources are utilized efficiently and effectively to manage work priorities and commitments 2.3 Practices along economic use and maintenance of equipment and facilities are followed as per established procedures
2. Maintain professional growth and development	3.1 Trainings and career opportunities are identified and availed of based on job requirements 3.2 Recognitions are -sought/received and demonstrated as proof of career advancement 3.3 Licenses and/or certifications relevant to job and career are obtained and renewed

RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Tests
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. Trainings and career opportunities	3.1 Participation in training programs 3.1.1 Technical 3.1.2 Supervisory 3.1.3 Managerial 3.1.4 Continuing Education 3.2 Serving as Resource Persons in conferences and workshops
4. Recognitions	4.1 Recommendations 4.2 Citations 4.3 Certificate of Appreciations 4.4 Commendations 4.5 Awards 4.6 Tangible and Intangible Rewards
5. Licenses and/or certifications	5.1 National Certificates 5.2 Certificate of Competency 5.3 Support Level Licenses 5.4 Professional Licenses

EVIDENCE GUIDE

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Attained job targets within key result areas (KRAs) 1.2 Maintained intra - and interpersonal relationship in the course of managing oneself based on performance evaluation 1.3 Completed trainings and career opportunities which are based on the requirements of the industries 1.4 Acquired and maintained licenses and/or certifications according to the requirement of the qualification
2. Underpinning Knowledge and Values	<ul style="list-style-type: none"> 2.1 Work values and ethics (Code of Conduct, Code of Ethics, etc.) 2.2 Company policies 2.3 Company operations, procedures and standards 2.4 Fundamental rights at work including gender sensitivity 2.5 Personal hygiene practices
3. Underpinning Skills	<ul style="list-style-type: none"> 3.1 Appropriate practice of personal hygiene 3.2 Intra and Interpersonal skills 3.3 Communication skills
4. Resource Implications	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace or assessment location 4.2 Case studies/scenarios
5. Methods of Assessment	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Portfolio Assessment 5.2 Interview 5.3 Simulation/Role-plays 5.4 Observation 5.5 Third Party Reports 5.6 Exams and Tests
6. Context of Assessment	<ul style="list-style-type: none"> 6.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : PRACTICE OCCUPATIONAL HEALTH AND SAFETY PROCEDURES

UNIT CODE : 500311108

UNIT DESCRIPTOR : This unit covers the outcomes required to comply with regulatory and organizational requirements for occupational health and safety.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify hazards and risks	1.1 Safety regulations and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures 1.2 Hazards/risks in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures. 1.3 Contingency measures during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures.
2. Evaluate hazards and risks	2.1 Terms of maximum tolerable limits which when exceeded will result in harm or damage are identified based on threshold limit values (TLV) 2.2 Effects of the hazards are determined 2.3 OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation
3. Control hazards and risks	3.1 Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed 3.2 Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies 3.3 Personal protective equipment (PPE) is correctly used in accordance with organization OHS procedures and practices 3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol.

4. Maintain OHS awareness	4.1 Emergency-related drills and trainings are participated in as per established organization guidelines and procedures 4.2 OHS personal records are completed and updated in accordance with workplace requirements.
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Safety regulations	May include but are not limited to: <ul style="list-style-type: none"> 1.1 Clean Air Act 1.2 Building code 1.3 National Electrical and Fire Safety Codes 1.4 Waste management statutes and rules 1.5 Philippine Occupational Safety and Health Standards 1.6 DOLE regulations on safety legal requirements 1.7 ECC regulations
2. Hazards/Risks	May include but are not limited to: <ul style="list-style-type: none"> 2.1 Physical hazards – impact, illumination, pressure, noise, vibration, temperature, radiation 2.2 Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects 2.3 Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors 2.4 Ergonomics <ul style="list-style-type: none"> 2.4.1 Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles 2.4.2 Physiological factors – monotony, personal relationship, work out cycle
3. Contingency measures	May include but are not limited to: <ul style="list-style-type: none"> 3.1 Evacuation 3.2 Isolation 3.3 Decontamination 3.4 (Calling designed) emergency personnel
4. PPE	May include but are not limited to: <ul style="list-style-type: none"> 4.1 Mask 4.2 Gloves 4.3 Goggles 4.4 Hair Net/cap/bonnet 4.5 Face mask/shield 4.6 Ear muffs 4.7 Apron/Gown/coverall/jump suit 4.8 Anti-static suits

VARIABLE	RANGE
5. Emergency-related drills and training	5.1 Fire drill 5.2 Earthquake drill 5.3 Basic life support/CPR 5.4 First aid 5.5 Spillage control 5.6 Decontamination of chemical and toxic 5.7 Disaster preparedness/management
6. OHS personal records	6.1 Medical/Health records 6.2 Incident reports 6.3 Accident reports 6.4 OHS-related training completed

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Explained clearly established workplace safety and hazard control practices and procedures 1.2 Identified hazards/risks in the workplace and its corresponding indicators in accordance with company procedures 1.3 Recognized contingency measures during workplace accidents, fire and other emergencies 1.4 Identified terms of maximum tolerable limits based on threshold limit value- TLV. 1.5 Followed Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace 1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices 1.7 Completed and updated OHS personal records in accordance with workplace requirements
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 OHS procedures and practices and regulations 2.2 PPE types and uses 2.3 Personal hygiene practices 2.4 Hazards/risks identification and control 2.5 Threshold Limit Value -TLV 2.6 OHS indicators 2.7 Organization safety and health protocol 2.8 Safety consciousness 2.9 Health consciousness
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Practice of personal hygiene 3.2 Hazards/risks identification and control skills 3.3 Interpersonal skills 3.4 Communication skills
<p>3. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace or assessment location 4.2 OHS personal records 4.3 PPE 4.4 Health records
<p>4. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Portfolio Assessment 5.2 Interview 5.3 Case Study/Situation
<p>5. Context for Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed in the work place or in a simulated work place setting

COMMON COMPETENCIES

UNIT TITLE : **APPLY SAFETY MEASURES IN FARM OPERATIONS**

UNIT CODE : **AFF321201**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform safety measures effectively and efficiently. It includes identifying areas, tools, materials, time and place in performing safety measures.

ELEMENT	PERFORMANCE CRITERIA
1. Determine areas of concern for safety measures	1.1 Work tasks are identified in line with farm operations 1.2 Place for safety measures are determined in line with farm operations 1.3 Time for safety measures are determined in line with farm operations 1.4 Appropriate tools, materials and outfits are prepared in line with job requirements
2. Apply appropriate safety measures	2.1 Tools and materials are used according to specifications and procedures 2.2 Outfits are worn according to farm requirements 2.3 Effectivity/shelf life/expiration of materials are strictly observed 2.4 Emergency procedures are known and followed to ensure a safework requirement 2.5 Hazards in the workplace are identified and reported in line with farm guidelines
3. Safekeep/dispose of tools, materials and outfit	3.1 Used tools and outfit are cleaned after use and stored in designated areas. 3.2 Unused materials are properly labeled and stored according to manufacturers recommendation and farm requirements. 3.3 Waste materials are disposed according to manufacturers, government and farm requirements.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	Work task may be selected from any of the subsectors: 1.1 Aquaculture 1.2 Animal Production 1.3 Crop Production 1.4 Post-harvest 1.5 Agri-marketing 1.6 Farm Equipment
2. Place	2.1 Animal pens, cages, barns 2.2 Fish ponds, cages 2.3 Stock room/storage areas/warehouse 2.4 Field/farm/orchard
3. Time	3.1 Vaccination and medication period 3.2 Fertilizer and pesticides application 3.3 Feed mixing and feeding 3.4 Harvesting and hauling 3.5 Cleaning, sanitizing and disinfecting 3.6 Dressing, butchering and castration
4. Tools, materials and outfits	4.1 Tools 4.1.1 Wrenches 4.1.2 Screw driver 4.1.3 Pliers 4.2 Materials 4.2.1 Bottles 4.2.2 Plastic 4.2.3 Bags 4.2.4 Syringe 4.3 Outfit 4.3.1 Masks 4.3.2 Gloves 4.3.3 Boots 4.3.4 Overall coats 4.3.5 Hat 4.3.6 Eye goggles
5. Emergency procedures	5.1 Location of first aid kit 5.2 Evacuation 5.3 Agencies contract 5.4 Farm emergency procedures
6. Waste materials	6.1 Animal manure 6.2 Waste water 6.3 Syringes 6.4 Unused farm chemicals e.g. pesticides, chemicals, fertilizers 6.5 Expired reagents 6.6 Dead animals
7. Hazards	7.1 Chemical 7.2 Electrical 7.3 Falls

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined areas of concern for safety measures 1.2 Applied appropriate safety measures according to industry requirements 1.3 Prepared tools, materials and outfit needed 1.4 Performed proper disposal of used materials 1.5 Safekeep/cleaned tools, materials and outfit in designated facilities
<p>2. Required Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1 Safety Practices <ul style="list-style-type: none"> 2.1.1 Implementation of regulatory controls and policies relative to treatment of area and application of chemicals 2.1.2 Proper disposal of waste materials 2.2 Codes and Regulations <ul style="list-style-type: none"> 2.2.1 Compliance to health program of DOH and DENR 2.2.2 Hazard identification 2.2.3 Emergency procedures 2.3 Tools & Equipment: Uses and Specification <ul style="list-style-type: none"> 2.3.1 Masks, gloves, boots, overall coats for health protection 2.4 Maintenance <ul style="list-style-type: none"> 2.4.1 Regular check-up and repair of tools, materials and outfit before and after use
<p>3. Required Skills</p>	<ul style="list-style-type: none"> 3.1 Ability to recognize effective tools, materials and outfit 3.2 Ready skills required to read labels, manuals and other basic safety information
<p>4. Resource Implications</p>	<ul style="list-style-type: none"> 4.1. Farm location 4.2. Tools, equipment and outfits appropriate in applying safety measures
<p>5. Method of Assessment</p>	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 5.1. Practical demonstration 5.2. Third Party Report
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT TITLE : **USE FARM TOOLS AND EQUIPMENT**

UNIT CODE : **AFF321202**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to use farm tools and equipment. It includes selection, operation and preventive maintenance of farm tools and equipment.

