



Republic of Rwanda
Ministry of Education



RTB | RWANDA
TVET BOARD

LIVESTOCK DISEASES DIAGNOSIS AND DRUG ADMINISTRATION

ANHDA302

Diagnose livestock diseases and administer drugs

Competence

RQF Level: 3

Learning Hours



50

Credits: 5

Sector: Agriculture and Food processing

Trade: Animal health

Module Type: Specific

Curriculum: AFPANH3002- TVET Certificate 3 in Animal health

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Purpose statement	This module describes the skills and knowledge required to prepare preliminary activities for an Animal care technician, identify materials, tools and equipment related to diagnosis and drug administration. It is intended for learners who have successfully completed ordinary level, level II in animal health and its equivalent and pursuing TVET level III and other related qualification. After that the trainees will be able to use them, examine livestock diseases, take some types of samples like feces, urine, milk, blood, pus, scabs, and use veterinary drugs after diagnosis or in livestock diseases prevention. This module describes the process for using tools, equipment and materials in different veterinary activities.						
Leaning assumed to be in place	Applied chemistry, Applied biology						
Delivery modality	Training delivery			100%	Assessment		Total 100%
	Theoretical content			30%	Formative assessment	30%	50%
	Practical work:			70%		70%	
	• Group project and presentation	20%					
	• Individual project /Work	50%					
				Summative Assessment		50%	

Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1. Identify and select materials tools and equipment	1.1. PPEs are properly selected and used according to sanitary regulations
	1.2. Restraining materials, tools and equipment are properly selected according to the work to be done
	1.3. Materials, tools and equipment for sample collection are properly selected according to the type of samples.
	1.4. Diagnostic materials, tools and equipment are properly selected according to the type of disease.
	1.5. Materials, tools and equipment for drug administration are properly selected according to the route of administration
2. Restrain livestock animals for veterinary intervention	2.1. Behavior signals are properly assessed according to the species
	2.2. Restraining techniques are properly selected according to the species

	2.3. Restraining techniques are adequately used according to the species and the clinical case.
3. Examine livestock diseases	3.1. Anamnesis is properly conducted according to the clinical case
	3.2. General examination of the patient is properly conducted according to the clinical case
	3.3. The case is properly reported according to the observed signs
	3.4. Decision making is properly done according to the case.
4. Collect samples	4.1. Samples are properly identified according to their types
	4.2. Material tools and equipment are adequately selected according to the type of sample
	4.3. Origin/site for sample collection is properly selected according to the pre-direction of the disease.
	4.4. Samples are properly collected according to the laboratory standards
	4.5. Sample is properly labeled according to the types and labeling standards
5. Administrate veterinary drugs	5.1. Livestock body weight is properly measured according to the species.
	5.2. The dose and administration of veterinary drugs are properly done according to manufacturer instruction
	5.3. Wastes are adequately disposed as per their sanitary regulations.
	5.4. The follow up of the patient is properly done according to instruction from the direct supervisor.

Course content

Learning outcomes	At the end of the module the learner will be able to: 1. Identify and select materials tools and equipment 2. Restrain livestock animals for veterinary intervention 3. Examine livestock diseases 4. Collect samples 5. Administrate veterinary drugs
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Learning outcome 1: Identify and select materials tools and equipment		Learning hours: 5
Indicative content		
• Selection of PPEs ✓ Types of PPEs + Respiratory protection, eye protection, ear protection, hand protection • Restraining materials, tools and equipment ✓ Restraining materials + Anesthetics, tranquillizers, needles, syringes, rope,dog muzzle,cotton wool,antiseptics. ✓ Restraining tools + Nose lead, + hobbles ✓ Restraining equipment + Crush, + PPE • Materials, tools and equipment for sample collection. ✓ Types of materials + Cotton swab,petri dish,permanent marker,syringes and needle,test tube,bottle for feces sample,bottle for urine sample,cup for milk sample. ✓ Types of equipment for sample collection + Cool box, + PPE • Diagnostic materials, tools and equipment. ✓ Selection of diagnostic materials, instruments and equipment + Thermometer,stethoscope,vaginal speculum,test tube,percussion hammer - Disposable needle • Materials, tools and equipment for drug administration ✓ Material and for drug administration + Syringes + Needles ✓ Tools for drug administration + Drenchers + Balling guns		
Resources required for the learning outcome		
Equipment	PPEs, Crush, cool box, audiovisual equipment	
Materials	Chalk, pen, workshop,muzzles, ropes, sticks, tranquillizers, anesthetics, syringes, needle, cotton wool, workshop, antiseptics, cotton swab, petri dish, permanent marker syringes and needle, test tube,cup for feces sample, bottle for urine sample,cup for milk sample, needle adaptor,	

