

ANIMAL HEALTH

LEVEL – IV



CURRICULUM

**Based on March, 2022 Version 1 Occupational
standard (OS)**

April, 2022

Addis Ababa, Ethiopia

Preface

The reformed TVET-System is an outcome-based system. It utilizes the needs of the labor market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. The requirements from the world of work are analyzed and documented – taking into account international benchmarking – as occupational standards (OS).

In the reformed TVET-System, curricula and curriculum development play an important role with regard to quality driven comparable TVET-Delivery. The Curricula help to facilitate the training process in a way, that trainees acquire the set of occupational competences (skills, knowledge and attitude) required at the working place and defined in the occupational standards (OS).

This curriculum has been developed by a group of professional experts from different federal and regional TVET colleges, ministry of labor and skill, Industries and Institutes based on the occupational standard prepared for Animal health Level IV.

The curriculum development process has been actively supported and facilitated by Ministry of Labor and Skills.

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TVET-Program Design

1.1. TVET-Program Title: Animal Health Level IV

1.2. TVET-Program Description

The Program is designed to develop the necessary knowledge, skills and attitude of the trainees to the standard required by the occupation. The contents of this program are in line with the occupational standard. The Trainees who successfully completed the Program will be qualified to work as advanced animal health Technician with competencies elaborated in the respective OS. Graduates of the program will have the required qualification to work in the agricultural sector in the field of animal health.

The prime objective of this training program is to equip the Trainees with the identified competences specified in the OS. Graduates are therefore expected to Apply Veterinary Drug and Chemicals, Perform Minor Surgical and Obstetrical Operations, Carryout Veterinary Clinical Practices, Apply General Laboratory Techniques and Procedures, Carry-out Inspection of Animal Origin Food and Veterinary Public Health Activities, Conduct Prevention and Control of Animal Disease, Perform Animal Quarantine Operation, Carryout poultry health practice, Carryout Animal Husbandry practice and Farm Management, Apply Animal Health Related Legislatives, Guidelines, Standards and Work Ethics, Identify and Handle Diseases of Wild Animals and Develop value chain analysis in accordance with the performance criteria and evidence guide described in the OS.

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1.3. TVET-Program Training Outcomes

The expected outputs of this program are the acquisition and implementation of the following units of competences:

AGR ANH4 01 0322: Apply Veterinary Drug and Chemicals

AGR ANH4 02 0322: Perform Minor Surgical and Obstetrical Operations

AGR ANH4 03 0322: Carryout Veterinary Clinical Practices

AGR ANH4 04 0322: Apply General Laboratory Techniques and Procedures

AGR ANH4 05 0322: Carry-out Inspection of Animal Origin Food and Veterinary Public Health Activities

AGR ANH4 06 0322: Conduct Prevention and Control of Animal Disease

AGR ANH4 07 0322: Perform Animal Quarantine Operation

AGR ANH4 08 0322: Carryout poultry health practice

AGR ANH4 09 0322: Carryout Animal Husbandry and Farm Management

AGR ANH4 10 0322: Apply Animal Health Related Legislatives, Guidelines, Standards and Work Ethics

AGR ANH4 11 0322: Identify and Handle Diseases of Wild Animals

AGR ANH4 12 0322: Develop value chain analysis

1.4. Duration of the TVET-Program

The Program will have duration of 570 hours including the on school/ Institution training and on-the-job practice or cooperative training time. Such cooperative training based on realities of the industry, nature of the occupation, location of the TVET institution, and other factors will be considered in the training delivery to ensure that trainees acquire practical and workplace experience.



s.no	Unit competency	TVET Institution training		Cooperative training	Total hours	Remarks
		Theory	Practical			
1.	Apply Veterinary Drug and Chemicals	32	18	10	60	
2.	Perform Minor Surgical and Obstetrical Operations	24	40	-	64	
3.	Carryout Veterinary Clinical Practices	20	22	10	52	
4.	Apply General Laboratory Techniques and Procedures	22	32	10	64	
5.	Carry-out Inspection of Animal Origin Food and Veterinary Public Health Activities	20	22	12	54	
6.	Conduct Prevention and Control of Animal Disease	20	24	-	44	
7.	Perform Animal Quarantine Operation	16	12	8	36	
8.	Carryout poultry health practice	24	18	10	52	
9.	Carryout Animal Husbandry and Farm Management	24	24	12	60	
10.	Apply Animal Health Related Legislatives, Guidelines, Standards and Work Ethics	20	-	4	24	
11.	Identify and Handle Diseases of Wild Animals	18	8	10	36	
12.	Develop value chain analysis	10	8	6	24	

1.5. Qualification Level and Certification

Based on the descriptors elaborated on the Ethiopian National TVET Qualification Framework (NTQF) the qualification of this specific TVET Program is Level IV. The trainee can exit after successfully completing the modules in one level and will be awarded the equivalent institutional certificate on the level completed. However, only institutional certificate of training accomplishment will be awarded.

1.6. Target Groups

Any citizen who meets the entry requirements under items 1.7 and capable of participating in the training activities is entitled to take part in the Program.

1.7 Entry Requirements

The prospective participants of this program are required to take all competencies of level III, have minimum passing point and possess the requirements or directive of the Ministry of Labor and Skills.

Mode of Delivery

This TVET-Program is characterized as a formal Program on middle level technical skills. The mode of delivery is co-operative training. The time spent by the trainees in the real work place/ industry will give them enough exposure to the actual world of work and enable them to get hands-on experience.

The co-operative approach will be supported with school-based lecture-discussion, simulation and actual practice. These modalities will be utilized before the trainees are exposed to the industry environment.

Hence based on the nature of the occupation, location of the TVET institutions, and interest of the industry alternative mode of cooperative training such as apprenticeships, internship and traineeship will be employed. In addition, in the areas where industry is not sufficiently available the established production and service centers/learning factories in TVET institutions will be used as cooperative training places. The Training-Institution and identified companies have forged an agreement to co-operate with regard to the implementation of this program.

1.9. TVET-Program Structure

Unit of Competence	Module Code & Title	Training Outcomes	Duration (In Hours)
<u>AGR ANH4 01 0322</u> Apply Veterinary Drug and Chemicals	<u>AGR ANH4 M01 0422</u> Applying Veterinary Drug and Chemicals	<ul style="list-style-type: none"> Acquire basic knowledge in pharmacology Apply therapeutics drugs based on causative agent and body system Identify and administer biological fluids Store and dispense veterinary drugs and chemicals apply stock control and clinic security 	60
<u>AGR ANH4 02 0322</u> Perform minor surgical and obstetrical operations	<u>AGR ANH4 M02 0422</u> Performing minor surgical and obstetrical operations	<ul style="list-style-type: none"> Perform minor surgical operations Perform Obstetrical and gynecological surgical operation Provide post- surgical operative care and owner advice 	64
<u>AGR ANH4 03 0322</u> Carryout veterinary clinical practices	<u>AGR ANH4 M03 0422</u> Carrying out veterinary clinical practices	<ul style="list-style-type: none"> perform general and systemic clinical examination Prepare and Provide basic treatment to clinical cases Provide post treatment advice to the owner and case follow up 	52
<u>AGR ANH4 04 0322</u> Apply General Laboratory Techniques and	<u>AGR ANH4 M04 0422</u> Applying General Laboratory Techniques and	<ul style="list-style-type: none"> Carry out Sample Collection, Preservation, and Shipment Conduct general laboratory procedures 	64

Procedures	Procedures	<ul style="list-style-type: none"> Accomplish close up tasks in the laboratory 	
<p><u>AGR ANH4 05 0322</u> Carry-out Inspection of Animal Origin Food and Veterinary Public Health Activities</p>	<p><u>AGR ANH4 M05 0422</u> Carry-out Inspection of Animal Origin Food and Veterinary Public Health Activities</p>	<ul style="list-style-type: none"> Develop knowledge of public health issues associated with food of animal origin Acquire knowledge on abattoir and abattoir hygiene conduct ante mortem examination and supervise slaughtering process Conduct post-mortem examination and follow up maintenance of cold chain Conduct Sampling and quality assessment for food of animal origin Perform community awareness on veterinary public health issues 	54
<p><u>AGR ANH4 06 0322</u> Conduct Prevention and Control of Animal Disease</p>	<p><u>AGR ANH4 M06 0422</u> Conducting Prevention and Control of Animal Disease</p>	<ul style="list-style-type: none"> Develop basic understanding on disease prevention and control Apply bio security protocols to people, animals and equipment Identify and implement Prophylaxis's measures Design and implement vaccination program Disease outbreak investigation and report writing Participate the community in animal disease prevention 	44

<u>AGR ANH4 07 0322</u>	Perform Animal Quarantine Operation	<u>AGR ANH4 M07 0422</u>	Performing Animal Quarantine Operation	<ul style="list-style-type: none"> • Understanding and Carry out animal quarantine activities. • Carry out samples collection and decisions on a quarantined animal and their products • Wastes disposal and report quarantine data 	36
<u>AGR ANH4 08 0322</u>	Carryout poultry health practice	<u>AGR ANH4 M08 0422</u>	Carryout poultry health practice	<ul style="list-style-type: none"> • Develop understanding of poultry production and health • Identify and handle infectious disease of poultry • Identify and handle non infectious causes of poultry diseases • Implement poultry health management and bio security 	52
<u>AGR ANH4 09 0322</u>	Carryout Animal Husbandry practice and Farm Management	<u>AGR ANH4 M09 0422</u>	Carrying out Animal Husbandry practice and Farm Management	<ul style="list-style-type: none"> • Apply dairy farm Husbandry practice and management • Apply beef Farm/feedlot Husbandry practice and management • perform small ruminant Farm/pig farm Husbandry practice and management • Apply fish production and management • carryout honey Bee production and management 	60

<u>AGR ANH4 10 0322</u>	Apply Animal Health Related Legislatives, Guidelines, Standards and Work Ethics	<u>AGR ANH4 M10 0422</u>	Applying Animal Health Related Legislatives, Guidelines, Standards and Work Ethics	<ul style="list-style-type: none"> • Identify and Apply Animal Health Related Legislative and Guidelines • Understudy and Apply Animal health related Standards and Livestock Emergency Guidelines and Standards (LEGS) • Identify and follow Animal Health Work Ethics 	24
<u>AGR ANH4 11 0322</u>	Identify and Handle Diseases of Wild Animals	<u>AGR ANH4 M11 0422</u>	Identifying and Handling Diseases of Wild Animals	<ul style="list-style-type: none"> • Acquire basic information on wild animals and parks • Identify and handle major infectious disease of wild animals • Identify and handle non-infectious disease of wild animals 	36
<u>AGR ANH4 12 0322</u>	Developing value chain analysis	<u>AGR ANH4 M12 0422</u>	Developing value chain analysis	<ul style="list-style-type: none"> • Understand concepts of value chain • Identify Value chain analysis • Develop value chain • Upgrade value addition 	24

The time duration (Hours) indicated for the module should include all activities in and out of the TVET institution.

1.10 Institutional Assessment

Two types of evaluation will be used in determining the extent to which training outcomes are achieved. The specific training outcomes are stated in the modules. In assessing them, verifiable and observable indicators and standards shall be used.

The *formative assessment* is incorporated in the training modules and form part of the training process. Formative evaluation provides the trainee with feedback regarding success or failure in attaining training outcomes. It identifies the specific training errors that need to be corrected, and provides reinforcement for successful performance as well. For the teacher, formative evaluation provides information for making instruction and remedial work more effective.

Summative Evaluation the other form of evaluation is given when all the modules in the program have been accomplished. It determines the extent to which competence have been achieved. And, the result of this assessment decision shall be expressed in the term of institutional Assessment implementation guidelines..

Techniques or tools for obtaining information about trainees' achievement include oral or written test, demonstration and on-site observation.

1.11 TVET Teachers Profile

The teachers conducting this particular TVET Program are required to have above a minimum of B Level and above have satisfactory national competence assessment with practical experiences or equivalent qualifications.