ELEMENT	PERFORMANCE CRITERIA
1. Select and use farm tools	1.1 Identified appropriate farm tools according to requirement/use 1.2 Farm tools are checked for faults and defective tools reported in accordance with farm procedures 1.3 Appropriate tools and equipment are safely used according to job requirements and manufacturers conditions
2. Select and operate farm equipment	2.1 Identify appropriate farm equipment 2.2 Instructional manual of the farm tools and equipment are carefully read prior to operation 2.3 Pre-operation check-up is conducted in line with manufacturers manual 2.4 Faults in farm equipment are identified and reported in line with farm procedures 2.5 Farm equipment used according to its function 2.6 Followed safety procedures
3. Perform preventive maintenance	3.1 Tools and equipment are cleaned immediately after use in line with farm procedures 3.2 Routine check-up and maintenance are performed 3.3 Tools and equipment are stored in designated areas in line with farm procedures.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	2.1 Sickle 2.2 Cutters 2.3 Weighing scales 2.4 Hand tools 2.5 Measuring tools 2.6 Garden tools
3. Pre-operation check-up	3.1 Tires 3.2 Brake fluid 3.3 Fuel 3.4 Water 3.5 Oil 3.6 Lubricants 3.7 Battery

EVIDENCE GUIDE

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Correctly identified appropriate farm tools and equipment 1.2 Operated farm equipments according to manual specification 1.3 Performed preventive maintenance
2. Required Knowledge and Attitudes	<ul style="list-style-type: none"> 2.1 Safety Practices <ul style="list-style-type: none"> 2.1.1 Ideal good work habits to demonstrate to workers easy and safety standards during operation of farm equipment 2.2 Codes and Regulations <ul style="list-style-type: none"> 2.2.1 Environmental Compliance Certificate (ECG) 2.2.2 Effective work supervision in the operations of farm equipment 2.3 Tools & Equipment: Uses and Specification <ul style="list-style-type: none"> 2.3.1 Knowledge in calibrating and use of equipment 2.3.2 Safety keeping of equipments every after use 2.4 Maintenance <ul style="list-style-type: none"> 2.4.1 Regular upkeep of equipments 2.4.2 Preventive maintenance skills 2.5 Values <ul style="list-style-type: none"> 2.5.1 Positive outlook towards work 2.5.2 Possesses pre-emptive/anticipatory skills
3. Required Skills	<ul style="list-style-type: none"> 3.1 Ability to recognized defective farm equipment 3.2 Perform proper management practices of safety measures
4. Resource Implications	<ul style="list-style-type: none"> 4.1 Service/operational manual of farm tools and equipment 4.2 Tools and equipment 4.3 Farm implements
5. Method of Assessment	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct observation 5.2 Practical demonstration 5.3 Third Party Report
6. Context of Assessment	<ul style="list-style-type: none"> 6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT TITLE : **PERFORM ESTIMATION AND BASIC CALCULATION**

UNIT CODE : **AFF321203**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform basic workplace calculations.

ELEMENT	PERFORMANCE CRITERIA
1. Perform estimation	1.1 Job requirements are identified from written or oral communications 1.2 Quantities of materials and resources required to complete a work task are estimated 1.3 The time needed to complete a work activity is estimated 1.4 Accurate estimate for work completion are made 1.5 Estimate of materials and resources are reported to appropriate person
2. Perform basic workplace calculation	2.1 Calculations to be made are identified according to job requirements 2.2 Correct method of calculation identified 2.3 System and units of measurement to be followed are ascertained 2.4 Calculation needed to complete work tasks are performed using the four basic process of addition, division, multiplication and subtraction 2.5 Calculate whole fraction, percentage and mixed when are used to complete the instructions 2.6 Number computed in self checked and completed for alignment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Calculations	1.1 Quantity of feeds 1.2 Amount of fertilizer 1.3 Amount of medicines
2. Method of calculation	2.1 Addition 2.2 Subtraction 2.3 Multiplication 2.4 Division 2.5 Ratio and proportion
3. System of measurement	3.1 English 3.2 Metric
4. Units of measurement	4.1 Area 4.2 Volume 4.3 Weight

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Performed estimation 1.2 Performed basic workplace calculation 1.3 Applied corrective measures as maybe necessary
2. Underpinning Knowledge and Attitudes	2.1 Mathematics 2.1.1 Basic mathematical operations 2.1.2 Percentage and ratios 2.1.3 Unit Conversion 2.1.4 Basic accounting principles and procedures 2.1.4.1 Production cost 2.1.4.2 Sales 2.1.4.3 Accounts receivables/payables 2.2 Systems, Processes and Operations 2.2.1 Knowledge in different management practices and operational procedures 2.3 Values 2.3.1 Safety consciousness 2.3.2 Time consciousness and management 2.3.3 Cost consciousness 2.3.4 Precision
3. Underpinning Skills	3.1 Ability to perform basic calculation 3.2 Communicate effectively
4. Method of Assessment	Competency in this unit must be assessed through: 4.1 Practical demonstration 4.2 Written examination
5. Resource Implications	5.1 Relevant tools and equipment for basic calculation 5.2 Recommended data
6. Context of Assessment	6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT OF COMPETENCY : PROCESS FARM WASTES

UNIT CODE : AFF321205

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to process farm wastes. It comprises functions such as collecting farm wastes, conducting waste identification and segregation, treating and processing farm wastes and performing housekeeping duties.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range Statement
1. Collect farm wastes	1.1. Tools and materials are prepared for collection of farm wastes. 1.2. Wastes are collected following OSHS and waste collection requirements and plan. 1.3. Dangerous and hazardous wastes are collected following the HAZMAT(hazardous material) protocol. 1.4. Appropriate personal protective equipment (PPE) are worn as prescribed by Occupational Safety and Health Standards (OSHS).
2. Identify and segregate wastes	2.1. Wastes are identified by categories according to industry standards and environmental legislation. 2.2. Wastes are segregated according to organizational requirements and relevant legislation. 2.3. Sorted waste is placed into labelled container to avoid littering and prevent cross-contamination. 2.4. Information on waste is obtained by asking authority to ensure correct identification.
3. Treat and process farm wastes	3.1. Dangerous and hazardous wastes are handled according to organizational requirements and relevant legislation following OSHS procedures. 3.2. Processing of farm wastes is done following environmental legislation and codes. 3.3. Principles of 3Rs (reduce, reuse and recycle) are applied accordingly. 3.4. Farm wastes are disposed of according to environmental legislation and codes.
4. Perform housekeeping	4.1. Appropriate warning signs and labels are displayed in conspicuous places around the workplace. 4.2. Work area is cleaned according to 5S principles. 4.3. Tools are checked, cleaned and stowed according to established industry procedures and following user's manual. 4.4. Materials are stored following industry standard

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range Statement
	<p>procedures and manufacturer's specifications.</p> <p>4.5. PPE is checked for damage prior to ensuring that clean and undamaged equipment is stored.</p> <p>4.6. Storage facility is checked to ensure no contamination in the area according to organizational requirements and legislation and codes.</p> <p>4.7. Record keeping is done according to industry requirements.</p>

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Tools and materials	Tools and materials include: <ol style="list-style-type: none"> 1.1. Tools <ul style="list-style-type: none"> • Spade • Wheel borrow • Broomstick • Sprayer or pressurized pump 1.2. Materials <ul style="list-style-type: none"> • Sacks • Containers • Disinfectants • Detergents • First-aid kit • Chemical spill kit • Personal Protective Equipment <ul style="list-style-type: none"> ○ Goggles ○ Disposal gloves ○ Face mask ○ Rubber boots ○ Overall
2. Agricultural wastes	May include: <ol style="list-style-type: none"> 2.1. Plant materials 2.2. Hay 2.3. Weeds 2.4. Twigs 2.5. Twines 2.6. Empty wooden crates 2.7. Animal manure 2.8. Feed refuse 2.9. Spoiled feeds (Forage and feed supplements) 2.10. Spent bedding materials 2.11. Empty sacks 2.12. Trash fish 2.13. Fish meal 2.14. Effluent
3. Dangerous and hazardous wastes	<ol style="list-style-type: none"> 5.1. Pesticides 5.2. Syringes 5.3. Expired biologics 5.4. Expired veterinary drugs 5.5. Spoiled milk 5.6. Diseased plant and plant parts 5.7. Empty veterinary bottles/syringes
4. Categories	<ol style="list-style-type: none"> 3.1. Re-usable 3.2. Recyclable 3.3. Solid 3.4. Liquid

VARIABLE	SCOPE
5. Processing of wastes	4.1. Composting 4.2. Compacting 4.3. Liquefying 4.4. Shredding 4.5. Carbonizing 4.6. Charcoaling
6. Record	6.1. Record of farm wastes generated and disposed 6.2. Record of incidence of infection and accidents 6.3. Record of chemical spillage 6.4. Record of destroyed carcasses 6.5. Inventory of tools, materials and equipment

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1. Collected farm waste 1.2. Identified and segregated farm waste 1.3. Processed farm waste 1.4. Performed housekeeping
<p>2. Required Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1. Knowledge, Theory, Practices and Systems Operations <ul style="list-style-type: none"> 2.1.1. Tools and materials use in wastes management 2.1.2. Categories of farm wastes 2.1.3. Wastes collection and segregation procedures 2.1.4. Farm-waste handling, storage and disposal procedures 2.1.5. Dangerous and hazardous wastes, hazardous materials (hazmat) protocols 2.1.6. Principles of 5S and 3R 2.2. Communications <ul style="list-style-type: none"> 2.3.1 Preparation of inventory reports and production records 2.3.2 Report on untoward incidence in the area 2.3. Mathematics and Mensuration <ul style="list-style-type: none"> 2.3.1. Profitability of the operation 2.3.2. Volume of farm wastes 2.4. Safety Practices <ul style="list-style-type: none"> 2.4.1. Personal Protective Equipment (PPE) 2.4.2. Material Safety Data Sheets(MSDS) 2.5. Codes and Regulations <ul style="list-style-type: none"> 2.5.1. Appropriate legal regulatory body such as BAI, EMB and DOH,BFAD 2.5.2. Occupational Safety and Health Standards 2.5.3. RA 9003 2.5.4. RA 6969 2.6. Materials, Tools & Equipment: Uses, Specifications and Maintenance <ul style="list-style-type: none"> 2.6.1. Tools and Equipment <ul style="list-style-type: none"> 2.6.1.1.Can understand and follow instructional manuals 2.6.1.2.Safe keeping of equipment every after use 2.6.2. Materials <ul style="list-style-type: none"> 2.6.2.1.Where to source good quality supplies, materials and equipment needed in the maintenance of the poultry house and farm 2.6.3. Maintenance <ul style="list-style-type: none"> 2.6.3.1. Regular upkeep of equipment and facilities 2.6.3.2. Preventive maintenance skills for farm area 2.7. Values <ul style="list-style-type: none"> 2.7.1 Safety- and health-consciousness 2.7.2 Resourcefulness 2.7.3 Diligence 2.7.4 Time-consciousness 2.7.5 Cost-consciousness

	<p>2.7.6 Personal integrity in doing routine management practices</p> <p>2.7.7 Perseverance in executing routine works</p> <p>2.7.8 Ability to work with others harmoniously</p>
3. Required Skills	<p>3.1 Occupational health and safety</p> <p>3.2 Skills in using tools and equipment</p> <p>3.3 Calculations</p> <p>3.4 Communicating effectively</p>
4. Resource Implications	<p>The following resources should be provided:</p> <p>4.1 Farm area</p> <p>4.2 Different farm wastes</p> <p>4.3 Farm-waste processing area</p> <p>4.4 Tools, supplies and materials use in farm wastes collection, segregation and processing</p> <p>4.5 Housekeeping tools and supplies</p> <p>4.6 PPE</p>
5. Method of Assessment	<p>Competency in this unit may be assessed through:</p> <p>5.1 Observation and questioning</p> <p>5.2 Third-Party Report</p> <p>5.3 Demonstration and oral questioning</p>
6. Context of Assessment	<p>6.1 Competency maybe assessed individually in the actual workplace or in accredited farms or institution</p>

CORE COMPETENCIES

UNIT OF COMPETENCY : **MAINTAIN HOUSING, FARM IMPLEMENTS AND SURROUNDING AREAS**

UNIT CODE : **AFF621901**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to manage farm structures and environment. It comprises activities such as preparing for maintenance activities, maintaining of farm and its structures, applying bio-security measures and perform work to completion.