	animals, workshop, Veterinary clinic, plastic bag, disposable needle for blood collection, test tube, board, pen, permanent marker Veterinary hospital
Tools	Nose lead, hobbles, thermometer, stethoscope, vaginal speculum, drenchers, balling guns
Facilitation techniques	Observation, Practical works, Group discussion, Audio-visual Presentation Visits
Formative assessment methods	Written assessment, Performance assessment, Product based assessment

Learning outcome 2: Restrain livestock animals for veterinary intervention	Learning hours: 15
Indicative content	
- Behavior signals of livestock animals ✓ Confidence and willingness to be approached gestures ✚ Cattle, sheep, goat, pig, poultry, rabbit ✓ Defensive gestures ✚ Cattle, sheep, goat, pig, poultry, rabbit ✓ Submissive gestures ✚ Cattle, sheep, goat, pig, poultry, rabbit ✓ Indicators of stress ✚ Signs of a stressed cattle ✚ Sign of a stressed sheep ✚ Signs of a stressed goat ✚ Signs of a stressed pig ✚ Sign of a stressed poultry ✚ Behavior of a stressed rabbit - Selection of restraining techniques ✓ Types of restraining techniques ✚ Physical restraining ✚ Chemical restraining ✚ Psychological ✓ Use of restraining techniques ✚ Physical restraining ✚ Chemical restraining	

 Psychological	
Resources required for the indicative content	
Equipment	Crush
Materials	Dog muzzle,dog ,cages,rope,towel,sticks,pole,tranquillizers,anesthetics,syringe,needles,cotton wool, antiseptics, cattle, sheep, goat, pig, poultry, rabbit, muzzle, rope, towel, cotton wool, Workshop,farm,black board,veterinary clinic
Tools	Nose lead,drenching gun
Facilitation techniques	Practical work, Group discussion, Audio- visual Presentation, Brainstorming, Tutorials
Formative assessment methods	Written assessment, Performance assessment

Learning outcome 3: Examine livestock diseases	Learning hours: 15
Indicative content	
• Conducting anamnesis of sick livestock ✓ Common signs and lesions of livestock ✓ Anamnesis process  Identification of animal owner  Identification of sick animal  History of the patient and farm • Conducting general examination of the patient ✓ Physical examination of an animal  Observation of the animal at distance  Close examination ✓ Environmental examination • Reporting the case to supervisor ✓ Anamnesis record ✓ Close examination record	

✓ Clinical veterinary report forms

- Making decision of the case.

✓ First aid according to clinical signs

- ✚ Administration of antipyretics
- ✚ Administration antidiarrheal
- ✚ Administration of anti-inflammatories
- ✚ Administration of anthelmintics
- ✚ Application of topical drugs

- Reporting the case to supervisor

- ✓ Clinical signs
- ✓ Administered drugs
- ✓ Suggestions

Resources required for the indicative content

Equipment	Audio-visual equipment, PPE
Materials	Identification forms/cards, register, vaccination certificates ,origin certificatefarm record, black board, animals, pen, notes book,live animals,lubricant,soap,antiseptics,gloves,animals, water, anamnesis record/format, clinical veterinary report forms, sick animals
Tools	Thermometer, stethoscope, watch
Facilitation techniques	• Simulation of interview • Practical works, brainstorming, groups discussion, tutorial, internet research, observation, audio-visual presentation
Formative assessment methods	• Written assessment • Performance assessment