LEARNING MODULE 01	
TVET-PROGRAMME TITLE: Animal Health Level IV	
MODULE TITLE: Applying Veterinary Drug and Chemicals	
MODULE CODE: <u>AGR ANH4 M01 0422</u>	
NOMINAL DURATION: 60 Hours	
<p>MODULE DESCRIPTION: This module covers the knowledge, skill and attitude required to use, control, prescribe, administer veterinary drug and manage associated risk management procedures according to organizational guidelines and procedures in veterinary service. It also covers the knowledge and skill required to store, dispense veterinary drug/chemical as well as apply activities of stock control and clinic security.</p>	
<p>LEARNING OUTCOMES</p> <p>At the end of the module the trainee will be able to:</p> <p>LO1. Acquire basic knowledge in pharmacology</p> <p>LO2. Apply therapeutics drugs based on causative agent and body system</p> <p>LO3. Identify and administer biological fluids</p> <p>LO4: Store and dispense veterinary drugs and chemicals</p> <p>LO5: Apply stock control and clinic security</p>	
<p>MODULE CONTENTS:</p> <p>LO1. Acquire basic knowledge in pharmacology</p> <ol style="list-style-type: none"> 1.1 Introduction to pharmacology and rational drug use 1.2 Causes, characteristics and implications of irrational drug use 1.3 Basic information on nomenclature of drugs 1.4 Veterinary drug dosage forms, dose calculations and routes of administration 1.5 Drug prescription and pharmacological abbreviations 1.6 The fate and mechanisms of actions of drugs 1.7 Pharmacokinetics and pharmacodynamics of veterinary drugs <p>LO2. Apply therapeutics drugs based on causative agent and body system</p> <ol style="list-style-type: none"> 2.1 Use of veterinary drugs and control of drug hazards 2.2 Administration of preventive and treatment drugs and fluids 2.3 Implementation of OHS procedures as of Ethiopian VDFACA 2.4 Classification of drugs acting on the different body system 2.5 Veterinary drugs and chemicals for various diseases 	

2.6 Environmental health policies and legislations to wastes dispose

LO3. Identify and administer biological fluids

3.1 Fluids therapy for injured/ diseased animals

3.2 Dose and frequency of biological fluid

LO4: Store and dispense veterinary drugs and chemicals

4.1 PPE and equipment for storing and dispensing drugs

4.2 Handling and dispensing of Pharmaceutical Products

LO5: Apply stock control and clinic security

5.1 Principles of veterinary medical ethics

5.2 Stock control and inventory of veterinary drugs

5.3 Veterinary clinic security measures

LEARNING METHODS:

- Lecture and Discussion
- Demonstration
- Field visit

ASSESSMENT METHODS:

- Written examination
- Practical demonstration
- Individual and group assignement
- Oral questioning

ASSESSMENT CRITERIA:

LO.1: Acquire basic knowledge in pharmacology

- Technical terms in pharmacology and rational drug use are mentioned and described.
- Characteristics of irrational drug use are mentioned.
- Causes and implications associated with irrational drug use are mentioned and described.
- General information on Nomenclature of drugs is gained.
- Dosage forms of drug are mentioned and dose calculations of veterinary drug are explained
- Routes of drug administration are mentioned indifferent species of animals for different types of drugs.
- Drug prescription and pharmacological abbreviations in prescription are described.
- The concept of pharmacokinetics and dynamics of veterinary drugs are explained.

LO.2 Apply therapeutics drugs based on causative agent and body system

- Hazards in handling and use of veterinary drugs are recognized and reported to designated personnel according to organizational policies and procedures.
- OHS procedures are implemented in accordance with the Ethiopian Drug and Feed Administration and Control Authority.
- Drugs acting on the different body systems are identified and listed.
- Category, mechanism of action, dosage form, dose, route of administration, therapeutic indication, side effect, residual effect and contraindication of commonly available veterinary drugs and chemicals for various disease causing agents are mentioned and explained.
- Prescription is prepared .based on the rational diagnosis of the disease and implemented
- Wastes are disposed in line with environmental health policies and legislations.

LO.3: Identify and administer biological fluids

- Appropriate fluids for therapy of injured/ diseased animals are identified and prepared.
- Dose and frequency of biological fluid are calculated.
- Fluid therapy is administered for controlling metabolic diseases and as supplement for needy animals as prescribed according to organizational treatment protocol.
- Record is kept in and reported to the supervisor

LO.4: Store and dispense veterinary drugs and chemicals

- PPE clothing and equipment relevant in storing and dispensing drugs/chemical are used in accordance with organizational policies and procedures.
- Medicines and chemicals are stored in accordance with the manufacturer's specification or datasheet.
- Medicines are protected from environmental conditions that may damage or degrade them such as light, temperature and humidity according to the organizational guideline.
- Organizational operating guidelines are used in the handling and dispensing of drugs.

LO 5: Apply stock control and clinic security

- Regular inventory of veterinary supplies and medicines is taken according to clinic policies.
- Medicines and supplies are ordered under direction of the duty veterinarian and qualified veterinary nurse.
- Clinic stocks are checked as they are received against quantities ordered and priced.
- Drugs are handled and stored securely in accordance with clinic and legislative requirements; legislative requirements relating to the handling, storage and security of drugs, including dangerous drugs should be considered
- Clinic security measures are used in accordance with clinic procedures.



Annex: Resource Requirements

AGR ANH4 M01 0422: Applying Veterinary Drug and Chemicals				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio
A. Learning Materials				
1.	TTLM	Prepared by the trainer	25 Pcs	1:1
2.	Reference Books			
2.1	Pharmacokinetic/pharmacodynamic relationships of antimicrobial drugs used in veterinary medicine	McKellar, <i>et al.</i> , 2004	5 Pcs	1:5
2.2	History and Current Use of Antimicrobial Drugs in Veterinary Medicine	Prescott., 2017	5 Pcs	1:5
2.3	Saunders handbook of veterinary drugs	Papich M. G., 2007	5 Pcs	1:5
2.4	Veterinary helminthology	AM Dunn., 1969	5 Pcs	1:5
2.5	Nutrition and feeding of organic poultry	R Blair - 2018	5 Pcs	1:5
3.	Reference manuals	<ul style="list-style-type: none"> • ILRI manuals and researches • EVA journals/ Magazines • International or national journals • DACA manual 	5	1:5
4.	Videos or Audio video lecture	Online	1	1:25
5.	Bulletins, Data sheet, Diagrams, sketches.	To be prepared by the trainer or organization	2	1:13
B. Learning Facilities and Infrastructure				
1.	Lecture room	56m ²		
2.	Virtual library (LCD, project and CD)	1.7m ²		
3.	Open air clinic			1:25
4.	Laboratory room			1:25
5.	Smart room	LCD, CD, Computer and Projector		1:25



6.	Drug store and veterinary pharmacy			
C.	Consumable Materials			
1.	Cleaning and disinfecting chemicals	Ethanol alcohol	2 ltr	1: 13
		Isopropyl alcohol	2 ltr	1: 13
		Barakina	2 ltr	1: 13
		Glutaraldehyde	2 ltr	1: 13
		Hydrogen peroxide	2 ltr	1: 13
2.	Gauze	Sterile and Roll cotton and gauze	2 roll	1:13
3.	Surgical and latex glove	Sterile and packed glove	1 pack	1:1
4.	Normal saline		2 ltr	
5.	Dextrose (sugar) in water		2 ltr	
6.	Acetaminophen (Tylenol)		2 vial	
7.	Non- steroidal anti-inflammatory drugs	ibuprofen.naproxen, diclofena	2 pack	
8.	Emulsion	Propofol, vitamins	2 vial	
D.	Tools and Equipment			
1.	Personal protecting equipment	Bee-proof overalls and gloves, Steel capped boots/shoes, Sunhats, Bee veils and Sunscreen lotion	25 Pcs	1:1
2.	Needle and syringes		2 pack	1:13
3.	Stomach tube		2 pcs	1:13
4.	Brushes		1 pcs	1:8
5.	Crimpers		1 pcs	1:8
6.	Funnels		1 pcs	1:8
7.	Ointment Slabs		3 pcs	1:8
8.	Scoops & Spoons		3 pcs	1:8
9.	Sieves		3 pcs	1:8
10.	Spatulas		3 pcs	1:8
11.	Stirring Rods		3 pcs	1:8
12.	Strainers		3 pcs	1:8
13.	Tongs		3 pcs	1:8
14.	Tweezers & Forceps		3 pcs	1:8
15.	Brushes		3 pcs	1:8

LEARNING MODULE 02	
TVET-PROGRAMME TITLE: Animal Health Level IV	
MODULE TITLE: Performing Minor Surgical and Obstetrical Operations	
MODULE CODE: <u>AGR ANH4 M02 0422</u>	
NOMINAL DURATION: .64 Hours	
MODULE DESCRIPTION: This Module covers knowledge, skills and attitude required to carry out surgical and obstetrical operations, post-surgical patient care, application of suture patterns and knots and Administration of local and regional anesthesia. It also covers the knowledge and skills of proper application of euthanasia to humanely kill severely injured animals with incurable disease	
<p>LEARNING OUTCOMES</p> <p>At the end of the module the trainee will be able to:</p> <p>LO1. Perform minor surgical operations</p> <p>LO2. Perform Obstetrical and gynecological surgical operation</p> <p>LO3. Provide post- surgical operative care and owner advice</p>	
<p>MODULE CONTENTS:</p> <p>LO1. Perform minor surgical operations</p> <p>1.1 . Implement safe work practices and OHS procedures</p> <p>1.2 . Identify and implement pre-surgical considerations</p> <p>1.3 . performing preoperative preparations</p> <p>1.4 . Executing minor surgical operations</p> <p>1.4.1. Correction of prolapsed rectum</p> <p>1.4.2. Correction of simple bone fractures</p> <p>1.4.3. Trocharization of rumen</p> <p>1.4.4. Canalization of atresia ani</p> <p>1.4.5. Tumor extraction</p> <p>1.4.6. Rumenotomy (in some circumstance)</p> <p>1.4.7. Hernia correction(herneoraphy)</p> <p>1.4.8. Hoof trimming, Dehorning and Tail docking</p> <p>1.5 . Providing Surgical Assistance</p> <p>LO2. Perform Obstetrical and gynecological surgical operation</p> <p>2.1 . Gross anatomy of female and male animal reproductive organ</p> <p>2.2 . Preparation of obstetrical operative tools and equipment</p>	

- 2.3 . Methods and indications of castration
- 2.4 . Causes and management approaches of dystocia
- 2.5 . Management of retained placenta, uterine and vaginal prolapse
- 2.6 . Assisting of surgical removal of uterus and/or ovary
- 2.7 . Correction of phimosis and paraphimosis
- 2.8 . Introduction of urethral and uterine catheter
- 2.9 . Teat canalization and drug infusion

LO3. Provide post- surgical operative care and owner advice

- 3.1 . Performing patient care and monitoring surgical operation
- 3.2 . Apply different Suture patterns and knots on opened surgical sites
- 3.3 . Responding post-operative surgical complication
- 3.4 . Applying post-operative treatments
- 3.5 Cleaning and waste disposal
- 3.6 . Giving advice to owners of the patient

LEARNING METHODS:

- Lecture
- Group discussion
- Practical démonstration
- Simulation

ASSESSMENT METHODS:

- Written test
- Interview /Oral question/
- Practical demonstration
- Group and individual assignments

ASSESSMENT CRITERIA:

LO.1. Acquire basic knowledge on veterinary surgery

- Safe work practices and OHS procedures for surgical operations, and work place policies are implemented
- Pre-surgical considerations are identified and implemented to identify the problem and plan the type of minor surgery
- Preoperative preparations of surgical materials, work area, the surgeon, the animal and site of surgical correction are accomplished
- Minor Surgical operations are executed depending up on the identified problem/disorder and intension of the surgeon-owner on different farm animals following the organizational surgical operation protocol
- Surgical Assistance is provided during operation as required by the veterinary surgeon and according to the organizational work protocol.

LO2. Perform preoperative surgical preparations

- Gross anatomy of female and male animal reproductive organ are illustrated and explained.
- Obstetrical operative tools and equipment are identified and prepared depending upon the type of correction or surgical procedure
- Indications and different methods of castration in male animals are performed
- Different causes of dystocia are mentioned and approaches in dystocia management are implemented
- Management of uterine prolapse, vaginal prolapse and correction of foetal membrane retention are performed following OHS procedures
- Surgical removal of uterus and/or ovary are assisted to the surgeon veterinarian in cases of small animal surgery and in especial cases of indications in large animals
- Correction of phimosis and paraphimosis are implemented following standard surgical guidelines and OHS rules
- Introduction urethral and uterine catheter is performed in some indications
- Teat canalization and drug infusion are carried out in the treatment of mastitis

LO3. Provide post- surgical operative care and owner advice

- Patient care and monitoring during surgical operation is performed based on the principles of surgical operation

- Different Suture patterns and knots are applied on opened surgical sites as required by surgical operation protocol
- Post-operative surgical complication are recognized and responded immediately
- Advice is given to patient owners based on the surgical procedures and the case requirement
- Fluid therapy, medication, dressings, bandages and oxygen are applied to animals as required according to the organizational treatment protocol
- Maintenance and cleaning of work area and materials after operation and Wastes are disposed according to recommended hygiene Standards and environmental policy



Annex: Resource Requirements

AGR ANH4 M02 0422 : Performing Minor Surgical and Obstetrical Operations				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A	Learning Materials			
1.	TTLM	Prepared by the trainer	25 pcs	1:1
2.	Reference Books			
2.1.	Farm Animal Surgery	Fubini & Ducharme (2016), 2nd ed.	5 pcs	1:5
2.2.	Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice	Townsend <i>et al.</i> (2007)	5 pcs	1:5
3.	Manual			
3.1.	Minor Surgery Manual	MiaCrupper,2016	5 pcs	1:5
3.2.	Skills in Minor Surgical Procedures for General Practitioners	Blanco and Tejero, 2012	5 pcs	1:5
B.	Learning Facilities and Infrastructure			
1.	Class room	56m ²		1:25
2.	Veterinary clinic			1:25
3.	Surgery laboratory			1:25
4.	Isolation room			As required
5.	Anatomical model	For different species		As required
6.	Audiovisual room	CD, DVD, LCD, Computer, Internet		1:25
7.	Library	With full facility		1:25
C.	Consumable Materials			
1.	Chemical			
1.1.	Detergents	House hold bleach and Soap	5 ltr each	1:5
1.2.	Disinfectants	Formalin and alcohol	5 ltr	1:5
1.3.	Antiseptics	Tincture of iodine savlon and H ₂ O ₂	5 ltr	1:5