ELEMENT	PERFORMANCE CRITERIA
	<i>Italicized</i> terms are elaborated in the Range of Variables
1. Prepare for farm maintenance activities	1.1. Farm and surrounding area are checked for problems according enterprise and DENR standards. 1.2. Equipment, tools and materials for maintenance activities are prepared according to Occupational Safety and Health Standards (OSHS). 1.3. Condition of facilities is recorded and reported to appropriate authority based on enterprise requirements.
2. Maintain farm and housing facilities	2.1. Farm is maintained based on enterprise standards. 2.2. Pest and vermin are controlled according to industry procedures and environmental regulations (Environmental Management Standards) . 2.3. Animal housing and facilities are maintained according to BAI. 2.4. Farm supplies and tools for maintenance are made available according to farm requirements. 2.5. Fence is repaired according to work requirements. 2.6. Safety measures are applied according to Occupational Safety and Health Standards (OSHS)
3. Apply bio-security measures	3.1. Bio-security threats and hazards are identified with reference to Bureau of Animal Industry-Department of Agriculture (BAI-DA) animal health standards. 3.2. Bio-security measures are applied according to Bureau of Animal Industry-Department of Agriculture (BAI-DA) standards and OSHS 3.3. Relevant records are collected and maintained according to enterprise standards.
4. Perform work to completion	4.1. Tools and materials are maintained and stored according to established enterprise practices and following 5S principle.

	<p>4.2. Farm wastes are disposed according to DENR regulations and 3Rs principle.</p> <p>4.3. Report on work outputs and updates are prepared and submitted to concerned person or authority according to industry practices.</p>
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RANGE OF VARIABLES

VARIABLE	SCOPE
1. Problems	1.1 Pests and vermin 1.2 Corrosion 1.3 Damages caused by elements 1.4 Faulty and defective facilities 1.5 Deteriorated farm structures
2. Equipment, tools and materials	2.1. Equipment 2.1.1. Grass cutter 2.1.2. Sprayer 2.1.3. Emergency lights 2.1.4. Weighing scale 2.2. Tools 2.2.1. Pliers, 2.2.2. Hammer 2.2.3. Bolo and scythe 2.2.4. Shovel, 2.2.5. Hayfork, 2.2.6. Wheel barrow 2.2.7. Saw 2.2.8. Plumbing tools 2.3. Supplies 2.3.1. Lime 2.3.2. Detergents 2.3.3. Disinfectants 2.3.4. Hygiene supplies 2.3.5. Fertilizers 2.3.6. Fuels/lubricants 2.3.7. Brooms 2.3.8. Dustpan 2.3.9. Pail 2.3.10. Fire extinguisher 2.3.11. Garden hose 2.3.12. Nails
3. Facilities	3.1. House 3.2. Feeder 3.3. Waterer 3.4. Feedlot pens 3.5. Maternity pen 3.6. Kidding/lambing pen 3.7. Calf hutches 3.8. Stud pen for bulls 3.9. Milking barn/parlor with appropriate ventilation 3.10. Storage room for feeds and supplies 3.11. Laborers quarter 3.12. Silo, hay barn 3.13. Manure barn

	<ul style="list-style-type: none"> 3.14. Machinery shed 3.15. Farm office 3.16. Water and power supplies 3.17. Working corral with chute 3.18. Disposal area of dead carcasses
4. Bio-security threats and hazards	<ul style="list-style-type: none"> 4.1. Disease outbreak 4.2. Vaccination failures 4.3. Unavailability of veterinary supplies 4.4. Astray animals (dogs, cats, birds) 4.5. New animal acquisition 4.6. Diseases acquired through importation 4.7. Zoonotic diseases 4.8. Inefficient waste disposal 4.9. Inaccurate diagnosis 4.10. Visitors of farms 4.11. Vehicles coming from outside 4.12. Zoning clearance (not near to community houses) 4.13. Ineffective use of disinfectants
5. Bio-security measures	<ul style="list-style-type: none"> 5.1. Prevention of disease through Animal Health program 5.2. Provisions of foot dips and tire baths 5.3. Prevention of disease transmission through good animal husbandry practices
6. Farm wastes	<ul style="list-style-type: none"> 6.1. Animal manure 6.2. Feed refuse or food leftovers 6.3. Spoiled feeds (Forage and feed supplements) 6.4. Empty veterinary bottles, syringes, needles and sharp objects 6.5. Disposable gloves and masks 6.6. Expired biologics 6.7. Spoiled milk 6.8. Spent bedding materials 6.9. Empty sacks 6.10. Dead animals 6.11. Placenta

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none"> 1.1. Prepared for farm maintenance activities 1.2. Maintained farm and housing facilities 1.3. Applied bio-security measures 1.4. Performed work to completion
<p>2. Required Knowledge and Attitudes</p>	<ol style="list-style-type: none"> 2.1. Knowledge, Theory, Practices and Systems Operations <ol style="list-style-type: none"> 2.1.1. Knowledge on first aid 2.1.2. Different types and uses of equipment, tools and materials for maintenance 2.1.3. Categories of farm wastes 2.1.4. Bio-security threats and hazards 2.1.5. Different facilities 2.1.6. Different pest and vermin 2.1.7. Bio-security procedures 2.1.8. Maintenance of housing and implements 2.1.9. Procedures on periodic pest and vermin control 2.2. Communication <ol style="list-style-type: none"> 2.2.1. Maintenance of relevant records of farm 2.2.2. Reporting of work outputs and condition of farm and facilities 2.2.3. Reporting of problems identified in farm operations 2.3. Mathematics and Mensuration <ol style="list-style-type: none"> 2.3.1. Computation for space requirements 2.3.2. Inventory of supplies and materials 2.3.3. Amount of farm wastes 2.4. Safety Practices <ol style="list-style-type: none"> 2.4.1. Implementation of safety standard in handling chemicals and biologics as prescribed by manufacturers 2.4.2. Wearing of appropriate Personal Protective Equipment(PPE's) 2.4.3. Disposal of hazardous wastes and dead carcasses 2.4.4. Elimination of sharp and pointed objects 2.5. Codes and Regulations <ol style="list-style-type: none"> 2.5.1. Municipal and cities/ provincials ordinances 2.5.2. Clean Air Act 2.5.3. Animal Welfare Act RA 8485 2.5.4. Ecological Solid Waste Management Act (RA9003) 2.5.5. Hazardous Materials (RA 6969) 2.5.6. Liquid Wastes Act 2.6. Materials, Tools & Equipment: Uses, Specifications and Maintenance

	<ul style="list-style-type: none"> 2.7.1. Tools and Equipment <ul style="list-style-type: none"> 2.6.1.1. Can understand and follow instructional manuals 2.6.1.2. Safe keeping of equipments every after use 2.7.2. Materials <ul style="list-style-type: none"> 2.6.2.1. Where to source good quality supplies, materials and equipment needed in the operation of the farm 2.7.3. Maintenance <ul style="list-style-type: none"> 2.6.3.1. Regular upkeep of equipments and facilities 2.6.3.2. Preventive maintenance skills 2.7. Values <ul style="list-style-type: none"> 2.7.1. Patience 2.7.2. Punctuality 2.7.3. Perseverance 2.7.4. Honesty 2.7.5. Hardworking
3. Required Skills	<ul style="list-style-type: none"> 3.1. Basic first aid 3.2. Basic skills in using maintenance tools and equipment 3.3. Calculations 3.4. Effective communication skills
4. Resource Implications	<ul style="list-style-type: none"> 4.1. Farm site/pasture area with appropriate facilities 4.2. Tools <ul style="list-style-type: none"> 4.2.1. Weighing scale – for weighing farm wastes 4.2.2. Grass cutter 4.2.3. Sprayer 4.2.4. Emergency lights 4.2.5. Weighing scale 4.2.6. Pliers, 4.2.7. Hammer 4.2.8. Bolo and scythe 4.2.9. Shovel, 4.2.10. Hayfork, 4.2.11. Wheel barrow 4.2.12. Saw 4.2.13. Plumbing tools 4.2.14. Fire extinguisher 4.2.15. Garden hose 4.3. Materials <ul style="list-style-type: none"> 4.3.1. Lime 4.3.2. Detergents 4.3.3. Disinfectants 4.3.4. Hygiene supplies 4.3.5. Fertilizers 4.3.6. Fuels/lubricants 4.3.7. Brooms 4.3.8. Dustpan 4.3.9. Pail 4.3.10. Nails 4.4. All workers involved in different activities must be fully oriented and cautioned on the different specific work

	<p>activities of the farm</p> <p>4.5. Technical supervisors should have skills and ability in the successful implementation of work program activities</p>
5. Method of Assessment	<p>Competency in this unit may be assessed through:</p> <p>5.1. Observation and questioning</p> <p>5.2. Written examination</p> <p>5.3. Third Party Report</p> <p>5.4. Portfolio</p> <p>5.5. Demonstration</p>
6. Context of Assessment	<p>6.1. Competency maybe assessed individually in the actual workplace or in accredited farms or institution</p>