1.4.	Anaesthesia	Lidocaine, ketamine, Atropine sulphate, diazepam, Acepromazine, Promazine and xylazine	4 vial each	As required
1.5.	Hormones	Oxytocin, Prostaglandin F _{2α}	2 vials	
2	Record book		2 pcs	1:13
D	Tools and Equipment			
1.	PPE	Boots, hat, coverall, apron, respirator, facemask, eye goggle, gloves	25 pcs	1: 1
2	Hypodermic syringe and needle		2 pack	1:13
3	Surgical kit	Scissor, blade, forceps, suture materials (absorbable and non-absorbable) and needle, gauze, cotton, towel, surgical tray	1kit	
4	Hoof instrument	Picker, trimmer and knife		As required
5	Burdizo and emasculator	Small and large	3 pcs each	1:8
6	Trocar and cannula		3 pcs	1:8
7	Dehorning wire		1 roll	1:25
8	Teat instrument kit		1 kit	1:25
9	Obstetrical kit		1 kit	1:25
10	catheter	IV, uretral, urethral	4 pcs	
5	Surgical lamp	Shadow less lamp	2 pcs	1:13
6	Surgical bed		2 pcs	1:13

LEARNING MODULE 03	
TVET-PROGRAMME TITLE: Animal Health Level IV	
MODULE TITLE: Carrying out Veterinary Clinical Practices	
MODULE CODE: <u>AGR ANH4 M03 0422</u>	
NOMINAL DURATION: 52 Hours	
MODULE DESCRIPTION: This Module covers the knowledge, skills and attitude required to Conduct general and confirmatory diagnosis as well as provide more advanced treatment to clinical cases of veterinary cases. It also comprises knowledge and skill to conduct post treatment advice to the owner of animals.	
LEARNING OUTCOMES At the end of the module the trainee will be able to: LO1. Conduct general and confirmatory diagnosis of veterinary cases LO2. Provide treatment to clinical cases LO3. Provide post treatment advice to the owner and case follow up	
MODULE CONTENTS: LO.1 Conduct general and confirmatory diagnosis of veterinary cases 1.1. Reception duties 1.2. General and systemic clinical examination 1.3. Establish disease diagnosis LO.2 Provide treatment to clinical cases 2.1. Safe animal restraining 2.2. Preparation of treatment equipment and materials 2.3. Drug dose calculation and treatment of animals 2.4. Diseased animal Isolation 2.5. Application of disease prevention programs LO.3 Provide post treatment advice to the owner and case follow up 3.1 Post treatment monitoring of animal 3.2 Environmental implications to treated animals 3.3 Cleaning of equipment and waste disposal 3.4 Record keeping	
LEARNING METHODS:	
<ul style="list-style-type: none"> • Lecture and Discussion 	



- Démonstration
- Field visit
- Audio Visual method
- Case study

ASSESSMENT METHODS:

- Written examination
- Oral questioning
- Individual and group assignments
- Practical demonstration
- Clinical attachment

ASSESSMENT CRITERIA:

LO.1 Conduct general and confirmatory diagnosis of veterinary cases

- Reception duties are performed to owner and information history of the case as well as to admit the patient animal
- Distant examination of the animal is performed to identify abnormal animal behaviour, gait abnormality, feeding and watering of the patient animal.
- Stepwise and detailed cranio-caudal close physical examination of the animal is conducted to identify signs of illness or injury.
- Tentative decision on the cause of the problem is given based on the information in the clinical examination.
- Sample specimen are collected and examined when confirmation is required.
- Definitive decision on the cause of the disease is defined.

LO.2 Provide treatment to clinical cases

- Animals are safely handled and restrained without causing harm or injury to animal or handler.
- Treatment equipment, materials and the right choice of the drug are selected and prepared based on the finding of detailed clinical as well as laboratory examination.
- Drug dose, dosage form, route of administration, and frequency of the drug are determined after drug dose calculation and based on manufacturer instruction.
- Authorised animal treatments are administered hygienically and consistently according to manufacturer's specifications or veterinary advice.
- Treated animals are identified from non-treated animals to ensure compliance against the required Withholding Period (WHP).
- Preventative medicine programs for external and internal parasites and microorganisms are implemented following the enterprise guidelines.

LO.3 Provide post treatment advice to the owner and case follow up

- Animal health and condition are monitored post-treatment and abnormalities are reported according to enterprise guidelines.
- Follow up of diseased and/or treated animals is performed according to the enterprise requirements.
- Environmental implications associated with the treatment of animals are identified, assessed and controlled according to enterprise requirements.

- Equipment and worksite are cleaned and waste, including animal residues, is disposed of according to OHS and enterprise guidelines.
- Health treatments are stored to manufacturers recommendations, industry and enterprise requirements.
- Relevant information is documented according to industry and enterprise requirements.



Annex: Resource Requirements

AGR ANH4 M03 0422: Carrying out Veterinary Clinical Practices				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A. Learning Materials				
1.	TTLM	Prepared by the trainer	25 pcs	1:1
2	Reference Books			
2.1	Veterinary Clinical Procedures in Large Animal Practice	Jody Rockett and Susanna Bosted, 2006	5 pcs	1:5
2.2	Veterinary Technician's Large Animal Daily Reference Guide	Andrea, A and Jossica, 2012	5 pcs	1:5
3.	Work place Guideline and manuals	Prepared by trainers/Colleges	12 pcs	1:2
4	Audio Visual	CD/VCD/LCD	1 pcs	1:25
4.	Journals/Publication/Magazines	International or national veterinary journals/Online/	1 pcs	1:1
B. Learning Facilities and Infrastructure				
1.	Lecture room	Concrete block 1.2m ² /trainee	1 pcs	1:25
2.	Well-equipped Computer Room	Concert block	1 pcs	1:25
3.	Farm	Shoat farm, dairy and beef farm, poultry farm	1 pcs	1:25
4	veterinary clinic	Equipped with crush and other restraining materials	1 pcs	
5	Pathology and microbiology Laboratory room with full equipment	Concrete block	1 pcs	1:25
6	Well equipped library/ebook/	Concrete block with 1.7m ² /trainee	1 pcs	1:25
C. Consumable Materials				
1.	Stationary materials	Pens, paper, pencils/ Marker, Chalk	2Packs /1Gros	As per required



			s	
2	Cleaning and disinfecting chemicals	House hold bleach	1kg	---
		Ethanol alcohol	4lts	1:6
		Povidone and tincture iodine	2 lts	1:12
		Savlone	4 lts	1:6
		Soaps	1 pack	1:2
3	Chemical restraints	Lidocaine	2Vial each	
		Xylazine		
		Acepromazine		
D. Tools and Equipment				
1.	Ropes	Synthetic/ organic rope	5 pcs	1:5
2	Crush	Stainless steel	1pcs	1:25
3	Bull holder	stainless steel	5 pcs	1:7
4	Chain and mesh wire	stainless steel	5 pcs	1:5
5	Pole	Wood/metal	1 pcs	1:25
6	Poultry cage	Plastic/wire/wood	5 pcs	1:5
8	Personal protective equipments	Boots	25 pcs each	1:1
		hats/hard hat		
		coveralls		
		Gloves in packet	3 pcs	1:1
9	Document camera, Audio video input, computer, network connectivity, LCD and amplifier	---	1 pcs	1:25
10	Microscope with its full accessories	Compound and stereo microscope	5 pcs	1:5
11	Gown	White color	25 pcs	1:1

LEARNING MODULE 04	
TVET-PROGRAMME TITLE: Animal Health Level IV	
MODULE TITLE: Applying General Laboratory Techniques and procedures	
MODULE CODE: <u>AGR ANH4 M04 04 22</u>	
NOMINAL DURATION: 64 Hours	
<p>MODULE DESCRIPTION: This module covers the knowledge, skills and attitude required to collect preserve and transport the right sample to the laboratory, process laboratory specimen for test and performing basic laboratory tests. The work functions within this unit require the demonstration of relevant theoretical knowledge and skill to conduct preparation and processing of lab specimen, to conduct basic staining tests, microscopic examination and analysis and reporting of results.</p>	
<p>LEARNING OUTCOMES</p> <p>At the end of the module the trainee will be able to:</p> <p>LO1. Carry out Sample Collection, Preservation, and Shipment</p> <p>LO2. Conduct general laboratory procedures</p> <p>LO3. Accomplish close up tasks in the laboratory</p>	
<p>MODULE CONTENTS:</p> <p>LO1. Carry out Sample Collection, Preservation, and Shipment</p> <ul style="list-style-type: none"> 1.1 Relevant laboratory rules and guidelines 1.2 Determination of specimen type and collection of sample 1.3 Preparing materials and PPE 1.4 Identification and preparation of sampling site 1.5 Sample labeling, preserving and handling specimens 1.6 Risks in sample collection and handling <p>LO2. Conduct general laboratory procedures</p> <ul style="list-style-type: none"> 2.1 Laboratory safety precautions, equipment and hazardous chemical 2.2 preparing working solutions, reagents and solvent 2.3 Laboratory sample handling and preparation 2.4 Basic laboratory tests <ul style="list-style-type: none"> 2.4.1. Smear preparations 2.4.2. Hematological examination 2.4.3. Parasitological examinations 	



2.4.4. Bacteriological examinations

2.5 Recording, calculation, interpretation and reporting of the test result

LO3. Accomplish close up tasks in the laboratory

3.1 Segregate, treat and disposal wastes

3.2 cleaning and storage of laboratory materials

LEARNING METHODS:

- Lecture
- Group discussion
- Practical demonstration
- Audio visual
- Cooperative training

ASSESSMENT METHODS:

- Written examination
- Group/individual assignment with presentation
- Practical demonstration
- Oral questioning

ASSESSMENT CRITERIA:

LO1. Carry out Sample Collection, Preservation, and Shipment

- Nature of specimen required to be collected is determined based on the tentative diagnostic finding in clinical examination or case report.
- Supplies, materials and PPE needed for specimen collection, preservation and transport are identified and prepared in accordance with organizational policies and procedures.
- Work area, animal and sampling site are identified and prepared to protect the integrity of the sample according to the operational guideline.
- Specimens from animals are collected ethically and following its procedure and according to the animal welfare code and its recommended procedure
- The sample are labelled and recorded for clear identification according to the operational guideline.
- The specimens are handled and preserved in manners that maintain its integrity and minimize the spread of pathogens to animals and human.
- The samples Packaging and transportation are performed following the requirements of recipient laboratory and OIE recommendations.
- Risks in sample collection and handling are recognized and reported to designated personnel.

LO2. Conduct general laboratory procedures

- Personal hygiene and cleanliness standards are maintained as per organisational policies and procedures.
- Appropriate safety precautions are followed for use of laboratory equipment and hazardous chemical materials in accordance with OHS and organisational policies
- . Working solutions, reagents and solvent of specified purity are selected and prepared based on the requirements of test to be carried out.
- The specimens are handled in a manner that minimise the spread of pathogens to humans according to the organizational regulation.
- Samples are prepared for examination according to the requirements of the test to be carried out and the laboratory operational guideline.
- Basic laboratory tests for identification of parasitic and microbial infections are conducted in accordance with enterprise procedures.

- Observation/Examination and decision of the test result is performed.
- Recording, calculation, interpretation and reporting of the test result is carried out.

LO3. Accomplish close up tasks in the laboratory

- Disposable and non-disposable materials used for laboratory examination are segregated. Disposable materials that are used in the test process are collected, treated and disposed following laboratory guidelines and precautions.
- Reusable laboratory materials are collected, cleaned and stored following laboratory guidelines and precautions.
- Fixed laboratory materials used in the examination process and laboratory room are cleaned following laboratory guidelines and precautions.

Annex: Resource Requirements

<u>AGR ANH3 M04 0422: Applying General Laboratory Techniques and procedures</u>				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A. Learning Materials				
1	TTLM and hand outs	Prepared by the trainer	25pcs	1: 1
2	Reference Books			
2.1	Laboratory manual for laboratory procedure for veterinary technician	Margi S. <i>et al.</i> , 2014, 6 th ed	5 pcs	1: 5
2.2	Veterinary Parasitology	Mike A. <i>et al.</i> , 2016 4 th ed	5 pcs	1: 5
3	Reference and technical manuals	Standard Laboratory guideline manuals prepare by trainer/organization	5 pcs	1: 5
4	written graphical and diagrams or sketches	Prepared by trainer, government /organization	2 pcs	1: 13
5	Journals/Publication/Magazines	Parasitological laboratory technique Kassa <i>et al.</i> , 2016	5 pcs	1:5
B. Learning Facilities and Infrastructure				
1.	Well Equipped Lecture Room	56m ²		1:25
2.	Virtual library with multimedia (LCD project, computer, and CD)	1.7m ² /trainee		1:25
3.	Parasitological laboratory	standardized		1:25
4	Bacteriological laboratory	standardized		1:25



5	Live animals	Poultry, cattle, shoat, donkey, dog, cat, camel, swine, horse	1 each	
C. Consumable Materials				
1.	Detergents	House hold bleach , Soap	1kg	
2	Laboratory chemicals	savlone, alcohol, hydrogen peroxide, NaCl solution, sugar solution, MgSO4, ZnSO4, solvents, acids, bases	3 kg(ltr) each	As required
3	Laboratory reagents	Giemsa, methylene blue, crystal violet, grams' iodine, carbol fuschin, safranin,		
2	Disinfectants and antiseptics	Ethanol	1 ltr	As required
		Formaline	2 ltr	
		Povedine iodine	1ltr	
		Methanol	1 ltr	
D. Equipment and Materials				
1	Personal protective equipment	Gloves	5 pack	1:5
		Gown or overalls	25 pcs	1:1
		Face mask	25 pcs	1:1
		Boots	25 pair	1:1
2	Laboratory equipment	Microscope, slides, cover slips, laboratory benches, tables, Bunsen burners, loops, balances, centrifuges, incubators, photo-meters, haematometer, colony counters, racks, pipettes, weight basket, etc	12 pcs	1:2
3	Refrigerator	360 ltr	3 pcs	
4	Specimen	Blood, urine, serum, milk, rumen content, faces, skin scrapings, tissues, pus, exudates, transudates, various secretions, excretions and parasites, organ		As required
4	Material to collect sample	scalpel blade and handle, syringe, rope, glove, sample container, transport media	3 pack	1:8
5	Ice box	10 ltr	3 pcs	1:8
5	Marker, labeling paper	Used for labeling	1 pack	

LEARNING MODULE 05	
TVET-PROGRAMME TITLE: Animal Health Level IV	
MODULE TITLE: Carrying-out Inspection of Animal Origin Food and Veterinary Public Health Activities	
MODULE CODE: <u>AGR ANH4 M05 0422</u>	
NOMINAL DURATION: 54 Hours	
<p>MODULE DESCRIPTION: This module covers the knowledge, skills and attitude required to monitor the hygiene of meat, egg, milk, other milk products and by-products and honey following organizational OHS policies and procedures. It also covers sampling and conducting examination of animal origin food, meat inspection, understanding of public health issues associated with meat consumption and carrying-out community awareness on veterinary public health issues.</p>	
<p>LEARNING OUTCOMES</p> <p>At the end of the module the trainee will be able to:</p> <p>LO1. Develop knowledge of public health issues associated with food of animal origin</p> <p>LO2. Acquire knowledge on abattoir and abattoir hygiene</p> <p>LO3. Conduct ante mortem examination and supervise slaughtering process</p> <p>LO4. Conduct post-mortem examination and follow up maintenance of cold chain</p> <p>LO5. Conduct Sampling and quality assessment for food of animal origin</p> <p>LO6. Perform community awareness on veterinary public health issues</p>	
<p>MODULE CONTENTS:</p> <p>LO1. Develop knowledge of public health issues associated with food of animal origin</p> <p>1.1. Definition and scope of public health</p> <p>1.2. Sources and preventive measures of zoonotic diseases</p> <p>1.3. Nutritional importance and hygiene maintenance of animal origin food</p> <p>1.4. Residual effect of drugs, vaccine and chemical from animal origin food</p> <p>LO2. Acquire knowledge on abattoir and abattoir hygiene</p> <p>2.1. Site selection of abattoir construction</p> <p>2.2. Standard abattoir service facilities</p> <p>2.3. Abattoir sanitation approaches and standard principles</p> <p>2.4. Concepts and application of HACCP</p> <p>LO3. Conduct ante mortem examination and supervise slaughtering process</p> <p>3.1 . OHS and hazards associated with the procedure</p>	

- 3.2 . Basic principles of meat inspection
- 3.3 . Maintaining hygiene of lairage and slaughter room
- 3.4 . Examination of preliminary information about the animal
- 3.5 . Ante mortem examination
- 3.6 . Judgment for slaughter
- 3.7 . Carrying out slaughtering process
- 3.8 Separation of offal and carcass

LO4. Conduct post-mortem examination and follow up maintenance of cold chain

- 4.1 Performing postmortem examination and Judgment for consumption
- 4.2 Preservation methods of meat
- 4.3 Cleaning, disinfection and biosecurity of post mortem area
- 4.4 Record keeping for ante mortem and postmortem results

LO5. Conduct Sampling and quality assessment for food of animal origin

- 5.1 . Identification of PPE , sampling materials and equipment
- 5.2 . Sampling of animal origin food
- 5.3 . Recording of sample information
- 5.4 . Quality assessment of meat, milk, eggs and honey
 - 5.4.1. physical test
 - 5.4.2. chemical test
 - 5.4.3. Microbial test
- 5.5 . Egg and honey collection, handling and grading
- 5.6 . Record and Interpret results

LO6. Perform community awareness on veterinary public health issues

- 6.1 Veterinary public health guidelines and procedures
- 6.2 Veterinary public health awareness activities
- 6.3 Operate and use relevant equipment and materials
- 6.4 Addressing current public health issues

LEARNING METHODS:

- Lecture
- Group discussion
- Practical démonstration
- Field visit



ASSESSMENT METHODS:

- Written examination
- Interview /Oral question/
- Practical demonstration
- Assignment

ASSESSMENT CRITERIA

LO1. Develop knowledge of public health issues associated with food of animal origin

- Public health defined and scope explained
- Zoonotic diseases definition, source and prevention are described
- Nutritional importance, quality and hygiene maintenance of food of animal origin are described.
- Foods of animal origin are given considerations as a source of zoonotic disease
- Residual effect of drugs, vaccine and chemical from food of animal origin are explained

LO2. Acquire knowledge on abattoir and abattoir hygiene

- Considerations for site in abattoir construction are mentioned and described
- Standard abattoir service facilities to perform full activities of slaughtering process and quality examination are mentioned
- Abattoir sanitation approaches and standard principles are considered
- Standards to maintain abattoir hygiene are described and public health problems associated with unhygienic abattoir handling are explained
- The concept of HACCP and its application are described based on organizational guidelines

LO3. Conduct ante mortem examination and supervise slaughtering process

- OHS and hazards associated with the procedure are identified and appropriate action is taken to protect self and others
- The lairage and slaughter room are kept in clean and hygienic condition according to the enterprises requirements
- All relevant preliminary information about the animal to be examined is obtained and collated
- External assessment of the animal is carried out and outward signs of abnormalities or injury are noted
- Abnormal characteristics that may indicate the presence of notify able and potentially hazardous conditions or diseases are identified and appropriate action is taken prior to slaughter
- Judgment for slaughter is passed on the animal based on ante mortem examination guidelines and enterprise procedure

- The slaughtering process is carried out starting from stunning to carcass splitting following standard hygienic procedure under veterinarian supervision and inspection
- Offal and carcass are separated to prevent cross contamination

LO4. Conduct post-mortem examination and follow up maintenance of cold chain

- Physical examination of the carcass and offal are carried out for the detection of Pathological lesions following guidelines and principles of PME by veterinarians
- Judgment after PME is passed on carcass based on examination results and in accordance with standard guidelines and procedures
- Carcass and other offal are maintained in to the cooling and chilling are for preservation or directly transported for distribution
- Whole or part of carcass with suspicious signs are labeled and taken to separate room
- All information about the animal examined and the records of observations made during the post-mortem are collated and forwarded to the relevant persons for analysis and diagnosis
- Post mortem area and equipment used are hygienically cleaned, disinfected and stored for re-use
- Personal biosecurity clean-up is completed in accordance with the institution's policies and procedures hygienically cleaned, disinfected and stored for re-use
- Personal biosecurity clean-up is completed in accordance with the institution's policies and procedures

LO5. Conduct Sampling and quality assessment for food of animal origin

- Sampling materials and equipment are identified, maintained and used according to the enterprise guide lines
- PPE clothing and equipment are identified, maintained and used according to the enterprise requirements
- Samples of milk, egg, honey, organs, other tissues and fluid samples are taken if necessary, where appropriate, and prepared in accordance with appropriate standard methods, institutional and laboratory requirements
- Information is recorded and reported according the enterprise guidelines
- Materials, equipment and tools used for quality assessment of meat, milk, eggs and honey are identified, maintained and used according to the enterprise guide lines
- Basic physical, chemical and microbial test of meat and milk is performed according to the enterprise guide lines under supervision

- Egg collection, handling, and grading are performed based on the enterprise procedures and regulation under supervision.
- Honey collection, handling, and grading are performed based on the enterprise procedures and regulation under supervision
- Results are recorded and interpreted in accordance with enterprise procedures.

LO6. Perform community awareness on veterinary public health issues

- Plans are structured and finalized and accepted in accordance with veterinary public health guidelines and procedures
- Veterinary public health awareness activities are conducted using effective message development and delivery techniques
- Relevant equipment is operated correctly and materials are used effectively to assist the community in understanding the activities
- Current public health issues are addressed according to international, national or enterprise policy procedures and guidelines.



Annex: Resource Requirements

AGR ANH4 M05 0422 : Carrying-out Inspection of Animal Origin Food and Veterinary Public Health Activities				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A.	Learning Materials			
1.	TTLM	prepared by the trainer	25 pcs	1:1
3.	Reference Books			
2.1.	Integrated food safety and veterinary public health	Buncic, 2006	5 pcs	1: 5
2.2.	Meat inspection and control in the slaughterhouse.	Ninios <i>et al.</i> , 2014.	5 pcs	1: 5
2.3.	Wilson's practical meat inspection	Wilson, 2008.	5 pcs	1:5
3	Manuals and journals			
3.1	Veterinary drug residues in food-animal products: its risk factors and potential effects on public health	Beyene, T., 2016.	5 pcs	1: 5
3.2	Meat inspection and hygiene in a Meat Factory Cell–An alternative concept	Alvseike <i>et al.</i> , 2018.	5 pcs	1:5
B.	Learning Facilities and Infrastructure			
1.	Lecture room	56m ²		1:25
2.	Veterinary clinic			1:25
3.	laboratory	Parasitology, Microbiology and Pathology		As required
4	Post mortem room			As required
5	Library			1:25
6	Audiovisual room	CD, DVD, LCD,		1:25



		Computer, Internet		
7	Abattoir	For cattle, shoat, pig, poultry		As required
8	Lairage	Full of facilities		As required
C.	Consumable Materials			
1.	Chemical			
1.1.	Detergent	Omo/Soap		
1.2.	Dtisinfectants	Formalin, Alcohol		As required
1.3.	Antiseptics	Iodin, savlon and H ₂ O ₂		As required
2	Record book		2 pcs	1:13
D	Tools and Equipment			
1.	PPE	Boots, hat, coverall, apron, respirator, facemask, eye goggle, gloves	25 pcs	1: 1
2	Post mortem kit		1kit	1:25
3	Stunning materials	Captive bolt, Striking instrument , Electricity and carbon dioxide		As required
4	Knives	Stainless steel	5 pcs	1:5
5	Sampling materials			A required
6	Diagnostic materials	Thermometer, stethoscope, hammer and pleximeter		As required



LEARNING MODULE 06	
TVET-PROGRAMME TITLE: Animal Health Level IV	
MODULE TITLE: Conducting Prevention and Control of Animal Diseases	
MODULE CODE: <u>AGR ANH4 M06 0422</u>	
NOMINAL DURATION: 44 Hours	
MODULE DESCRIPTION: This module covers the knowledge, skills and attitude required to maintain safe animals' health through prevention, control and Strategic treatment of veterinary disease. It also includes Disease outbreak investigation and report writing and implementing safe and hygienic work practices.	
LEARNING OUTCOMES At the end of the module the trainee will be able to: LO1. Develop basic understanding on disease prevention and control LO2. Apply bio security protocols to people, animals and equipment LO3. Identify and implement Prophylaxis's measures LO4. Design and implement vaccination program LO5. Disease outbreak investigation and report writing LO6. Participate the community in animal disease prevention	
MODULE CONTENTS: LO1. Develop basic understanding on disease prevention and control 1.1 Introduction to control, prevention and eradication of animal disease 1.2 General methods of prevention and control of animal diseases 1.3 Determinants and patterns of disease occurrence LO2. Apply bio security protocols to people, animals and equipment 2.1. Component, threats and principles of biosecurity 2.2. Sources of contamination entering work area 2.3. Apply Footbath at farm and sheds area LO3. Identify and implement Prophylaxis's measures 3.1. Preventive prophylactic measures of common agents 3.2. Deworming strategy and implement treatments LO4. Design and implement vaccination program 4.1. Biology of immune system and types of immunity 4.2. Types of vaccine and importance of vaccination	

- 4.3. General principles and precautions of vaccination
- 4.4. Design vaccination strategy and booster
- 4.5. Identify and use common bacterial and viral vaccines

LO5. Disease outbreak investigation and report writing

- 5.1. Importance of disease outbreaks investigation
- 5.2. Factors for occurrence of disease outbreaks
- 5.3. Epidemiological investigation of diseases outbreaks
- 5.4. Report writing based on principles and guide lines of OIE

LO6. Participate the community in animal disease prevention

- 6.1 Prevention strategies
 - 6.1.1. Rotational grazing
 - 6.1.2. Exclusion from infected areas
 - 6.1.3. Genetic selection and
- 6.2 Prevention of herd mixing
- 6.3 Isolation and treatment measure of animal

LEARNING METHODS:

- Lecture
- Group discussion
- Practical démonstration
- Cooperative training

ASSESSMENT METHODS:

- Written examination
- Practical demonstration
- Assignment
- Project work

ASSESSMENT CRITERIA:

LO.1: Develop basic understanding on disease prevention and control

- The concepts of control ,prevention and eradication of animal disease are described
- General methods of prevention and control for common animal disease are identified
- Determinants of disease occurrence and development are explained.
- Temporal Patterns of disease occurrence in a population are understood, identified and characterized.

LO.2 Apply bio security protocols to people, animals and equipment

- Principles and Component's bio-security has been Understood and described.
- Possible sources of pathogen contamination entering work area are identified.
- Potential bio security threats on the enterprise are identified.
- Farm compound footpaths and areas around sheds are kept clear of debris according to workplace policy.

LO.3: Identify and implement Prophylaxis's measures

- Preventive Prophylactic measures are identified and applied to common bacterial viral and protozoan disease based on veterinarians recommendation
- Strategic deworming and integrated treatment is implemented to minimize the risk of parasite on animal production and drug resistance.