UNIT OF COMPETENCY : PROVIDE FORAGE

UNIT CODE : AFF621902

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to provide forage which include functions during forage area preparation, planting and maintenance activities of forage area, production of silage and completion of work.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range Statement
1. Prepare area for forage plantation	1.1 Tools, materials and equipment are prepared according to work requirements and plan. 1.2 Forage area is cleared from unwanted vegetations and debris according to site plan. 1.3 Land is prepared according to site plan and production requirements. 1.4 Fence is set-up in the perimeter following site plan. 1.5 Safety measures are practiced according to Occupational Health and Safety (OHS) procedures.
2. Plant forage species	2.1. Forage species to be planted are determined according to types of ruminants and availability of forage species. 2.2. Forage planting materials are sourced-out and collected from recommended sources and other farmers. 2.3. Forage species are planted according to plan and production requirements. 2.4. Task is performed according to OSHS.
3. Maintain forage plants	3.1. Pest control measures are employed according to Good Agricultural Practices (GAP) 3.2. Fertilizers are applied according to plant requirements 3.3. Plants are watered according to plant requirements. 3.4. Other maintenance practices are done following GAP and plant requirements. 3.5. Tasks are performed following GAP and OSHS procedures.
4. Produce silage	4.1. Excess forages and other materials for silage are gathered following established farm procedures. 4.2. Silos are used according to supply of silage materials. 4.3. Ensiling is done following standard procedures. 4.4. Commercial silage additives are mixed according to enterprise requirements. 4.5. Forage silage is stored following established storage requirements and condition. 4.6. Forage silage are inspected for quality check and

	<i>improvement.</i>
5. Perform work to completion	<p>5.1. Tools and equipment are cleaned, maintained and stored according to established standard practices</p> <p>5.2. Maintenance of clean and safe area is undertaken throughout and on completion of work.</p> <p>5.3. <i>Records of silage production</i> are compiled for reference and reporting purposes following enterprise procedures and 5S principles.</p> <p>5.4. Work output is reported to concerned person or authority according to industry practices.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools, materials and equipment	1.1. Equipment 1.1.1. Grass cutters 1.1.2. Generator 1.1.3. Water pump with hose 1.1.4. Tractors (optional) 1.1.5. Draft animals 1.2. Tools 1.2.1. Plow and harrow 1.2.2. "Bolo" and scythe 1.2.3. Shovel 1.2.4. Hoe 1.2.5. Water sprinklers 1.2.6. Planter 1.2.7. Wheel borrow 1.2.8. Hole digger 1.3. Materials 1.3.1. Planting materials 1.3.2. Fertilizer (Organic and inorganic) 1.3.3. Pesticides 1.3.4. Root inoculants 1.3.5. Herbicides 1.3.6. Fencing materials
2. Unwanted vegetations and debris	2.1. Poisonous and destructive plants 2.2. Inedible vegetation 2.3. Tree stumps 2.4. Broken bottles, glass, plastics and other non-biodegradable wastes 2.5. Garbage 2.6. Soil contaminants (chemicals, metals, stones, construction debris) 2.7. Termite hills 2.8. Weeds
3. Forage species	3.1. Napier 3.2. Guinea Grass 3.3. Paragrass 3.4. Centrosema 3.5. Calopogonium 3.6. Stylosanthes 3.7. Acacia 3.8. Malunggay 3.9. Stargrass 3.10. Humidicola 3.11. Kakawate 3.12. "Mani-manian" (<i>Arachis pintoii</i>) 3.13. Renzonii 3.14. Flemingia

	<ul style="list-style-type: none"> 3.15. Pigeon Pea 3.16. Tricantera or “Madre de agua” 3.17. Mullberry 3.18. Indigofera 3.19. Ipil-ipil 3.20. Katuray 3.21. Forage corn 3.22. Sweet Sorghum 3.23. Cassava leaves 3.24. Soy beans
4. Pest control measures	<ul style="list-style-type: none"> 4.1. Organic pesticides 4.2. Chemical pesticides 4.3. Biological control 4.4. Selection of pest resistant forages
5. Fertilizers	<ul style="list-style-type: none"> 5.1. Organic fertilizers 5.2. In-organic fertilizers
6. Other maintenance practices	<ul style="list-style-type: none"> 6.1. Correct cutting intervals 6.2. Replacement of plant mortalities 6.3. Weeding
7. Excess forages and other materials for silage	<ul style="list-style-type: none"> 7.1. Grasses <ul style="list-style-type: none"> 7.1.1. Native grasses 7.1.2. Improved grasses 7.2. Legumes <ul style="list-style-type: none"> 7.2.1. Vines 7.2.2. Shrubs 7.2.3. Fodder trees 7.3. Conserved forages <ul style="list-style-type: none"> 7.3.1. Silages (corn & grasses) 7.3.2. Hay (grasses or legumes) 7.3.3. Urea-treated rice straw (UTRS) 7.4. Farm by-products <ul style="list-style-type: none"> 7.4.1. Rice straw 7.4.2. Sugar cane tops 7.4.3. Sweet potato vines 7.4.4. Corn stover 7.5. Industrial by-products <ul style="list-style-type: none"> 7.5.1. Spent grain 7.5.2. Molasses 7.5.3. Pine apple pulps 7.5.4. 3Banana peelings 7.5.5. Rice/corn bran 7.5.6. Cassava (leaves or meal) 7.5.7. copra meal 7.6. Alternative feed resources <ul style="list-style-type: none"> 7.6.1. Tree leaves and shrubs 7.6.2. Banana stalks 7.6.3. Peanut/soya hay 7.6.4. Gumamela 7.6.5. Chicken manure

	7.6.6. Milk replacer
8. Ensiling	8.1. Pre-seal 8.2. Active fermentation 8.3. Stable phase 8.4. Feed-out
9. Commercial silage additives	9.1. Bacterial inoculants 9.2. Enzymes 9.3. Nonprotein nitrogen (NPN) sources 9.4. Acids 9.5. Sugar sources 9.6. Feed fortifier (grains, bran, molasses)
10. Improvement	10.1. Includes the following for improvement of quality of silage: 10.2. Adding the following: 10.2.1. molasses 10.2.2. grains 10.3. Silage is compacted 10.4. Cover to ensure anaerobic condition
11. Records of silage production	11.1. Date of production of silage 11.2. Date of harvest of silage 11.3. Quantity starting materials for silage 11.4. Silage recovered (yield) 11.5. Species of forages ensiled 11.6. Feed sources and contact details

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Prepared area for forage plantation 1.2 Planted forage species and alternative sources of forages 1.3 Applied accepted cultural practices in forage production 1.4 Produced silage 1.5 Performed work to completion
<p>2. Required Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1. Knowledge, Theory, Practices and Systems Operations <ul style="list-style-type: none"> 2.1.1 Types of soil and terrain 2.1.2 Types of forage species 2.1.3 Cropping season and patterns 2.1.4 Good Agricultural Practices 2.1.5 Land preparation procedures <ul style="list-style-type: none"> 2.1.1. Different forage and materials for silage 2.1.2. Volume of protein produce 2.1.3. Irrigation practices 2.1.4. Silaging practices 2.1.5. Cut and carry system of feeding 2.1.6 Harvesting of silage 2.1.7 Disposal procedures of spoiled silages 2.1.8 Record keeping 2.2 Communication <ul style="list-style-type: none"> 2.2.1 Preparation of report 2.2.2 Following verbal and written instructions 2.3 Safety Practices <ul style="list-style-type: none"> 2.3.1 Wearing of PPE's 2.3.2 Handling of chemicals 2.3.3 Disposal of wastes (empty bottles, etc.) 2.3.4 GAP 2.3.5 First aid 2.4 Mathematics and Mensuration <ul style="list-style-type: none"> 2.4.1 Seeding rate 2.4.2 Yield rate 2.4.3 Planting distance 2.4.4 Dosage of chemicals/fertilizers 2.4.5 Cost of forages per animal 2.4.6 Volume of forage needed for the whole herd 2.4.7 Productivity per area planted to forage 2.4.8 Computation for mixture of silage components 2.4.9 Computation of nutrient requirements 2.4.10 Inventory of supplies and materials 2.5 Safety Practices <ul style="list-style-type: none"> 2.5.1. Implementation of safety standard in handling chemicals as prescribed by manufacturers 2.5.2. Wearing of appropriate Personal Protective Equipment (PPEs) 2.5.3. Disposal of hazardous wastes 2.5.4. Elimination of sharp and pointed objects

	<ul style="list-style-type: none"> 2.5.5. Practice of safety precautions in harvesting forages 2.5.6. Disposal of spoiled silages 2.5.7. Feeds checked for aflatoxins 2.5.8. Practice Occupational Safety and Health Standards (OSHS) 2.6 Codes and Regulations <ul style="list-style-type: none"> 2.6.1. Compliance to OSHS 2.6.2. Municipal and cities/ provincials ordinances 2.7 Materials, Tools, Equipment: Uses, Specifications and Maintenance <ul style="list-style-type: none"> 2.7.1. Tools and Equipment <ul style="list-style-type: none"> 2.7.1. 1. Can understand and follow instructional manuals 2.7.1. 2. Safe keeping of equipments every after use 2.7.2. Materials <ul style="list-style-type: none"> 2.7.2. 1. Where to source good quality supplies, materials and equipment needed in the operation involving forage provisions. 2.7.3. Maintenance <ul style="list-style-type: none"> 2.7.3. 1. Regular upkeep of equipments and facilities 2.7.3. 2. Preventive maintenance skills 2.8 Values <ul style="list-style-type: none"> 2.8.1 Resourcefulness 2.8.2 Hardworking 2.8.3 Diligence 2.6.3. Patience 2.6.4. Perseverance 2.6.5. Honesty
3. Required Skills	<ul style="list-style-type: none"> 3.1 Occupational health and safety practices 3.2 Tractor operation or plowing 3.3 Handling draft animals 3.4 Skills in using farming tools and equipment 3.5 Calculations 3.6 Effective communication skills
4. Resource Implications	<ul style="list-style-type: none"> 4.1. Farm with forage area and facilities 4.2. Silage production area 4.3. Supplies and materials appropriate to the activity 4.4. Tools and equipment appropriate to the activity 4.5. Feed resources 4.6. Different silage 4.7. All workers involved in different activities must be fully oriented and cautioned on the different specific work activities of the farm 4.8. Technical supervisors should have skills and ability in the successful implementation of work program activities
5. Method of Assessment	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 5.1 Observation and questioning 5.2 Written examination 5.3 Third Party Report

	5.4 Portfolio 5.5 Demonstration
6. Context of Assessment	6.1. Competency maybe assessed individually in the actual workplace or in accredited farms or institution