LO.4: Design and implement vaccination program

- Biology of immune system and types of immunity are introduced.
- Importance of vaccination and common types of vaccine are explained.
- General principles and precautions of vaccination in animal are explained and understood.
- Vaccination strategy is designed considering virulence of the causative agent, spreading velocity of the diseases and geographic distribution host animal.
- Common and available bacterial vaccines used for different species of animals are identified and used following manufacturers instruction.
- Common and available viral vaccines used for different species of animals are identified and used following manufacturers instruction.

LO 5: Disease outbreak investigation and report writing

- Definition and importance of disease outbreaks investigation is described.
- Factors for occurrence of disease outbreaks described and identified.

- Epidemiological approaches to investigation of outbreaks are applied.
- Report writing is implemented based on the principles and guide lines of OIE

LO 6: Participate the community in animal disease prevention

- Prevention and treatment strategies are identified to resolve health issues, including rotational grazing, exclusion from infected areas, involving in the national development of immunity, genetic selection and treatment with drugs.
- Prevention of mixing heard of different owners at watering, grazing points and isolation of those newly brought/returned from market is carried out.
- Quick isolation of sick animal and appropriate measure is taken.

Annex: Resource Requirements

<u>AGR ANH4 M06 0422: Conducting Prevention and Control of Animal Diseases</u>				
Ite m No.	Category/Item	Description/ Specifications	Quantity	Recomm ended Ratio
A. Learning Materials				
1.	TTLM	Prepared by the trainer	25 Pcs	1:1
2.	Reference Books		5 Pcs	1:5
3.	Reference manuals	<ul style="list-style-type: none"> • ILRI manuals and researches • EVA journals/ Magazines • International or national journals • DACA manual 		
4.	Videos or Audio video			
5.	Bulletins, Data sheet, Diagrams, sketches	To be prepared by the trainer or organization	2 pcs	1:13
B. Learning Facilities and Infrastructure				
1.	Lecture room	56m ²		
2.	Virtual library (LCD, project and CD)	1.7m ² /trainee		
3.	Veterinary clinic	B level	1	1:25
4.	Smart room	Contain LCD, DVD, CD/USB, computer, internet connectivity, projector, projector screen, Audio-video recorder, connectivity cable, amplifier	1	1:25
5.	Drug store	Medium level	1	1:25
C. Consumable Materials				
1.	Cleaning and disinfecting chemicals	Ethanol alcohol	2 ltr	1: 13
		Isopropyl alcohol	2 ltr	1: 13
		Barakina	2 ltr	1: 13
		Glutaraldehyde	2 ltr	1: 13
		Hydrogen peroxide	2 ltr	1: 13
2.	Bacterial vaccines	Anthrax, Blackleg, Pasteurela and CCPP	2 vial each	



3.	Viral vaccines	FMD, LSD, Pox vaccine, Rabies,	2 vial each	
4.	Deworming agent	Anthelmintic, Ivermectin,	2sachet/pack/	
5.	Acaricide and insecticide	Diazinon, amithraz, deltametrine	1 ltr ech	
6.	Fungicides	Ketokonazol, Amphotericin B, miconazole	2 packet	
7	Saline water, distilled water		10 ltr	
D.	Tools and Equipment			
1.	Personal protecting equipment	Bee-proof overalls and gloves, Steel capped boots/shoes, Sunhats, Bee veils and Sunscreen lotion	25 Pcs	1:1
2.	Hypodermic syringe &needle		2 pack	
3.	Sprayer /napsack		2 pcs	
4.	Balling gun	Large and small	5 pcs	
5.	Vaccination syringe and needle	Manual and automatic	3 pcs	1:8
6.	Ice box	10 ltr	2pcs	

LEARNING MODULE 07

TVET-PROGRAMME TITLE: Animal Health Level IV

MODULE TITLE: **Performing Animal Quarantine Operations**

MODULE CODE: **AGR ANH4 M07 04 22**

NOMINAL DURATION: **36** Hours

MODULE DESCRIPTION: This module covers the knowledge, skills and attitude required to carry out daily quarantine techniques in field, feedlot, pre- quarantine and quarantine station. It also requires the ability to inspect and collect samples from quarantined animals there by provide health certificate. Quarantine operations also require knowledge of quarantine wastes disposal.

LEARNING OUTCOMES

At the end of the module the trainee will be able to:

LO1. Understanding and Carry out animal quarantine activities.

LO2. Carry out samples collection and decisions on a quarantined animal and their products

LO3. Wastes disposal and report quarantine data

MODULE CONTENTS:

LO1. Understanding and Carry out animal quarantine activities.

- 1.1. Basic terminology and classification of quarantine stations.
- 1.2. Materials, tools, equipment, and facilities in quarantine stations
- 1.3. Site selection and quarantine construction
- 1.4. Management of isolated animals
- 1.5. Cleaning and disinfection of the quarantine facilities
- 1.6. Prevention and control of disease in the quarantine station

LO2. Carry out samples collection and decisions on a quarantined animal and their products

- 2.1. Maintain Personal hygiene and cleanliness standards
- 2.2. Sampling and sample transporting.
- 2.3. Quarantine regulations for importing and exporting
- 2.4. Decisions on a quarantined animal and their products

LO3. Wastes disposal and report quarantine data

- 3.1. Disposing of quarantine wastes
- 3.3. Develop recording sheet and record daily activities in the quarantine
- 3.4. Quarantine animal certification



LEARNING METHODS:

- Lecture
- Group discussion
- Practical demonstration
- Audio visual
- Field visit

ASSESSMENT METHODS:

- Written test
- Group/individual assignment with presentation
- Practical assessment with Oral questioning

ASSESSMENT CRITERIA:

LO1. Understanding and Carry out animal quarantine activities.

- Basic terminology on quarantine activities Classification of importing quarantine stations clearly defined.
- Availability, security and functionality of necessary materials, tools, equipment, animals and other items for the quarantine stations are regularly checked and maintained according to the quarantine regulation.
- Consideration taken into account for Site selection and quarantine construction are clearly described.
- Suspected animals and animals found sick and their products are isolated, maintained, managed and treated through regular follow up and observation of animals according to the quarantine station treatment protocol or guideline.
- Appropriate nutrition is provided for every group of quarantined animals based on the nutrition plan and any change in feed and feeding habit of animals is regularly followed, checked, recorded and reported according to the quarantine regulation.
- Cleaning and disinfection of the quarantine environment, animal houses, feed and watering troughs, and animals are regularly conducted based on the organization plan and regulation.
- Specific activities used in preventing, controlling and eradicating disease of disease in the quarantine station is clearly performed

LO2. Carry out samples collection and decisions on a quarantined animal and their products

- Personal hygiene and cleanliness standards are maintained in accordance with OHS and organizational guidelines and procedures.
- Safety training is undertaken or provided as necessary PPE, sampling and sample transporting materials, medias and equipment are secured according to the quarantine station operational guideline
- Proper and representative Samples for different quarantined animal species are identified, collected, labeled and stored
- Safely and are submitted to laboratories according to organizational procedures and laboratory regulations of the importing country.
- Appropriate decisions are passed based on the findings that we get from the

operational quarantine activity according to quarantine regulation

LO3. Wastes disposal and report quarantine data

- Adequate area for the disposal of quarantine waste is prepared according to the organizational guideline.
- Quarantine wastes are isolated properly, and disposed off safely according to safety procedures, organizational guidelines and environmental legislations.
- Daily observations are recorded on animal history sheet
- Original animal health certificate is given to the owner or exporter up on completion of quarantine period.
- History sheets and associated documentation of animals released from quarantine is archived and is set accessible for auditing and information purposes



Annex: Resource Requirements

AGR ANH3 M07 0422: Performing Animal Quarantine Operations				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A. Learning Materials				
1	TTLM	prepared by the trainer	25pcs	1:1
2	Reference Books			
2.1	Livestock housing: modern management to ensure optimal health and welfare of farm animal	Aner A. and Thoma B. 2013	5 pcs	1:5
2.2	Animal quarantine management	FAO of the united nation, 1995	5pcs	1:5
2.3	Collective and multiple property rights in animal	Khazanov AM., and Schlee, G., 2012; 5 th ed.	5 pcs	1:5
3	Journal	Michael <i>et al.</i> , (2009). Animal quarantine operation		
4	Reference manual	Animal movement and quarantine, OIE manual Animal quarantine guide	5 pcs	1:5
5	written graphical and diagrams or sketches	Prepared by trainer, government /organization	2pcs	1: 13
B. Learning Facilities and Infrastructure				
1.	Well Equipped Lecture Room	56m ²		1:25
2.	Virtual library with multimedia (LCD project, computer, and CD)	1.7m ² /trainee	1pcs	1:25
3.	Isolation room	Well equipped with required materials		
C Consumable material				
1	Disinfectant, Chemical and antiseptic	Ethyl alcohol	2ltr	
		hydrogen peroxide	1ltr	
		Antibacterial ointment	1 pack	
		Formalin	1 ltr	
		Iodine	1 ltr	
		Antiseptic solution		



2	Saline water, distilled water		10 ltr	
D. Tools and Equipment				
1.	Personal protective equipment	Overall	25 pcs	1:1
		Respirator	25 pcs	1:1
		Boots	25 pair	1:1
		Glove	2 pack	
3	Drugs	broad spectrum antibiotics anthelmintics and acaricides	As required	
4	Material to take sample	Arm length gloves, vacutainers, needle with holders, gauze, cotton, oesophageal tube		
5	Treatment tool	Dehorning wire, drenching gun, trocar and canulla, balling gun, veterinary first aid kit		
6	Surgical tool	surgical gloves, scalpel blade, blade, surgical needles, cat gut and silk, local anesthesia different sedatives, tranquilisers		
7	Diagnistic tool	Thermometers, stethoscope, stomach tube		
8	Restraining tool	nose ring, chains , mouth gag, sprayer, crush, mouth gag, neck collar		
9	Refrigerator	360 trr		



LEARNING MODULE 08	
TVET-PROGRAMME TITLE: Animal Health Level IV	
MODULE TITLE: Carrying out Poultry Health Practice	
MODULE CODE: <u>AGR ANH4 M08 0422</u>	
NOMINAL DURATION: 52 Hours	
MODULE DESCRIPTION: This Module covers the knowledge, skills and attitude required to develop detail understanding of poultry production, health management and carry out the identification, classification and handling of major infectious diseases and non-infectious diseases of poultry which are the serious constraints in poultry industry. The module also requires the knowledge and skills to Implement poultry health management and bio security measures to prevent and control poultry diseases.	
LEARNING OUTCOMES At the end of the module the trainee will be able to: LO1. Develop understanding of poultry production and health LO2. Identify and handle infectious disease of poultry LO3. Identify and handle non infectious causes of poultry diseases LO4. Implement poultry health management and bio security	
MODULE CONTENTS: LO.1 Develop understanding of poultry production and health 1.1 Introduction to poultry production systems 1.2 Plan of Poultry Housing 1.3 Poultry feeding and watering materials 1.4 Classification of poultry breeds 1.5 Challenges in the poultry industry 1.6 Poultry feeding and nutrition LO.2 Identify and handle infectious disease of poultry 2.1 OHS in poultry health management 2.2 Hygiene in poultry feeding and watering 2.3 Identifying and handling poultry diseases 2.3.1. Viral diseases 2.3.2. Bacterial diseases 2.3.3. Parasitic diseases	

2.3.4. Fungal diseases

2.4 Public health and economic importance of infectious poultry diseases

LO.3 Identify and handle non-infectious causes of poultry diseases

- 3.1 Production loss associated to poor management practices
- 3.2 Identification of nutritional deficiency
- 3.3 The source of poisoning and toxicity
- 3.4 Causes of stress that induce poor production and productivity
- 3.5 Prevention and control methods of non-infectious poultry diseases

LO.4 Implement poultry health management and bio security

- 4.1 Biosecurity measures in the prevention of poultry disease
- 4.2 Poultry house sanitation and management
- 4.3 Identification, isolation and culling of sick birds
- 4.4 Planning vaccination programme

LEARNING METHODS:

- Lecture
- Group discussion
- Démonstration
- Field visit
- Audio Visual method

ASSESSMENT METHODS:

- Written examination
- Oral questioning
- Individual and group assignments
- Practical demonstration/ clinical attachment

ASSESSMENT CRITERIA:

LO.1 Develop understanding of poultry production and health

- Different poultry production systems are identified and described based on their management types.
- Poultry Housing plans are determined according to the standard specification of the industry.
- Feeding and watering materials and other tools to be used in poultry houses are described and specified based on the breed, age of the birds and according to the industries specification.
- Breeds are categorized according to the production objectives of the industry.
- Husbandry related issues are described according to the protocol and guidelines of the industry.
- Nutrition plan is scheduled based on the nutrient requirement and age of birds.

LO.2 Identify and handle infectious disease of poultry

- PPE are accessed and used based on OHS guidelines.
- Appropriate tools and equipment, feed and water containers are selected and checked for cleanliness and made ready for use.
- Viral diseases of poultry are described based on their occurrence, clinical sign and symptoms, mode of transmission, laboratory and post mortem findings; and are handled according to the organizational guideline.
- Bacterial diseases of poultry diseases are identified and handled according to the organizational guideline.
- Parasitic diseases of poultry are described and identified based on their nature, clinical sign and symptoms, mode of transmission, laboratory and post mortem findings; and are handled according to the organizational guideline.
- Fungal poultry diseases are identified and handled according to the organizational guideline.
- Diagnosis of diseases and differentiation from other diseases with similar character are undertaken according to the enterprise guide lines.
- Causative agents are identified by clinical signs and laboratory diagnosis by collecting appropriate specimen from clinically sick and dead animals for specific suspected diseases according the laboratory requirements.