UNIT OF COMPETENCY : PERFORM BREEDING OF RUMINANTS

UNIT CODE : AFF621903

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform breeding of ruminants. It comprises of preparing animal stocks, breeding of ruminants, carrying-out monitoring activities, feeding the animals, applying basic health care and performing post-breeding activities.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range Statement
1. Prepare animal stocks	1.1. Breeds of animals suitable for meat, dairy and mixed-type/dual purpose are obtained based on breed standards and adoptability on the farm environment following instructions from authority. 1.2. Animals are placed in suitable house and facilities following Good Animal Husbandry Practices (GAHP) and Animal Welfare Act. 1.3. Animals are well fed and maintained regularly following Animal Welfare Act.
2. Breed ruminants	2.1. Prepare tools, materials and equipment for breeding operations following breeding schedule and requirements. 2.2. Breeding program for ruminants is followed according to the business objective 2.3. Reproductive phenomena of ruminants are observed, recorded and reported following enterprise protocols. 2.4. Ruminants are bred naturally according to designed mating plan. 2.5. Where necessary, small ruminants are inseminated artificially according to instructions of supervisor. 2.6. Tasks are performed following Animal Welfare Acts. 2.7. Safety measures are practice according to OSHS procedures.
3. Carry-out monitoring activities	3.1. Breeding performance of ruminants are observed recorded and reported following enterprise protocols. 3.2. Unproductive animals are treated and disposed according to the set standard 3.3. Breeding and reproduction data are regularly gathered and kept for evaluation according to enterprise protocols.
4. Feed animals	4.1. Basal rations for ruminants at various physiological stage are provided based on industry standard. 4.2. Feed supplements like concentrates, minerals and

	<p>vitamins are offered according to animal dietary requirements</p> <p>4.3. Grazing management for ruminants are identified and practiced</p> <p>4.4. Grazing capacity of the pasture is determined based on pasture land condition.</p>
5. Apply basic health care	<p>5.1. Sick animals are reported to appropriate authority.</p> <p>5.2. Assistance is provided during implementation of medication n program in accordance with enterprise standards and instructions of authority.</p> <p>5.3. Safety practices are observed according to OSHS.</p>
6. Perform post-breeding activities	<p>6.1. Tools, materials and equipment are cleaned and stored following procedural manual and 5S principles.</p> <p>6.2. Proper disposal of wastes are practiced according to DENR regulations.</p> <p>6.3. Records are updated and kept following enterprise protocol.</p> <p>6.4. Work outputs are reported to the authority following enterprise protocol.</p>

RANGE OF VARIABLES

VARIABLE	SCOPE																																																						
1. Breeds of animals	<p>1.1 Large Ruminants</p> <p>1.1.1. Cattle</p> <table border="1"> <thead> <tr> <th>Beef</th> <th>Dairy</th> </tr> </thead> <tbody> <tr> <td>Native Strain</td> <td>Holstein Friesian</td> </tr> <tr> <td>Brahman</td> <td>Jersey</td> </tr> <tr> <td>Hindu-Brazil</td> <td>Sahiwal</td> </tr> <tr> <td>Simbrah</td> <td>Red Sindhi</td> </tr> <tr> <td>Crosses</td> <td>Crosses</td> </tr> </tbody> </table> <p>1.1.2. Buffaloes</p> <table border="1"> <thead> <tr> <th>Beef</th> <th>Dairy</th> </tr> </thead> <tbody> <tr> <td>Native Carabaos</td> <td>Indian Murrah</td> </tr> <tr> <td>American Murrah</td> <td>Bulgarian Murrah</td> </tr> <tr> <td>Cambodain</td> <td>Nili Ravi</td> </tr> <tr> <td>buffalo</td> <td>Brazilian buffalo</td> </tr> <tr> <td>Thai buffaloes</td> <td>Crosses</td> </tr> <tr> <td>Crosses</td> <td></td> </tr> </tbody> </table> <p>1.2 Draft animals</p> <p>1.2.1. Native carabaos and cattles</p> <p>1.2.2. Cross breeds</p> <p>1.3 Small Ruminants</p> <p>1.3.1. Goat</p> <table border="1"> <thead> <tr> <th>Meat-type</th> <th>Dairy type</th> <th>Mixed type</th> </tr> </thead> <tbody> <tr> <td>Boer</td> <td>Anglo-Nubian</td> <td>Anglo Nubian</td> </tr> <tr> <td>Kiko</td> <td>Saanen</td> <td></td> </tr> <tr> <td>Kalahari</td> <td>Toggenburg</td> <td></td> </tr> <tr> <td>Anglo-Nubian</td> <td>Alpine</td> <td></td> </tr> <tr> <td></td> <td>Oberhasli</td> <td></td> </tr> </tbody> </table> <p>1.3.2. Sheep</p> <table border="1"> <thead> <tr> <th>Meat-type</th> </tr> </thead> <tbody> <tr> <td>Dorper</td> </tr> <tr> <td>(blackhead and</td> </tr> <tr> <td>whitehead)</td> </tr> <tr> <td>Katahdin</td> </tr> <tr> <td>Merino</td> </tr> <tr> <td>St. Croix</td> </tr> <tr> <td>Black belly</td> </tr> <tr> <td>Damara</td> </tr> <tr> <td>Dorset</td> </tr> </tbody> </table>	Beef	Dairy	Native Strain	Holstein Friesian	Brahman	Jersey	Hindu-Brazil	Sahiwal	Simbrah	Red Sindhi	Crosses	Crosses	Beef	Dairy	Native Carabaos	Indian Murrah	American Murrah	Bulgarian Murrah	Cambodain	Nili Ravi	buffalo	Brazilian buffalo	Thai buffaloes	Crosses	Crosses		Meat-type	Dairy type	Mixed type	Boer	Anglo-Nubian	Anglo Nubian	Kiko	Saanen		Kalahari	Toggenburg		Anglo-Nubian	Alpine			Oberhasli		Meat-type	Dorper	(blackhead and	whitehead)	Katahdin	Merino	St. Croix	Black belly	Damara	Dorset
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2. Tools, materials and equipment	2.1. AI kit 2.2. Frozen semen 2.3. Breeder																																			
3. Breeding program	3.1. Pure-breeding 3.2. Backcrossing 3.3. Crossbreeding, buckline and doeline 3.4. Rotational crossbreeding 3.5. Upgrading																																			
4. Reproductive phenomena	4.1. Reproductive data <table border="1"> <thead> <tr> <th>Stage</th> <th>Cattle</th> <th>Buffalo</th> <th>Sheep</th> <th>Goat</th> </tr> </thead> <tbody> <tr> <td>Ave. estrus cycle, d</td> <td>20-23</td> <td>18-71</td> <td>21</td> <td>21</td> </tr> <tr> <td>Ave. estrus duration, d</td> <td>23</td> <td>18-36</td> <td>24-42</td> <td>24-42</td> </tr> <tr> <td>Ave. gestation, d</td> <td>270</td> <td>310</td> <td>145</td> <td>150</td> </tr> <tr> <td>Age of first estrus, yr</td> <td>0.8-1</td> <td>1.2</td> <td>0.3</td> <td>0.3</td> </tr> <tr> <td>Calving interval, yr</td> <td>1</td> <td>1.2</td> <td>8 mos</td> <td>8 mos</td> </tr> <tr> <td>Post partum estrus,d</td> <td>45</td> <td>35-60</td> <td>7-10</td> <td>7-10</td> </tr> </tbody> </table> 4.2. Signs of estrus 4.3. Signs of pregnancy 4.4. Signs of approaching parturition	Stage	Cattle	Buffalo	Sheep	Goat	Ave. estrus cycle, d	20-23	18-71	21	21	Ave. estrus duration, d	23	18-36	24-42	24-42	Ave. gestation, d	270	310	145	150	Age of first estrus, yr	0.8-1	1.2	0.3	0.3	Calving interval, yr	1	1.2	8 mos	8 mos	Post partum estrus,d	45	35-60	7-10	7-10
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5. Breeding performance	5.1. Breeding services 5.2. Pregnancy rate 5.3. Calf drop 5.4. Kidding/lambing/calving rate 5.5. Mortality rate 5.6. Male-female ratio																																			
6. Unproductive animals	6.1. Hard-to-breed animals 6.2. Long calving to breeding interval 6.3. Physically deformed animals 6.4. Sick animals 6.5. Animals with reproductive disorders 6.6. Animals with low-milk production 6.7. Old aged animals 6.8. Vicious animals 6.9. Stunted animals 6.10. Malnourished animal 6.11. Too-fat animals																																			
7. Feed supplements	7.1. Concentrate feeds 7.2. Mineral supplements <ul style="list-style-type: none"> 7.2.1. Urea Molasses Mineral Block (UMMB) 7.2.2. Medicated Urea Molasses Mineral Block (MUMMB) 7.2.3. Fermented Plant Juices (FPJ) 7.2.4. Lime 7.2.5. Dicalcium phosphate 7.2.6. Oyster shell 7.2.7. Salt 																																			

	<ul style="list-style-type: none"> 7.2.8. Bone meal 7.2.9. Minerals and vitamins 7.2.10. Probiotics
8. Grazing management	<ul style="list-style-type: none"> 8.1. Continuous grazing 8.2. Rapid Rotational grazing (RRG)
9. Records	<ul style="list-style-type: none"> 9.1 Animal identification 9.2 Pedigree (Dam and Sire) 9.3 Inventory 9.4 Breeding and reproduction records 9.5 Health records 9.6 Mortality and disposal records 9.7 Calving/kidding/lambing records

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none"> 1.1. Prepared animal stocks 1.2. Bred ruminants 1.3. Carried-out monitoring activities 1.4. Provided ration and implement feeding practices 1.5. Applied basic health care 1.6. Performed post-breeding activities
<p>2. Required Knowledge and Attitudes</p>	<ol style="list-style-type: none"> 2.1. Knowledge, Theory, Practices and Systems Operations <ol style="list-style-type: none"> 2.1.1. Different animal breeds of ruminants 2.1.2. Selection of stocks 2.1.3. Tools, materials and equipment in breeding activities 2.1.4. Reproductive phenomena 2.1.5. Breeding program 2.1.6. Breeding mode and procedures of ruminants 2.1.7. Artificial insemination procedures for small ruminants 2.1.8. Natural mating 2.1.9. Monitoring of breeding ruminants 2.1.10. Care and management of breeders and general herd, , 2.1.11. Feed supplements 2.1.12. Aflatoxins in feeds 2.1.13. GAHP 2.1.14. Animal Welfare Act relating to breeding 2.1.15. OSHS in animal breeding 2.2. Communication <ol style="list-style-type: none"> 2.2.1. Preparation of selection criteria and breeding objectives, care and management of general herd, use of A.I. for improved reproduction, forage/feed production and conservation; financial viability of the enterprise. 2.2.2. Updating and keeping of data and records 2.2.3. Following verbal and written instructions 2.3. Mathematics and Mensuration <ol style="list-style-type: none"> 2.3.1. Computation of feed requirements at different physiological stages, reproductive parameters, feed conversion efficiency, dose requirements for A.I. and biologicals and income over costs of operation 2.4. Safety Practices <ol style="list-style-type: none"> 2.4.1. Implementation of safety standard in handling animals and biologicals as prescribed by manufacturers and endorsed by veterinarians 2.4.2. Wearing of PPE's and proper disposal of hazardous wastes 2.4.3. Practice OSHS