- Treatments are prescribed, and prevention and control methods are identified and implemented as required.
- Public and economic importance of the diseases is identified, advice is given and appropriate prevention and control programs are implemented as required.

LO.3 Identify and handle non-infectious causes of poultry diseases

- Poor management practices which result in production loss are assessed and identified
- Nutritional deficiency due to improper ration composition are identified and managed.
- Poisoning and sources of toxicity are identified and chance of their access through feed, water, inhaled air is reduced.
- Stress due to over stocking, production, vaccination, treatment and climate change, is identified and managed according to the industry's guidelines.
- Economic importance of the diseases is identified and advice is given and appropriate prevention and control programs are implemented as required under supervision.

LO.4 Implement poultry health management and bio security

- Prevention and control measures for each of the diseases are identified and implemented according to the enterprise guideline.
- Strict bio-security measures are implemented according to the organizational requirement.
- Good sanitation and litter management is carried out according to the enterprise guideline.
- Appropriate spacing and free air circulation is ensured according to the industry's standards.
- Quick identification and culling /separation of sick birds is carried out according to the enterprise guideline.
- Vaccination schedule is planned and the right vaccine type is administered based on the age and breeding type and implemented based on the breeding type and age of birds.

Annex: Resource Requirements

AGR ANH3 M08 0422: Carrying out Poultry Health Practice				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A. Learning Materials				
1.	TTLM	Prepared by the trainer	25 pcs	1:1
2	Reference Books			
2.1	Poultry Health and Management	Joseph J. and Giambrone, 2006	5 pcs	1:5
2.2	Color atlas of Poultry diseases An Aid to Farmers and Poultry Professionals	VEGAD,J.L, 2008	5 pcs	1:5
2.3	Handbook on Poultry Diseases	Simon M. and Shane, 2005	5 pcs	1:5
3.	Work place Guideline	Prepared by trainers/Colleges	5 pcs	1:5
4	Audio Visual	CD/VCD/LCD	1 pcs	1:25
5.	Journals/Publication/Magazines	International or national veterinary journals/Online/	---	1:1
B. Learning Facilities and Infrastructure				
1.	Lecture room	7m * 8m	1 pcs	1:25
2.	Smart class room	Contain LCD, DVD, CD/USB, computer, internet connectivity, projector, projector screen, Audio-video recorder, connectivity cable, amplifier	1 pcs	1:25
3.	Farm	poultry farm	1 pcs	1:25
4	Pathology and microbiology Laboratory room with full equipment	Concrete block	1 pcs	1:25



5	Library	1.7m ² /trainee	1 pcs	1:25
C. Consumable Materials				
1.	Stationary materials	Pens, paper, pencils/ Marker, Chalk	2Packs /1Gros	As per required
2	Cleaning and disinfecting chemicals	House hold bleach	1kg	---
		Ethanol alcohol	4lts	1:6
		Povidone and tincture iodine	2 lts	1:12
		Savlon	4 lts	1:6
3	Poultry Vaccines and drugs	Lasota, IVBP, Avian encephalomyelitis, fowl typhoid	1 each	1:25
D Tools and Equipment				
1.	Showers/bathing rooms	With full accessories	2 pcs	1:13
2	Poultry cage	Plastic/wire/wood	5 pcs	1:5
3	Personal protective equipment	Boots	25 pcs	1:1
		hats/hard hat	each	
		coveralls		
		Gloves in packet	3 pcs	1:1
4	Microscope with its full accessories	Compound and stereo microscope	5 pcs	1:5
5	Gown	White color	25 pcs	1:1
6	Automatic vaccine syringe	Stainless steel	8 pcs	1:3
7	Feeding and watering trough	Plastic and manual/automatic	6 pcs	1:4
8	Debeaker	Stainless steel	2	1:13
9	Post mortem kit		1	1:25

LEARNING MODULE 09

TVET-PROGRAMME TITLE: Animal Health Level IV

MODULE TITLE: **Carrying out Animal Husbandry practice and Farm Management**

MODULE CODE: **AGR ANH4 M09 0422**

NOMINAL DURATION: **60** Hours

MODULE DESCRIPTION: This module covers the knowledge, skills and attitude required to carry out animal husbandry practice and farm management in order to enhance production and productivity of livestock industry. This module focus on farm site selection, housing, breeding, feeding, health, production management and marketing for dairy farm, Beef farm, small ruminant, pig, fishery and honey bee. It also covers good management practices, record and reporting after completion work.

LEARNING OUTCOMES

At the end of the module the trainee will be able to:

- LO1.** Apply dairy farm Husbandry practice and management
- LO2.** Apply beef Farm/feedlot Husbandry practice and management
- LO3.** perform small ruminant Farm/pig farm Husbandry practice and management
- LO4.** Apply fish production and management
- LO5.** carryout honey Bee production and management

MODULE CONTENTS:

LO1. Apply dairy farm Husbandry practice and management

- 1.1. Introduction to dairy business
- 1.2. Considerations in establishing dairy farm
- 1.3. Types of dairy houses
- 1.4. Forage production and management
- 1.5. Breeding techniques and breed selection
- 1.6. Young stock management in dairy business
- 1.7. Assessment on production performance of dairy business
- 1.8. Fertility and other health problems in dairy cattle
- 1.9. Herd screening tests in management of major dairy cattle
- 1.10. Measures to prevent transmission of zoonoses and reproductive diseases
- 1.11. Hygienic milk production and marketing management

LO2. Apply beef Farm/feedlot Husbandry practice and management

- 2.1. Considerations to establish beef farm

- 2.2. Types of houses in feedlot
- 2.3. Forage development for feed lot animals
- 2.4. Breeds of beef cattle and selection criteria
- 2.5. Nutrition and feeding plan of beef animals
- 2.6. Management of health problems in feedlots

LO3. perform small ruminant Farm farm Husbandry practice and management

- 3.1 Considerations in the establishment of shoat farm
- 3.2 Breeding and nature of sheep and goat breeds
- 3.3 Housing accommodation sheep and goat farm
- 3.4 Nutrition and feeding plan for sheep and goat
- 3.5 Management of common health problems

LO4. Apply fish production and management

- 4.1. Introduction to aquaculture
- 4.2. Fish as a vital source of food
- 4.3. Considerations in construction of ponds and lakes
- 4.4. Character and location of Ethiopian native freshwater fishes
- 4.5. Fish nutrition and feeding
- 4.6. Fish health management and biosecurity measures in fish farms

LO5. Carryout honey Bee production and management

- 5.1. Introduction to Apiculture
- 5.2. Importance of bee keeping
- 5.3. Important species of Honey bee in Ethiopia
- 5.4. Site selection and nest configuration
- 5.5. The three best types of hives
- 5.6. Feed preparation and honey bee feeding
- 5.7. Health management and biosecurity programs
- 5.8. Honey/wax collection and marketing



LEARNING METHODS:

- Lecture and group Discussion
- Practical démonstration
- Coopérative training
- Field Visit

ASSESSMENT METHODS:

- Written Examinations
- Oral questioning (Interview)
- Practical demonstration
- Project work

ASSESSMENT CRITERIA:

LO1. Apply dairy farm Husbandry practice and management

- Dairy farm business is identified based on resource availability and cost benefit analysis
- Dairy farm site selection and the type house are determined based relevant factors.
- Forage production and management for the dairy animal are well identified and applied based on forage selection criteria's
- Appropriate feed and feeding practice are identified and applied based on required feed type and animal status
- Selection of the proper Dairy cattle breed with reproduction health is well understood and performed based on Breed selection criteria's.
- The proper young stock management for dairy cattle are identified and implemented as per the production objective.
- Assessment on the production performance of dairy are carried out by using signs of fertility problem and information gathered from record book of the dairy.
- Fertility problems for dairy cattle are diagnosed based on veterinary clinical examination methods
- Health abnormalities on dairy cattle due to environmental, metabolic disorders, nutritional and animal handling stresses are identified and minimized according to the organizational guide lines.
- Screening and testing of the herd for major Dairy health risks and suspected diseases are conducted as required according to the enterprise guideline.
- Appropriate measures are taken to prevent the occurrence and transmission of reproductive diseases among dairy cows, and zoonosis diseases according to the national diseases' prevention and control guideline and enterprise guide lines.
- Prevention and control activities for reproductive and fertility problems of dairy cows are undertaken.
- Health abnormalities of non-productive animals are identified and recommendations/advice is given for nutritionist, animal care takers.
- The proper Hygienic milk production and marketing management are well identified, analyzed and applied to improve the benefit from the dairy sector.

LO2. Apply beef Farm/feedlot Husbandry practice and management

- Livestock farming systems based on production system and source of feeds and

grazing system are practiced.

- Beef farm/ feedlot business is identified based on resource availability and cost benefit analysis
- Beef/ feedlot farm site selection and the type house are determined based relevant factors.
- Selection of the proper Beef cattle breed are well performed based on animal body conformation.
- Economic basis to supplementary feeding system is determined according to enterprise requirements.
- Feed and feed supplements are confirmed and prepared in line with feeding plans.
- Existing and potential hazards in relation to feeding and watering are identified and reported to the supervisor.
- Beef animal feeding are performed based on the required body gain.
- Beef animal disease is identified and preventive measures are applied as organization rule and regulation.
- Body weight gaining, transportation, transportation related risk and marketing are identified.

LO3. Perform small ruminant Farm/pig farm Husbandry practice and management

- Livestock farming systems based on production system and source of feeds and grazing system are practiced.
- The farm business is identified based on resource availability and cost benefit analysis
- The farm site selection and the type house are determined based relevant factors.
- Selections of the proper breed are well performed based on animal body conformation and the objective of the farm.
- Economic basis to supplementary feeding system is determined according to enterprise requirements.
- Feed and feed supplements are confirmed and prepared in line with feeding plans.
- Existing and potential hazards in relation to feeding and watering are identified and reported to the supervisor.
- Animal feeding are performed based on the required farm objective.
- Specific small ruminant pig disease is identified and preventive measures are applied as organization rule and regulation.
- Product quality, transportation, marketing and cost benefit analysis are performed

based on farm management practices

LO4. Apply fish production and management

- The farm business is identified based on resource availability and cost benefit analysis.
- The production site selection is determined based on the availability of resource.
- Specific disease related to fish are identified and managed as per organization disease control and prevention procedure.
- Fish anatomy and behavior are identified and managed to improve farm production and productivity.
- Feeding and watering abnormalities and signs of stress in animals are recorded and reported to the supervisor according to organizational guidelines and procedures
- Bio-security programs are implemented in the different farming activities production and enterprise objectives.
- Product quality and marketing are maintained and regulated in regularly way to reduce risks related to marketing.

LO5. LO5. Carryout honey Bee production and management

- The farm business is identified based on resource availability and cost benefit analysis.
- The production site selection is determined based on the availability of resource.
- Specific disease related to honey bee are identified and managed as per organization disease control and prevention procedure.
- Honey bee anatomy and behaviour are identified and managed to improve farm production and productivity.
- Feeding and watering abnormalities and signs of stress in animals are recorded and reported to the supervisor according to organizational guidelines and procedures
- Bio-security programs are implemented in the different farming activities production and enterprise objectives.
- Product quality and marketing are maintained and regulated in regularly way to reduce risks related to marketing.



Annex: Resource Requirements

AGR ANH4 M09 0422: Carrying out Animal Husbandry practice and Farm Management				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A.	Learning Materials			
1.	TTLM and handouts	prepared by the college trainers	25 pcs	1:1
2	Reference Books			
2.1	Dairy management; Business summary.	Wayne A., 2001	5 pcs	1:5
2.2	Tropical dairy farming; Feeding Management for Small Holder Dairy Farmers in the Humid Tropics	John, M., 2005.	5 pcs	1:5
2.3	Raising Beef Cattle For Dummies	John Wiley and Sons, Inc., 2012	5 pcs	1:5
2.4	Fish farming and the environment; kenya market-led aquaculture	Farm Africa, 2016	5 pcs	1:5
2.5	Canadian Best management practices for honey bee health	Agriculture and Agri-Food Canada (AAFC), 2017	5 pcs	1:5
3	Reference manuals	To be prepared by the college	5 pcs	1:5
4	written and graphical instructions, Bulletins, data sheet, diagrams or sketches	prepared by the college and manufacturers	3 pcs	1:8
5	Journals/Publication/Magazines			
5.1	Challenges, opportunities and prospects of dairy farming in Ethiopia.	Guadu, T. and Abebaw, M., 2016; <i>World Journal of Dairy & Food Sciences</i> , 11 (1).	5 pcs	1:5
5.2	Carcass characteristics of draught cattle released for beef in Eastern Ethiopia	Ewonetu, K. and Ashenafi, G., 2019; <i>Ethiopian Veterinary Journal</i> .,23(1).	5 pcs	1:5
5.3	Smart apiculture management	Kibebew <i>et al.</i> , 2021; <i>PeerJ</i>	5 pcs	1:5