	<p>2.4.4. Feeds check for aflatoxins</p> <p>2.5. Codes and Regulations</p> <p>2.5.1. Compliance to animal movement and quarantine protocol and herd health program as formulated through Executive and Administrative Orders issued by BAI, PCC, PAHC and NMIC of the Dept. of Agriculture, DENR.</p> <p>2.5.2. Animal Welfare Act</p> <p>2.5.3. Good Animal Husbandry Practices</p> <p>2.5.4. OSHS</p> <p>2.6. Materials, Tools & Equipment: Uses, Specifications and Maintenance</p> <p>2.6.1. Tools and Equipment</p> <p>2.6.1.1. Can understand and follow instructional manuals</p> <p>2.6.1.2. Safe keeping of equipments every after use</p> <p>2.6.2. Materials</p> <p>2.6.2.1. Where to source good quality supplies, materials and equipment needed in the breeding operation</p> <p>2.6.3. Maintenance</p> <p>2.6.3.1. Regular upkeep of equipment and facilities</p> <p>2.6.3.2. Preventive maintenance skills</p> <p>2.7. Values</p> <p>2.7.1. Patience during breeding activities</p> <p>2.7.2. Perseverance in rearing the general herd</p> <p>2.7.3. Honesty during business transactions such as sales of live animals and products</p>
3. Required Skills	<p>3.1. Practice OSHS and first aid</p> <p>3.2. Skills in using tools and equipment</p> <p>3.3. Calculations</p> <p>3.4. Communicate effectively</p>
4. Resource Implications	<p>4.1. Farm and forage area</p> <p>4.2. Different breeds of ruminants</p> <p>4.3. Infrastructures-houses, seed, corrals, sheds</p> <p>4.4. A.I. kit and paraphernalia</p> <p>4.5. Feeds, concentrates and additives</p> <p>4.6. Weighing scale (1000 kg. cap.) – for monitoring of animals weight</p> <p>4.7. Drenching gun/syringe – deworming purposes</p> <p>4.8. Pressurized pump – for cleaning of areas</p> <p>4.9. All workers involved in different activities must be fully oriented and cautioned on the different specific work activities of the farm</p> <p>4.10. Technical supervisors should have skills and ability in the</p>

	successful implementation of work program activities
5. Method of Assessment	Competency in this unit may be assessed through: 5.1. Observation and questioning 5.2. Third Party Report 5.3. Portfolio 5.4. Demonstration
6. Context of Assessment	6.1. Competency maybe assessed individually in the actual workplace or in accredited farms or institution

UNIT OF COMPETENCY : RAISE DAIRY ANIMALS

UNIT CODE : AFF621904

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to manage dairy animals. It comprises of functions such as handling dairy animals, rearing calves and kids, rearing dairy-breeder animals and completing the operations of raising dairy animals.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range Statement
1. Handle dairy animals	1.1. Pregnant animals are separated from the general herd and are kept in maternity pen. 1.2. Assistance during calving/lkidding is provided according to GAHP. 1.3. Lactating ruminants are fed according to standards. 1.4. Lactating ruminants are maintained following production objective. 1.5. Milk is collected and checked for quality based on the standard procedures. 1.6. Collected milk are pasteurized and packaged following standard hygienic procedures (HACCP).
2. Rear calves and kids	2.1. Newly born calf /kid is reared according to developed rearing system . 2.2. Tools and materials are prepared according to work requirements. 2.3. Routine feeding is carried-out at prescribed feeding intervals. 2.4. Small and less vigorous calves and kids are identified and separated from others for specialized feeding. 2.5. Calves and kids are separated as required for routine husbandry or animal health procedures. 2.6. Progress and development of calves/kids is monitored regularly through weighing and/or visual appraisal. 2.7. Welfare and health abnormalities are reported to the appropriate authority
3. Rear dairy-breeder animals	3.1. Dairy-breeder- animals-to-be are placed in appropriate housing according to establish farm procedures and GAHP 3.2. Animals are fed according to prescribed feeding intervals. 3.3. Welfare and health abnormalities are reported to the appropriate authority

	<p>3.4. Monitoring of animals is done regularly through weighing and/or visual appraisal.</p> <p>3.5. Adult Breeder for dairy-type animals are selected for breeding purposes according to breeds standard.</p> <p>3.6. Male animals not intended for breeding are sold for meat.</p>
<p>4. Complete the operations</p>	<p>4.1. Animal and financial records derived from dairy operations are kept and updated according to industry standard.</p> <p>4.2. Tools and materials are maintained and stored according to manufacturer's specification and enterprise protocol.</p> <p>4.3. Area is cleaned-up according to enterprise protocol</p> <p>4.4. Wastes are disposed following environmental regulations and enterprise procedures.</p>

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Rearing system	1.1. Feeding of colostrums 1.2. Natural suckling 1.3. Artificial rearing (raw milk or milk replacer) 1.4. Combination of natural and artificial
2. Quality	2.1. Taste 2.2. Odor 2.3. Visual
3. Dairy-breeder-animals-to-be	3.1. Yearlings/growers 3.2. Young female a. Heifer b. Doelings 3.3. Young male a. Buckling b. Junior bull 3.4. Adult male a. Bucks b. Bull
4. Records	4.1. Production records 4.2. Breeding and reproduction records 4.3. Inventory and consumption records 4.4. Daily milk production records 4.5. Financial and sales records 4.6. Health records 4.7. Mortality and disposal records

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Handled dairy animals 1.2 Reared calves and kids 1.3 Reared dairy-breeder-animals-to-be 1.4 Completed the operations
<p>2. Required Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1 Knowledge, Theory, Practices and Systems Operations <ul style="list-style-type: none"> 2.1.1. Calving/kidding 2.1.2. Rearing calves and kids 2.1.3. Rearing young ruminants 2.1.4. Rearing adult male animals for breeding 2.1.5. Implementation of medication program 2.1.6. Proper disposal of hazardous wastes 2.1.7. Procedures in milk collection 2.1.8. Quality check of milk 2.2 Communication <ul style="list-style-type: none"> 2.2.1 Updating and keeping of records and data relating to breeding activities 2.2.2 Preparation of inventory reports and production records 2.2.3 Report preparation on progress of the animals 2.2.4 Following verbal and written instructions 2.3 Mathematics and Mensuration <ul style="list-style-type: none"> 2.3.1. Estimation harvest time.. 2.3.2. Computation of harvest recovery 2.3.3. Feed conversion efficiency 2.3.4. Space requirements at various stages of growth 2.3.5. Provision of right amount of drugs, vaccines and other biologicals 2.3.6. Profitability of the operation 2.4 Safety Practices <ul style="list-style-type: none"> 2.4.1. Wear PPE 2.4.2. Practice OSHS 2.4.3. 5S implementation 2.4.4. Knowledge in handling biologicals and disinfectants base on manufacturers specifications or VET recommendations 2.4.5. Proper disposal of hazardous wastes 2.5 Codes and Regulations <ul style="list-style-type: none"> 2.5.1. Appropriate legal regulatory body that supervises the animal industry such as BAI and Phil. Animal Health Center (PAHC), DENR 2.5.2. Occupational Safety and Health Standards. 2.5.3. Animal Welfare Act 2.5.4. GAHP 2.6 Materials, Tools & Equipment: Uses, Specifications and Maintenance

	<ul style="list-style-type: none"> 2.6.1. Tools and Equipment <ul style="list-style-type: none"> 2.6.1.1. Can understand and follow instructional manuals 2.6.1.2. Safe keeping of equipments every after use 2.6.2. Materials <ul style="list-style-type: none"> 2.6.2.1. Where to source good quality supplies, materials and equipment needed in the rearing dairy type animals 2.6.3. Maintenance <ul style="list-style-type: none"> 2.6.3.1. Regular upkeep of equipment and facilities 2.6.3.2. Preventive maintenance skills 2.7 Values <ul style="list-style-type: none"> 2.7.1. Diligence 2.7.2. Time consciousness 2.7.3. Honesty in records of sales 2.7.4. Confidence in selecting dairy type animals 2.7.5. Personal integrity in doing routine management practices 2.7.6. Perseverance in rearing dairy-type animals 2.7.7. Ability to work with others harmoniously
3. Required Skills	<ul style="list-style-type: none"> 3.1 Work safety 3.2 Simple carpentry and masonry skills 3.3 Calculations 3.4 Planning skills 3.5 Communicate effectively
4. Resource Implications	<ul style="list-style-type: none"> 4.1. Farm area and forage site 4.2. Animal house and cages 4.3. Milking parlor 4.4. Weighing scale and other tools, materials and equipment in handling dairy-type animals and milk collection 4.5. Medication and nutritional requirements 4.6. All workers involved in different activities must be fully oriented and cautioned on the different specific work activities of the farm 4.7. Technical supervisors should have skills and ability in the successful implementation of work program activities
5. Method of Assessment	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 5.1. Passing written exam 5.2. Practical demonstration 5.3. Testimonies of good performance and behavior of applicant by supervisor
6. Context of Assessment	<ul style="list-style-type: none"> 6.1. Competency may be assessed individually in the actual workplace or through accredited farms/institutions

UNIT OF COMPETENCY : RAISE MEAT-TYPE ANIMALS

UNIT CODE : AFF621905

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to raising feedlot cattle and buffaloes. It comprises of functions starting from preparation of animals, handling and feeding the feedlot animals including the applying health care until to the completion of tasks.

1. Provide assistance in management of meat-type animals	<p>1.1. Assistance in pre-selection process of meat-type animals are provided following instructions of authority and industry standards.</p> <p>1.2. Meat-type animals are raised in complete/semi-confinement or under grazing conditions</p> <p>1.3. Fattening period is determined according to the target market weight.</p> <p>1.4. Unproductive animals are managed according to the industry standards.</p> <p>1.5. Assistance in animal husbandry practices are provided following GAHP.</p>
2. Feed animals	<p>2.1. Basal rations both for meat-type animals at various fattening periods are identified and provided based on feeding standard.</p> <p>2.2. Feed supplements like concentrates, minerals and vitamins are offered according to animal requirements.</p> <p>2.3. Feeding management for meat-type animals are identified and practiced</p> <p>2.4. Grazing capacity of the pasture is determined based on established pasture.</p>
3. Apply basic health care	<p>3.1. Sick animals are reported to appropriate authority.</p> <p>3.2. Assistance is provided during implementation of medication program in accordance with industry standards and instructions of authority.</p> <p>3.3. Supplementation is done based on medication program.</p> <p>3.4. Safety practices are observed according to Occupational Safety and Health Standards (OSHS).</p>
4. Perform work to completion	<p>4.1. Breeder for meat-type animals are selected for breeding purposes according to breeds standard.</p> <p>4.2. Animals are prepared for market disposal following instructions of authority.</p> <p>4.3. Animal and financial records derived from meat-type animals are updated and kept according to industry standard.</p>

	<ul style="list-style-type: none">4.4. Wastes disposal is done according to enterprise protocol and environmental legislations.4.5. Tools, materials and supplies are maintained and stored according to enterprise procedures.4.6. Reporting was done to immediate authority following enterprise requirements
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RANGE OF VARIABLES

VARIABLE	SCOPE
1. Unproductive animals	1.1. Average Daily Gain (ADG) is low 1.1.1. Too old 1.1.2. Digestive disorders 1.1.3. Diseased or sick animals 1.1.4. Unthrifty animals 1.1.5. Physically deformed /injured animals
2. Animal husbandry practices	2.1. Castration (surgical or elastrator) 2.2. Deworming 2.3. Dehorning 2.4. Dehooving 2.5. Vaccination 2.6. Disbudding 2.7. Putting identification (ear tagging, branding,etc) 2.8. Shearing 2.9. Medication
3. Feeding management	3.1. Cut and carry 3.2. Continuous grazing 3.3. Rapid Rotational grazing (RRG) 3.4. Combination
4. Records	4.1. Production records 4.2. Finished weight of meat-type animals 4.3. Inventory and consumption records 4.4. Financial and sales records 4.5. Health records 4.6. Mortality and disposal records

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Provided assistance in management of meat-type animals 1.2 Fed animals 1.3 Applied basic health care 1.4 Performed work to completion
<p>2. Required Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1 Knowledge, Theory, Practices and Systems Operations <ul style="list-style-type: none"> 2.2.1. Pre-selection process for meat-type animals 2.2.2. Procedures in the preparation of houses 2.2.3. Knowledge of correct feeding and management of growing ruminants meat-type 2.2.4. Implementation of medication program 2.2.5. Culling of unproductive animals 2.2.6. GAHP for raising meat-type animals 2.2.7. Preparation of animals for disposal in market 2.2.8. Disposal of wastes of the operations 2.2.9. OSHS 2.2.10. Record keeping on raising meat-type animals 2.2 Communications <ul style="list-style-type: none"> 2.2.1. Preparation of inventory reports and production records 2.2.2. Following verbal and written instructions 2.2.3. Updating and keeping of data and records 2.3 Mathematics and Mensuration <ul style="list-style-type: none"> 2.3.1. Estimation harvest time (meat-type animals) 2.3.2. Computation of harvest recovery(meat-type animals).. 2.3.3. Feed conversion efficiency 2.3.4. Space requirements at various stages of growth 2.3.5. Provision of right amount of drugs, vaccines and other biologicals 2.3.6. Profitability of the operation 2.4 Safety Practices <ul style="list-style-type: none"> 2.4.1. 5S implementation 2.4.2. Knowledge in handling biologicals and disinfectants base on manufacturers specifications or VET recommendations 2.4.3. Wearing PPE 2.4.4. Practicing OSHS 2.5 Codes and Regulations <ul style="list-style-type: none"> 2.5.1. Appropriate legal regulatory body that supervises the animal industry such as BAI and Phil. Animal Health Center (PAHC), DENR 2.5.2. Occupational Safety and Health Standards. 2.5.3. Good Animal Husbandry Practices (GAHP) 2.5.4. Animal Welfare Act 2.6 Materials, Tools & Equipment: Uses, Specifications and

	<p>Maintenance</p> <p>2.6.1 Tools and Equipment</p> <p>2.6.1.1. Can understand and follow instructional manuals</p> <p>2.6.1.2. Safe keeping of equipments every after use</p> <p>2.6.2 Materials</p> <p>2.6.2.1. Where to source good quality supplies, materials and equipment needed in the rearing dairy type animals</p> <p>2.6.3 Maintenance</p> <p>2.6.3.1. Regular upkeep of equipment and facilities</p> <p>2.6.3.2. Preventive maintenance skills</p> <p>2.7 Values</p> <p>2.7.1. Diligence</p> <p>2.7.2. Time consciousness</p> <p>2.7.3. Honesty in records of sales</p> <p>2.7.4. Confidence in selecting meat-type animals</p> <p>2.7.5. Personal integrity in doing routine management practices</p> <p>2.7.6. Perseverance in executing routine works</p> <p>2.7.7. Ability to work with others harmoniously</p>
3. Required Skills	<p>3.1. Work safety</p> <p>3.2. Simple carpentry and masonry skills</p> <p>3.3. Calculations</p> <p>3.4. Planning skills</p> <p>3.5. Communicate effectively</p>
4. Resource Implications	<p>4.1. Farm area and forage site</p> <p>4.2. Animal house and cage</p> <p>4.3. Weighing scale and other tools, materials and equipment for raising meat-type animals</p> <p>4.4. Medication and nutritional requirements</p> <p>4.5. All workers involved in different activities must be fully oriented and cautioned on the different specific work activities of the farm</p> <p>4.6. Technical supervisors should have skills and ability in the successful implementation of work program activities</p>
5. Method of Assessment	<p>Competency in this unit must be assessed through:</p> <p>5.1. Passing written exam</p> <p>5.2. Practical demonstration</p> <p>5.3. Testimonies of good performance and behavior of applicant by supervisor</p>
6. Context of Assessment	<p>6.1 Competency may be assessed individually in the actual workplace or through accredited farms/institutions</p>

SECTION 3. TRAINING STANDARDS

These guidelines are set to provide the Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for **ANIMAL PRODUCTION (RUMINANTS) NC II**.

3.1 CURRICULUM DESIGN

Course Title: **ANIMAL PRODUCTION (RUMINANTS)** NC Level **NC II**

Nominal Training Duration: 18 hrs – Basic Competencies
 48 hrs – Common Competencies
 240 hrs – Core Competencies

 306 hrs – Total

Course Description:

This course is designed to enhance the knowledge, desirable attitudes and skills of animal production farm worker in accordance with industry standards. It covers maintenance of housing, farm implements and surrounding area, provision of forage, breeding of ruminants, raising dairy animals and raising meat-type animals. It also includes competencies in workplace communication, teamwork, safety in the use of hand tools and equipment, housekeeping and processing of farm wastes.

BASIC COMPETENCIES 18 hours

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Participate in workplace communication	1.1 Obtain and convey workplace information. 1.2 Complete relevant work related documents. 1.3 Participate in workplace meeting and discussion.	<ul style="list-style-type: none"> • Group discussion • Interaction 	<ul style="list-style-type: none"> • Demonstration • Observation • Interviews/questioning
2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team. 2.2 Describe work as a team member.	<ul style="list-style-type: none"> • Discussion • Interaction • 	<ul style="list-style-type: none"> • Demonstration • Observation • Interviews/questioning

3. Practice career professionalism	3.1 Integrate personal objectives with organizational goals. 3.2 Set and meet work priorities. 3.3 Maintain professional growth and development.	<ul style="list-style-type: none"> • Discussion • Interaction • • 	<ul style="list-style-type: none"> • Demonstration • Observation • Interviews/questioning
4. Practice occupational health and safety	4.1 Identify hazards and risks 4.2 Evaluate hazard and risks 4.3 Control hazards and risks 4.4 Maintain occupational health and safety awareness	<ul style="list-style-type: none"> • Discussion • Plant tour • Symposium 	<ul style="list-style-type: none"> • Observation • Interview

COMMON COMPETENCIES

48 hours

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Apply safety measures in farm operations	1.1 Apply appropriate safety measures while working in farm 1.2 Safe keep/dispose tools, materials and outfit.	<ul style="list-style-type: none"> • Self-paced/modular • Lecture/Discussion • Interaction • Practical Demonstration • Visit/tour 	<ul style="list-style-type: none"> • Oral/Written Interviews • Direct Observation • Practical Demonstration
2. Use farm tools and equipment	2.1 Prepare and use farm tools 2.2 Prepare and operate farm equipment 2.3 Perform preventive maintenance procedures/practices	<ul style="list-style-type: none"> • Self-paced/modular • Lecture/Discussion • Interaction • Practical Demonstration • Visit/tour • 	<ul style="list-style-type: none"> • Oral/Written Interviews • Direct Observation • Practical Demonstration
3. Perform estimation and basic calculation	3.1 Perform estimation 3.2 Perform basic workplace calculation	<ul style="list-style-type: none"> • Self-paced/modular • Lecture/Discussion • Interaction • Practical Exercise 	<ul style="list-style-type: none"> • Oral/Written examination • Practical exercise

4. Process farm wastes	4.1 Collect farm wastes 4.2 Identify and segregate wastes 4.3 Treat and process farm wastes 4.4 Perform housekeeping	<ul style="list-style-type: none"> • Self-paced/modular • Lecture/Discussion • Interaction • Practical Demonstration • Visit/tour 	<ul style="list-style-type: none"> • Oral/Written Interviews • Direct Observation • Practical Demonstration
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CORE COMPETENCIES

240 hour

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Maintain housing, farm implements and surrounding area	1.1 Prepare for farm maintenance activities 1.2 Maintain farm and housing facilities 1.3 Apply bio-security measures 1.4 Perform work to completion	<ul style="list-style-type: none"> • Hands- on • Lectures/ Discussion • Videos/ Illustrations • Demonstration 	<ul style="list-style-type: none"> • Written examination • Oral evaluation • Demonstration with questions
2. Provide forage	2.1 Prepare area for forage plantation 2.2 Plant forage species 2.3 Maintain forage plants 2.4 Produce silage 2.5 Perform work to completion	<ul style="list-style-type: none"> • Hands- on • Lectures/ Discussion • Videos/ Illustrations • Demonstration 	<ul style="list-style-type: none"> • Written examination • Oral evaluation • Demonstration with questions
3. Perform breeding of ruminants	4.1 Prepare animal stocks 4.2 Breed ruminants 4.3 Carry-out monitoring activities 4.4 Feed breeding animals 4.5 Apply basic health care 4.6 Perform post-breeding activities	<ul style="list-style-type: none"> • Hands- on • Lectures/ Discussion • Videos/ Illustrations • Demonstration 	<ul style="list-style-type: none"> • Written examination • Oral evaluation • Demonstration with questions
4. Raise dairy animals	5.1 Handle dairy animals 5.2 Rear calves and kids 5.3 Rear dairy-breeder animals 5.4 Complete operations	<ul style="list-style-type: none"> • Hands- on • Lectures/ Discussion • Videos/ Illustrations • Demonstration 	<ul style="list-style-type: none"> • Written examination • Oral evaluation • Demonstration with questions
5. 6. Raise meat-type animals	6.1 Provide assistance in management of meat-type animals 6.2 Feed animals 6.3 Apply basic health care 6.4 Perform work to completion	<ul style="list-style-type: none"> • Hands- on • Lectures/ Discussion • Videos/ Illustrations • Demonstration 	<ul style="list-style-type: none"> • Written examination • Oral evaluation • Demonstration with questions

3.2 TRAINING DELIVERY

The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET.