	services for developing countries	<i>Computer Science, 7.</i>		
5.4	Fish production, consumption and management in Ethiopia.	Janko, A.M., 2014. <i>Research Journal of Agriculture and Environmental Management, 3(9).</i>	5 pcs	1:5
6	Workplace guidelines/manuals	To be prepared by the trainer/college	5 pcs	1:5
B.	Learning Facilities and Infrastructure			
1	Class room	7m*8m		1:25
1	Library	Have a digital library/e-library 1.7m ² *25		1:25
2	Audio visual/ICT	Fulfilling the elements of smart class room		1:25
3	Dairy farm			
4	Feedlot farm			
5	Sheep and goat farm			
6	Apiculture premises			
7	Fish pond and lake			
8	Vehicle	Bus for field trip	1	1:25
C.	Consumable Materials			
1.	Detergent and antiseptic chemicals	House hold bleach, Soap, Formalin, alcohol, Tincture of iodine savlon and H ₂ O ₂	4 ltr each	1:6
2.	Feed for dairy cows	pasture grasses, Legumes, fodder, and silage, corn, Soy and barley, Wheat bran Sunflower heads and Cottonseed cake With hulls, Brewing and distilling by-products	4 kg each	1:6
3.	Feed in the feed lots	Barley, wheat, triticale, sorghum, maize, and oats	4 kg each	1:6
4.	Feed supplement for honey bee	White cane sugar, Several brewer's yeast products, Wheat, and soybean flour, Cane or beet sugar syrup	4 kg each	1:6
5.	Basic and supplementary feed for fish	algae, aquatic plants, aquatic invertebrates; soybean meal, blood meal, meat and bone meal, poultry byproduct	4 kg each	As required
D	Tools and Equipment			
1	PPE in dairy and	Gloves made of leather, canvas or metal mesh, earplugs, Respirators, sun hat, cover	25pcs	1:1



	feedlot farming	all, boots, goggles, Apron,	each	
2	Equipment in dairy farming	Fodder truck, tractor implements, fodder compacting press, fodder block machine, administrative office equipment, milking equipment, mud pump, baler, pressure washer, fodder mill, generator, electric fencing, semen container, accessories, mist cooling system, fodder chaff cutter, trolley, tractor, tanks, moveable fence, fodder harvester, reapers, feed basket, loader tractor, feed grinder, milk cans, bore well with motor, tagging equipment, chains, ropes, water pipes,	1 pcs each	1:25
3	Equipment in feed lots	bunks, mangers, self-feeders for both grain and roughage, watering tanks, water storage tanks, cattle stocks, shipping crates, scale pens, dipping vats	1 pcs	1:25
4	PPE for bee keeper	Bee-proof overalls and glove, Steel capped boots/shoes, Sunhats, Bee veils, Sunscreen lotion.	12 pcs each	1:12
5	Bee keeping tools and equipment	Bee blower, Bee smoker, Brush, Buckets and wheelbarrow, Detergent, Glass slides, jars or cages for adult bee samples, Geographic Positioning System (GPS) equipment, Compass and detailed locality maps, Hive tool, Hives, Loading and unloading equipment, Queen excluder, Vehicle	1 pcs each	1:25
6	PPE for fish production	Gloves, Boots, raincoat, Sunhats, sunglass, sunscreen creams, Gown, overalls (water proof), Wader, Life saver jacket, Capturing net	25 pcs each	1:1
7	Clinic tools and equipment	Treatment syringe and needles, nasogastric tube, Girth meter, IV catheter , Stomach tube and mouth gag, Trocar and cannula, Chemical sprayer, burdizzo	2 pcs each	1:12 each

LEARNING MODULE 10

TVET-PROGRAMME TITLE: Animal Health Level IV

MODULE TITLE: **Applying Animal Health Related Legislatives, Guidelines, Standards and Work Ethics**

MODULE CODE: **AGR ANH4 M10 0422**

NOMINAL DURATION: 24 Hours

MODULE DESCRIPTION: This module covers the knowledge, skills and attitude required in the implementation of a set of local, regional, national and international legislative, policy, regulation, guidelines and standards in livestock industries. In addition, it requires the ability to follow work code of ethics and respond to Livestock emergency situation as per the required standard.

LEARNING OUTCOMES

At the end of the module the trainee will be able to:

- LO1.** Identify and Apply Animal Health Related Legislative and Guidelines
- LO2.** Understand and Apply Animal health related Standards and Livestock Emergency Guidelines and Standards (LEGS)
- LO3.** Identify and follow Animal Health Work Ethics

MODULE CONTENTS:

LO1. Identify and Apply Animal Health Related Legislative and Guidelines

- 1.1 Animal health service structure in Ethiopia
- 1.2 Stake holders in the livestock industry
- 1.3 Legislations and policy guidelines in the establishment of animal health services
- 1.4 legislation, regulation and operational strategies on veterinary public health services
- 1.5 legislation, regulations and guidelines
 - 1.5.1. Animal production and breeding
 - 1.5.2 Handling, transportation and marketing of live animal and animal product
- 1.6 Animal health related legislation and guidelines
 - 1.6.1. World Organization for Animal Health (OIE)
 - 1.6.2. Codex Alimentarius Commission
 - 1.6.3. Food and Agriculture Organization (FAO)
 - 1.6.4. Eastern Africa Regional Animal Health Network (EA-RAHN)

LO2. Understand and Apply Animal health related Standards and Livestock Emergency Guidelines and Standards (LEGS)

- 2.1. General information on security protocols to live animals

- 2.2. Guidelines on hygiene protocols to animal products
- 2.3. Characteristics and traceability study on animal, animal product and by-product
- 2.4. Basic concept of Livestock Emergency Guidelines and Standards
- 2.5. Guidelines and standards for the design, implementation and assessment of livestock interventions
- 2.6. Identifying appropriate livelihoods-based livestock responses in emergencies
- 2.7. Technical interventions in response to livestock emergency

LO3. Identify and follow Animal Health Work Ethics

- 3.1 Organizational policies and procedures.
- 3.2 Professional code of ethics and obligations for veterinarians
- 3.3 Basic components of Code of ethics
- 3.4 Workplace-specific management structures and lines of reporting
- 3.5 Work routines in animal health, wellbeing priorities and product hygiene

LEARNING METHODS:

- Lecture
- Group Discussion
- Case study

ASSESSMENT METHODS:

- Written Examinations
- Oral questioning (Interview)
- Assignment

ASSESSMENT CRITERIA:

LO1. Identify and Apply Animal Health Related Legislative and Guidelines

- National animal health service structure and Livestock Industries Stakeholders in the country is identified.
- The types of animal health services establishment and work policy at regional, national and international level are identified.
- The formulation and implementation of public veterinary policy at the local, national, regional and international levels through legislation, regulation and operational strategy are identified and follow.
- Animal health policy and strategies are recognized and updated contentiously.
- The legislation, regulations, guidelines related to related to animal health service, animal production, breeding, handling, transportation, marketing and animal product are recognized and applied.
- Relevant public policy related to veterinary medicine, animal and human health such as health inspections and certification, food safety, animal disease control, animal welfare and trade in animals and animal products should be identified and addressed.
- The legislation and organizational structure of the specific Member Country and the global community (e.g., OIE, Codex Alimentarius Commission) are identified and applied based on its applicability on members country.
- Industry Mission, rule and regulation of the industry is identified.
- Information on working in the industry, including employment terms and conditions is collected and interpreted.

LO2. Understand and Apply Animal health related Standards and Livestock Emergency Guidelines and Standards (LEGS)

- Personal work practices are performed to contribute positively to quality, productivity and effective relationships in the work environment.
- Hygiene protocols are completed to ensure animal health and products of their origin.
- Security protocols are completed to ensure animal safety and sanitation of their products.
- Animal facilities and workplace protocols are evaluated in relation to animal and product specification.
- Animals and products are described using identifiable characteristics.

- A range of traceability animal, product and by-product characteristics are recognized in accordance with organizational requirements.
- Animal health related organizational, local, regional, national and international are identified and implanted as per the required standards.
- Animal health policy and strategies are recognized in Livestock Emergency Situations
- Livestock Emergency Guidelines and Standards (LEGS) are identified and applied for emergency response.
- The application LEGS are identified and applied to emergency situation.
- During the occurrence of emergency, the livestock situation, livelihood and emergency situation as well identified by prior assessment.
- Core standard common to all livestock innervation on emergency situation, those help for general principle, decision- making and planning are identified.
- The main specific LEGS innervation is well identified to respond emergency situation

LO3. Identify and follow Animal Health Work Ethics

- Organization employment guideline, and employment role and responsibility are identified and applied.
- Work schedule is followed in accordance with organisational policies and procedures.
- Job-specific work practices are performed to comply with the principles of ethical conduct, OHS guidelines, environmental processes and industry best practice.
- Every veterinary technician is identified professional code of ethics and obligated.
- Essential characteristic of Code of Ethics and main functions are identified.
- The basic component of Code of ethics is well understood and applied.
- The need for workplace confidentiality is understood and observed.
- Industry and workplace-specific management structures and lines of reporting are complied.
- Work routines are completed with consideration of animal health, wellbeing priorities and product hygiene.
- Animal facilities and workplace protocols are evaluated in relation to animal and product specification.
- Animal handling and interaction are conducted with consideration of the social and behavioural characteristics of animals.

Annex: Resource Requirements

AGR ANH4 M10 0422: Applying Animal Health Related Legislatives, Guidelines, Standards and Work Ethics				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A.	Learning Materials			
1.	TTLM and handouts	prepared by the trainers	25 pcs	1:1
2	Reference Books			
2.1	Fundamentals of Occupational Safety and Health	Mark A. Friend and James P. Kohn, 2007. 4 th ed.	5 pcs	1:5
2.2	Workplace Safety	John Ridley and John Channing, 1999	5 pcs	1:5
2.3	Animal Welfare in animal agriculture: Husbandry, Stewardship, and Sustainability in Animal Production	Wilson <i>et al.</i> , 2012	5 pcs	1:5
2.4	Professionalism and Ethics, Professionalism and Criticism of the sources	Gordana Dodig-Crnkovic, 2011	5 pcs	1:5
2.5	Livestock Emergency Guidelines and Standards (LEGS)	Peter <i>et al.</i> , 2006	5 pcs	1:5
3	written and graphical instructions, Bulletins, data sheet, diagrams or sketches	prepared by the college and manufacturers	3 pcs	1:8
4	Journals			
4.1	Review of animal health service delivery in the mixed crop-livestock system in Ethiopia.	Hooper, P., 2016	5 pcs	1:5
4.2	Animal health service delivery in crop-livestock and pastoral systems in Ethiopia	Gizaw <i>et a.</i> , 2021.	5 pcs	1:5
4.3	Professional ethics in veterinary science: considering the consequences as a tool for problem solving.	van Vlissingen, M., 2001	5 pcs	1:5
4.4	Applied Animal Ethics in Industrial	Hernandez, <i>et al.</i> , 2022	5 pcs	1:5



	Food Animal Production: Exploring the Role of the Veterinarian.			
4.5	Livestock emergency guidelines and standards		LEGS., B.T., 2009	5 pcs 1:5
5	Reports			
5.1	Ethiopia Food and Agricultural Import Regulations and Standards Report		USDA Agricultural report services, 2019	5 pcs 1:5
5.2	Regional Guidelines on Livestock Identification and Traceability (LITS) in the IGAD Region		Dr. Solomon Munyua	5 pcs 1:5
5.3	Council Directive 91/496/EEC laying down the principles governing the organization of veterinary checks on animals entering the Community from third countries and amending.		FAO, FAOLEX, 1991	5 pcs 1:5
5.4	Recognition of animal sentience and prohibition of animal suffering: Animal protection index (API)		Federal democratic republic of Ethiopia, 2000	5 pcs 1:5
6	Guidelines			
6.1	Principles of veterinary medical ethics of the AVMA		American veterinary Association: https://www.avma.org/resources-tools/avma-policies/principles-veterinary-medical-ethics-avma	5 pcs
B.	Learning Facilities and Infrastructure			
1	Class room	7m*8m		1:25
2	Library	Have a digital library/e-library 1.7m ² /trainee		1:25
3	Audio visual/ICT	smart class room		1:25
C.	Consumable Materials			
1.	Paper	A4,A3,A2		5 Pack 1:2
2.	Pencil	0.5		50 Pack 2:1
3.	Flip chart	A1		1 Pcs 1:25
4.	Marker	Temporary/ Permanent		50 Pack 2:1

LEARNING MODULE 11	
TVET-PROGRAMME TITLE: Animal Health Level IV	
MODULE TITLE: Identifying and Handling Diseases of Wild Animals	
MODULE CODE: AGR ANH4 M11 0422	
NOMINAL DURATION: 36 Hours	
<p>MODULE DESCRIPTION: This module covers the knowledge and skills required to implement the identification, classification and handling of major diseases of wild animals in the country. This competence requires the application of knowledge and skills to capture and restrain wild animals humanly, to be able to identify and monitor major wild animal diseases, and apply the proper treatment, disease prevention and control measures.</p>	
<p>LEARNING OUTCOMES</p> <p>At the end of the module the trainee will be able to:</p> <p>LO1. Acquire basic information on wild animals and parks</p> <p>LO2: Identify and handle major infectious disease of wild animals</p> <p>LO3: Identify and handle non-infectious disease of wild animals</p>	
<p>MODULE CONTENTS:</p> <p>LO1. Acquire basic information on wild animals and parks</p> <ol style="list-style-type: none"> 1.1. Behaviour of wild animals 1.2. Common species of wild animals and their eco-tourism importance in Ethiopia 1.3. National parks and respective species of endemic wild animals 1.4. Hazards in handling wild animals to self, bystanders, the public and animals <p>LO2: Identify and handle major infectious disease of wild animals</p> <ol style="list-style-type: none"> 2.1 Diseases, predators and natural disasters of wild animals 2.2 Personal hygiene and cleanliness standards 2.3 Capturing and restraining of wild animals 2.4 Sign, symptoms, transmission, diagnosis, treatment and prevention of major infectious diseases <ol style="list-style-type: none"> 2.4.1. Parasitic diseases 2.4.2. Bacterial diseases 2.4.3. Viral diseases 2.4.4. Fungal diseases 2.4.5. Zoonotic diseases 2.5 Community awareness creation on signs of stress in wild animals 2.6 Public and economic importance of the diseases and advice 	



LO3: Identify and handle non-infectious disease of wild animals

- 3.1.Common non Infectious diseases of wild animals
- 3.2.Treatments, prevention and control of non-infectious diseases
- 3.3.Economic importance of the diseases and advice

LEARNING METHODS:

- Lecture and Discussion
- Démonstration
- Individual and group assignment
- Field visit

ASSESSMENT METHODS:

- Written test
- Practical demonstration

ASSESSMENT CRITERIA:

LO.1: Acquire basic information on wild animals and parks

- Behaviour of some species of wild animals is understood.
- Common species of wild animals and their eco-tourism importance in Ethiopia are mentioned.
- National parks and respective species of endemic wild animals it hosts in Ethiopia are mentioned.
- Hazards in handling wild animals to self, bystanders, the public and animals are recognized and action is taken according to the enterprise guide lines.