- The training is based on curriculum developed from the competency standards;
- Learning is modular in its structure;
- Training delivery is learner-centered and should accommodate individualized and self-paced learning strategies;
- Training is based on work that must be performed;
- Training materials are directly related to the competency standards and the curriculum modules;
- Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- Training program allows for recognition of prior learning (RPL) or current competencies;
- Training allows for multiple entry and exit; and
- Training programs are registered with UTPRAS.

The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.
- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer facilitates the training delivery
- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.
- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.
- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, or audio, video or computer technologies.
- Project-Based Instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

3.3 TRAINEE ENTRY REQUIREMENTS

Trainees or students wishing to enroll in this course should possess the following requirements:

- Able to read and write;
- With good moral character;
- Able to communicate, both orally and in writing; and
- Physically fit and mentally healthy as certified by a Public Health Officer

3.1 LIST OF TOOLS, EQUIPMENT AND MATERIALS

ANIMAL PRODUCTION (RUMINANTS) NC II

Recommended list of tools, equipment and materials for the training of 25 trainees for Animal Production (Ruminants) NC II

QTY	TOOLS	QTY	EQUIPMENT	QTY	MATERIALS
3	Weighing scale (1000 kg. cap.) Small ruminants - 200 kg capacity	2	Electric disbudder	25	Medicines (vitamins and anti-biotics)
5	Tattoo pliers, hammer Syringes (5 to 20ml cap.)	2	Electric shearer	25	Dewormer
5	Shovel, wheel barrow	2	Hoof grinder	25	Vaccines and syringes
15	Mineral boxes, waterer, feeding trough	2	Fire extinguisher		
10	Milking pails	1	Foot baths	25 sets	PPE: • Dust coats • Mask • Hand gloves • Boots • Rain coats
5	Ear applicator	1	Forage chopper	50 kilos	Supplemental feeds
5	Elastrator	1	Shredder	25	Ear tags, branding iron
5	Hot iron dehorner	5	Double broiler	3 bot.	Disinfectant
5	Hoof trimmer	1	Stancheon	10 sachet	Detergent
		1	Chute	5 pcs	Scrub
5	Knife cutter	1	Refrigerator	5 pcs	Broom

1	Burdizzo	2 sets	Audio-visual	6 pcs	Trash cans
5 sets	Planting tools	1	Water system	5 bar	Hand soap/sanitizer
5 sets	Carpentry tools	1 (1,000 gal. capacity)	Water tank	1 block	Ice –crushed (for water bath after pasteurization)
12 m	Garden hose			50	Milk bottles
				25 pcs.	Hairnet (milking)
	Models/actual objects			25 pcs.	Working gloves (silage making)
5	Dairy Cattle			25	Disposable gloves (for AI)
5	Beef Cattle			5x 25/ species	Forage planting materials
5	Buffaloes			20 sacks (50 k each)	Organic Fertilizer
5	Dairy goat		Learning Materials		
5	Meat-type goat		Manuals		
5	Sheep		Books		
			References		

3.5 TRAINING FACILITIES

ANIMAL PRODUCTION (RUMINANTS) NC II

Based on a class size of 25 students/trainees

SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS	GRAND TOTAL AREA IN SQ. M
• Building (permanent) with facilities	13.00 x 15.00	195		195
○ Student/Trainee Working Space	2 x 2 per student/trainee	4 per student	100	
○ Lecture Room	8 x 5	40	40	
○ Learning Resource Center	3 x 5	15	15	
○ Kitchen	4 x 5	20	20	
○ Storage room	4 x 5		20	

<ul style="list-style-type: none"> • Animal Housing with facilities <ul style="list-style-type: none"> ○ Milking parlor ○ Corral ○ Drinking and feeding through ○ Pens ○ Silo 	8 x 30	240		240
<ul style="list-style-type: none"> • Farm area (overall area with the building ,animal housing, waste disposal area and other facilities 	10 has.			10 has.
<ul style="list-style-type: none"> ○ Forage and pasture area 	2 has.		2 has.	

3.6 TRAINER'S QUALIFICATIONS FOR AGRICULTURE SECTOR

Trainers who will deliver the training on ANIMAL PRODUCTION (RUMINANTS) NC II should have the following :

- Must be a holder of National TVET Trainer Certificate I (TM I and NC)
- Preferably computer literate
- Must be physically and mentally fit

Reference: TESDA Board Resolution No. 2004 03

3.7. INSTITUTIONAL ASSESSMENT

Institutional assessment is undertaken by trainees to determine their achievement of units of competency . A certificate of achievement is issued for each unit of competency.

SECTION 4 ASSESSMENT AND CERTIFICATION ARRANGEMENTS

4.1. To attain the National Qualification of Animal Production NC II, the candidate must demonstrate competence in all the units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.

4.1.1. Accumulation of Certificates of Competency (COCs) in the following areas:

- 4.1.1.1.1. Maintain housing, farm implements and surrounding area
- 4.1.1.1.2. Provide forage
- 4.1.1.1.3. Perform breeding of ruminants
- 4.1.1.1.4. Raise dairy animals
- 4.1.1.1.5. Raise meat-types animals

Successful candidates shall be awarded Certificates of Competency (COCs) bearing the signature of the Regional Director and Chair of the recognized local industry body.

4.1.2. Demonstration of competence through project-type assessment covering all required units of the qualification.

4.2. Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.

4.3. The following are qualified to apply for assessment and certification:

4.4.1 Graduates of formal, non-formal and informal including enterprise-based training programs

4.4.2 Experienced Workers (wage employed or self-employed)

4.4. The guidelines on assessment and certification are discussed in detail in the Procedures Manual on Assessment and Certification and Guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS).

Supermarket of Competencies AGRI-FISHERY Sector

CORE COMPETENCIES	Produce Vegetables	Service and Repair Business Machines	Perform Post Harvest Operations of Major Lowland and Semi Temperate	Operate and Maintain Mechanical Grain Dryer	Test & Analyze Physico-Chemical Properties of Foods, Agri Products, Water &	Raise Dairy-Animals	Service Tractor's Rear Axle, Front Axle & Brake System	Service Tractor's Hydraulic System	Profile the Market	
	Produce Fruit Bearing Crops	Perform Landscaping Activities	Perform Post Harvest Operations of Major Tropical Fruits	Perform On Farm Grain Post Harvest	Test & Analyze Microbiological Properties of Foods, Agri Products, Water &	Service, Repair & Maintain Crop Post Harvest Equipment	Service Tractor's Clutch & Transmission System	Operate Tilapia Hatchery	Develop Marketing Plan	
	Produce Cut Flowers	Operate Seedling Nursery	Grade and Classify Grain	Control Pest of Stored Grains and Products	Service, Repair & Maintain Crop Production	Assess Farm Resources	Service, Repair & Maintain Small Diesel Engines	Operate Fish Nursery	Develop Marketing Communication Plan	
	Produce Grain Crops	Maintain Housing, Farm Implements and Surrounding Area	Produce Biogas Byproducts	Analyze Foods and Agricultural products	Raise Meat-type Animals	Service Tractor's Engine	Service, Repair & Maintain Small Diesel Engines	Perform Fish or Shrimp Grow Out Operations	Promote Products & Services	
		Provide Forage	Operate and Maintain Rice Mill Equipment	Assist in Aquaculture Operations	Service Tractor's Electrical System	Service Tractor's Steering System	Construct Aquaculture Facilities	Market Agri Products	Produce Compost	
		Manage Farm		Assist in Horticulture Operations	Grow Seaweed	Produce Fuel Byproducts	Operate catfish Hatchery	Perform Breeding of Ruminants		
	Animal Production (Ruminants) NC II									
	COMMON COMPETENCIES	Apply Safety Measures in Farm Operations	Use Farm Tools and Equipment	Perform Estimation and Basic Calculation	Process Farm Wastes					
		Receive and respond to workplace communication	Work with others	Demonstrate work values		Participate in workplace communication	Work in team environment	Practice career professionalism	Practice occupational health and safety procedures	
		Lead workplace communication	Lead small teams	Develop and practice negotiation skills	Solve problems related to work activities	Use mathematical method	Use relevant technologies	Utilize specialized communication skills	Develop team and individual	
		Apply problem solving techniques to workplace		Plan and organize work	Promote environmental protection					
	BASIC COMPETENCIES									

GLOSSARY OF TERMS

Buck – male breeder goat

Buckling –young male breeder ruminant

Bull - an adult male bovine mammal.

Cage Housing – a type or system of poultry housing where layers could be kept alone, by two or in big groups in cage

Calf – a newly born male or female cattle or buffalo

Calving – the act or process of delivering young cattle or buffalo

Castration – act of removing testicles from male animals

Chevon – meat of goat

Colostrum – first milk from a female animal after giving birth

Cow – a mature female cattle

Crossbreed – a group of animals produced by mating two or more different breeds or strains of animals

Culling – is the removal of undesirable or inferior animals in the herd based on important economic traits and overall performance

Doe – female goat that has given birth, usually more than 1 year old

Doeling – female goat that has not given birth, usually less than one (1) year old

Estrus – period of time when the female will accept male. Also known as heat period

Ewe – (pronounced as “you”) female sheep that has already given birth, usually more than one (1) year old

Ewe lamb – female sheep that has not given birth usually less than 1 year old

Gestation period – refers to the period of carrying the young in the womb

Heifer – a young female cattle or buffalo

Hogget – meat of sheep more than one (1) year old but less than two (2) years old

Immunization – prevention of diseases by providing appropriate vaccines to animals

Inbreeding – mating of closely related animals in a herd

Lamb – young goat usually less than 1 year old. Also refers to meat of sheep less than one (1) year old

Lambing – act of giving birth in sheep

Livestock – domestic animals kept for use on a farm and raised for sale and profit

Mutton – meat of sheep more than 2 years old

Nutrients – food elements or substance found in the feeds such as protein, carbohydrates, fats and others

Purebreeding – is the mating of the unrelated individuals in the same breed

Ram – male breeder sheep

Ration – the total amount of feeds taken in by an animal during a 24 hour period

Ruminants – refers to animals with complex digestive system e.g. cattle, carabao, goats and sheep

Selection – refers to the process of choosing males and females with desirable characteristics either for breeding or replacement stocks

Simple stomach/non-ruminant animals – animals that possess simple digestive system e.g. poultry, horse and pigs

Steer – a young male calf one year to 18 months old

Swine – a collective term for hogs

Vaccination – a preventive measure to inoculate an animal with a mildly toxic preparation of bacteria or a virus of specific disease to prevent or to lessen the effects of the disease

Waterer – equipment used in providing water to animals

Weanling – refers to a young animal of either sex which has been separated from the mother at the end of the lactation period

Yearling - An animal that is one year old or has not completed its second year.

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