LO.2 Identify and handle major infectious disease of wild animals

- Threats to wild animals including diseases, predators and natural disasters are explained.
- Personal hygiene and cleanliness standards are maintained in accordance with OHS procedures and organizational guidelines and procedures.
- Major Infectious diseases of wild animals caused by micro-organisms are identified based on their occurrence, clinical sign and symptoms, mode of transmission, laboratory and post mortem findings according to the national organizational guideline.
- Wild animals are captured, restrained and handled for diagnosis and treatment, according to the enterprise regulation.
- Awareness is created on signs of stress in wild animals when assessing the comfort of the animal being restrained.
- Diagnosis of animal disease is undertaken according to the enterprise guide lines.
- Diseases causing microorganisms are identified by their clinical manifestations, pathological changes and through laboratory diagnosis; by collecting appropriate spacemen from clinically sick and dead animals for specific suspected diseases according the laboratory requirements.
- Prescribed animal treatments are carried out as required, under supervision, according to manufacturer’s instruction and enterprise protocol.
- Prevention and control methods for each of the diseases are identified and outlined according to the enterprise guideline.
- Public and economic importance of the diseases are identified and advice is given and appropriate prevention and control programs are implemented as required under

supervision of a veterinarian.

LO.3: Identify and handle non-infectious disease of wild animals

- Common non-infectious diseases of wild animals are identified based on their occurrence, clinical sign and symptoms, laboratory and post mortem findings; according to the national and organizational guideline.
- Prescribed treatments for the diseases are identified and their usage outlined as required, according to manufacturer’s instruction, enterprise protocol and the national standard veterinary treatment guideline.
- Prevention and control methods for each of the diseases are identified and outlined according to the enterprise guideline.
- Economic importance of the diseases is identified and advice is given and appropriate prevention and control programs are implemented as required under supervision.



Annex: Resource Requirements

AGR ANH4 M11 0422: Identifying and Handling Diseases of Wild Animals				
Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio
A. Learning Materials				
1.	TTLM	Prepared by the trainer	25 Pcs	1:1
2.	Reference Books			
2.1.	Merk veterinary manual	Kahn, C.M., 2005. 8 th ed.		
2.2.	Infectious diseases of wild mammals	Williams, E.S. and Barker, I.K. eds., 2008.		
2.3.	Parasitic disease of wild mammals	Samuel <i>et al</i> 2004. 2 nd ed.		
2.4.	Restraint and Handling of Wild and Domestic Animals	Fowler, M., 2011. 3 rd ed.		
2.5.	Management of disease in wild mammals	Delahay <i>et al.</i> , 2009		
3.	Reference manuals	Prepared by trainer	5	1:5
4.	Journals/Publication/Magazines	International or national	1	1:25
B. Learning Facilities and Infrastructure				
1.	Lecture room	56m ²		
2.	Virtual library (LCD, project and CD)	1.7m ²		
3.	veterinary clinic			
4.	Laboratory room			
5.	Smart room	CD, I pad, Camera, Computer		
C. Consumable Materials				
1.	Cleaning and disinfecting chemicals	Ethanol alcohol	2 ltr	1: 13
		Isopropyl alcohol	2 ltr	1: 13
		bleaching	2 ltr	1: 13
		Glutaraldehyde	2 ltr	1: 13
		Hydrogen peroxide	2 ltr	1: 13
2.	anesthetics	acepromazine, chlorpromazine, and promazine. Ketamine, xylazine, lidocaine,	3vial each	As required
3.	preservatives	Formalin, sodium benzoate,	1 ltr	



4.	Veterinary drug	Antibiotics, anthelmintic, antiprotozoal, antifungal	3 vial each	As required
D.	Tools and Equipment			
1.	Personal protecting equipment	Bee-proof overalls and gloves, Steel capped boots/shoes, Sunhats, Bee veils and Sunscreen lotion	25 Pcs	1:1
2.	Restrain tools	Catchpole, or snare pole rope , tonges and hooks, drop nets, blind traps,	3 pcs each	1:8
3.	Riffle (gun)	Vaccination and treatment	1 pcs	1:25
4.	Treatment tools and equipment	Stethoscope, thermometer, treatment syringes and needles, bolling gun, drenching gun, stomach tube, sprayer, trocar and cannula.		
5.	Basic laboratory equipment	Microscope, sides, refrigerator, incubator, sensitive balances, hot air over, autoclave, centrifuge, water bath, cylinders and beaker	As required	
6.	Sample collection materials	Ice box, swab, vacutainer tube, universal bottle, petri-dish, scalpel blade and handle		
7.	First aid kit		1 kit	

LEARNING MODULE 12

TVET-PROGRAMME TITLE: Animal Health Level IV

MODULE TITLE: Developing value chain analysis

MODULE CODE: AGR ANH4 M12 0422

NOMINAL DURATION: 24 Hours

MODULE DESCRIPTION: This module covers the knowledge, skills, and attitude needed to Understand value chain, Identify concepts of value chain ideas Develop the value chain and Upgraded value addition`

LEARNING OUTCOMES

At the end of the module the trainee will be able to:

- LO1.** Understand concepts of value chain
- LO2.** Identify Value chain analysis
- LO3.** Develop value chain
- LO4.** Upgrade value addition

MODULE CONTENTS:

- LO1.** Understand concepts of value chain
 - 1.1. Concept of value chain
 - 1.2. Scope of value chain
 - 1.3. Principle of value chain
 - 1.4. Characteristic of value chain
 - 1.5. Importance of Value chain
 - 1.6. Concept of value addition
- LO2.** Identify Value chain analysis
 - 2.1. Dimension and structures of Value chain
 - 2.2. Value chain actors
 - 2.3. Value chain maps for different agricultural products
 - 2.4. Value chain techniques for value addition
 - 2.5. Contract farming system
- LO3.** Develop value chain
 - 3.1. Value chain parameters
 - 3.2. Constraints and gaps to develop value chain
 - 3.3. Steps of value chain development
 - 3.4. Value Chain selection techniques
 - 3.5. Potential interventions for value chain development
- LO4.** Upgrade value addition

- 4.1. Environmental considerations to upgrade value addition
- 4.2. Identifying Value chain actors for Value addition
- 4.3. upgrading Value chain for agricultural products
- 4.4. Ways of collecting Customers feedbacks in value chain analysis

LEARNING METHODS:

- Lecture and Discussion
- Démonstration
- Simulation
- Role playing

ASSESSMENT METHODS:

- Written test with Oral questioning
- Practical demonstration
- Case analysis

ASSESSMENT CRITERIA:

LO.1. Understand concepts of value chain

- Concepts of value chain are understood.
- Value chain scopes are understood and identified.
- Principle of value chain are understood and identified.
- Value chain characteristic are understood and identified.
- Value chain Importance are discussed and understood.
- Concept of value addition are understood and determined.

LO.2. Identify Value chain analysis

- Dimension and structures of Value chain are identified and interpreted
- Value chain actors are identified according to the objective and interest or need of chain actors
- Value chain maps are illustrated for different agricultural products
- Value chain techniques for value addition are identified and analyzed
- Contract farming system is established to promote value chain.

LO.3. Develop value chain

- Value chain parameters are analyzed to compare the gaps between the existing and the benchmark.
- Constraints and gaps are collected, analyzed and ranked according to the priority used to develop value chain
- Steps of value chain development are identified
- Value Chain selection techniques are identified to develop value chain
- Potential interventions for value chain development are identified

Annex: Resource Requirements

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AGR ANH4 M12 0422: Developing value chain analysis				
Item No.	Category/Item	Description/ Specifications	Qty.	Recommended Ratio (Item: Trainee)
A. Learning Materials(Disability inclusive learning guide)				
1.	TTLM	Prepared by trainers TTLM	25 Pcs	1:1
2.	Reference Books			
2.1.	Supply chain management strategy, planning and operation	Sunil Chopra. (2018) Supply chain management strategy, planning and operation 6th ed. Pearlson.	5	1:5
2.2.	Supply Chain Management: Warehousing, Logistics And Inventory Management	Chester Ward,(2018). <i>Supply Chain Management: Warehousing, Logistics And Inventory Management.</i> Clanrye International	5	1:5
2.3.	Strategic Brand Management Building Measuring And Managing Brand Equity	Keller P.Jacob.(2019) <i>Strategic Brand Management Building Measuring And Managing Brand Equity.</i> Pearson	5	1:5
2.4.	A rough guide to value chain development	Nadja N. & Merten S.(2015). <i>A rough guide to value chain development</i>	5	1:5
2.5.	Operations Mangement Process And Supply Chains 11th Ed	Krajewski Malhotra Ritzman Srivastava,(2017). <i>Operations Mangement Process And Supply Chains 11th Ed.</i> Pearosn	5	1:5
2.6.	Managing Marketing: Marketing Success Through Good Management Practice	Palmer Roger et.al.(2008) <i>Managing Marketing: Marketing Success Through Good Management Practice.</i> Elsevier	5	1:5
3.	Journals/Publication/Magazines	Published/unpublished		
B. Learning Facilities and Infrastructure				
1.	Lecture room	7*8m		
2.	Cooperative lab/ business incubation center	105 – 180 m2 area Needed Per Trainee		
3.	Library	105 – 180 m2 area Needed Per Trainee	1	1:25
4.	Instructional Audio video	Library/classroom location	It depends	1:1



5.	Visual training Media	LCD, Laptops	1 Pcs	1:25
6.	Teaching boards	White board ,Flip chart ,Smart board	1 Pcs	1:25
7.	Arm chair	55 Cm *74 Cm *100Cm	25 Pcs	1:1
8.	Notice board	120*100 Cm	1 Pcs	1:25
9.	White board	240 Cm *120 Cm	1 Pcs	1:25
Consumable material				
1.	White board and permanent marker	Pc	4	1:2
2.	Flip chart		5 Pcs	1:5
Tools and equipment				
1.	Computer	Desktop	13Pcs	1:2
2.	Printer	A4 sized	1Pcs	1:25
3.	Computer table	1.5*0.75m	13 Pcs	1:2
4.	Shelves	1.5*1m	2 Pcs	1:13

APPENDIX-1

Learning Methods:				
For none impaired trainees	Reasonable Adjustment for Trainees with Disability (TWD)			
	Low Vision	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	<ul style="list-style-type: none"> ❖ Provide large print text ❖ Prepare the lecture in Audio/video ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the work shop ❖ Summarize main points 	<ul style="list-style-type: none"> ❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format ❖ Summarize main points 	<ul style="list-style-type: none"> ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees 	<ul style="list-style-type: none"> ❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the work shop



Demonstration	<ul style="list-style-type: none"> ❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation 	<ul style="list-style-type: none"> ❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture 	<ul style="list-style-type: none"> ❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees 	<ul style="list-style-type: none"> ❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipments/ machines ❖ Assign peer trainees to assist ❖ Conduct close follow up
Group discussion	<ul style="list-style-type: none"> ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Brief the thematic issues of the work 	<ul style="list-style-type: none"> ❖ Use sign language interpreters ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member 	<ul style="list-style-type: none"> ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Inform the group members to speak loudly 	<ul style="list-style-type: none"> ❖ Introduce the trainees with their peers
Exercise	<ul style="list-style-type: none"> ❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process 	<ul style="list-style-type: none"> ❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/practical training ❖ Introduce new and relevant vocabularies 	<ul style="list-style-type: none"> ❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/ practical training 	<ul style="list-style-type: none"> ❖ Assign peer trainees ❖ Use additional nominal hours if necessary

<p>Individual assignment</p>	<ul style="list-style-type: none"> ❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy 	<ul style="list-style-type: none"> ❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material 	<ul style="list-style-type: none"> ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material 	
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ASSESSMENT METHODS:				
Interview		<ul style="list-style-type: none"> ❖ Use sign language interpreter ❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension 	<ul style="list-style-type: none"> ❖ Speak loudly ❖ Using sign language interpreter if necessary 	<ul style="list-style-type: none"> ❖ Use written response as an option for the trainees having speech challenges
Written test	<ul style="list-style-type: none"> ❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader (if necessary) ❖ Time extension 	<ul style="list-style-type: none"> ❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension 	<ul style="list-style-type: none"> ❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary. 	<ul style="list-style-type: none"> ❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration/ Observation	<ul style="list-style-type: none"> ❖ Brief the instruction or provide them in large text ❖ Time extension 	<ul style="list-style-type: none"> ❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension 	<ul style="list-style-type: none"> ❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension 	<ul style="list-style-type: none"> ❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

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