Learning outcome 4:Collect samples

Learning hours: 10

Indicative content	
• Identification of different types of samples ✓ Types of samples + Feces, urine, milk, blood, scabs, pus • Selection of material tools and equipment ✓ Materials instruments and equipment for different samples + Feces, urine, milk,blood,scabs,pus. • Selection of origin/site for sample collection ✓ Site/origin of sample collection + Feces, urine, milk, blood, scabs, pus. • Collection of samples ✓ Techniques of samples collection + Feces sample collection + Urine sample collection + Milk sample collection + Blood samplecollection + Scab sample collection + Pus sample collection • Labelling of the sample ✓ Type of sample ✓ Identification of animal ✓ The name of the owner ✓ Date and time of collection	
Resources required for the indicative content	
Equipment	PPEs, Audiovisual equipment, cool box,plastic bag
Materials	Animals, test tubes, plastic cups, detergent, cotton wool, syringes, needles, antiseptics, board,pen,books, SMART room, Permanent marker, samples.
Tools	
Facilitation techniques	• Brainstorming,demonstration,groups discussion,audio-visual presentation,visits,group work,internet research
Formative assessment methods	• Written assessment • Performance assessment • Product based assessment

Indicative content

- Measuring livestock body weight of different species
 - ✓ Methods of body weight measuring or estimation
 - + Use of scales
 - + Body weight estimation using formula
- Calculation of dose and administration of veterinary drugs
 - ✓ Medical prescription
 - ✓ Components of notice
 - ✓ Components of notice
 - ✓ Drug administration techniques
 - + Per os, parenteral, intravaginal, inhalation, topical
- Waste disposal
 - ✓ Classification of waste
 - + Biodegradable waste
 - + Non biodegradable
 - ✓ Disposal methods and techniques
 - + Burning/incineration
 - + Burying/landfill
 - + Recycling
- The follow up of the patient
 - ✓ Regular monitoring of the patient health status
 - + Body temperature
 - + Appetite
 - + Heart beat
 - + Respiratory rate
 - + Rumen movement rate
 - + Secondary effects
- Recording and keeping of health parameters
 - ✓ Body temperature
 - ✓ Heart beat rate
 - ✓ Respiration rate

✓ Rumen movements rate	
Resources required for the indicative content	
Equipment	PPE, computer, scales, incinerator, wheelbarrow, lorry, barrel, audio visual equipment
Materials	Tape measure, paper, pen, markers, animals, books, internet, notice, board, labels, veterinary clinic, veterinary pharmacy, calculator, paper, chalk, drugs, animals, Internet, workshop, medical prescription, flip chart, bins, soaps, water, lime, formaldehyde, mops, brushes, hoses, towel, buckets, bag, broom, mould, rake, disposal pit, reference books, antiseptics, anti-inflammatory, anti-parasitic drugs, antifungal drugs, record keeping, register, flowchart, plastic cups, detergent
Tools	weight balance, pick, shovel, hoe, thermometer, stethoscope
Facilitation techniques	Brainstorming, groups discussion, group work, tutorial, audiovisual presentation, internet researching
Formative assessment methods	Written assessment, Performance assessment, Product based assessment

Integrated/Summative assessment (For specific module)

Integrated situation

The farmer MBARUSHIMANA around KIBISABO TVET School, Western Province, Nyabihu district has two sick calves and needs the assistance of the school clinic to treat his animals. In last week the farmer has got one cow from southern province. The sick calves are of one week of age and present the following signs noticed after conducting anamnesis:

For the first calf : dehydration, depression, weakness, tachycardia, pyrexia, profuse diarrhea which is white and has a rancid smell, anorexia.

For the second calf: joint is hot, swollen, stiff and painful, fever, loss of appetite, depression.

As an animal care technician you are requested to apply symptomatic treatment, collection of feces sample for laboratory examination, and give the report to the veterinary of Muringa sector to the two sick animals. Each case will be treated in 1 hour and the whole treatment will be done in 2 hours.

All required materials are available in school clinic.

Resources

Tools	Nose lead
Equipment	PPE(gloves, overall, boots, masks),crush
Materials/ Consumables	Syringes ,needlesinfusion set, cotton wool, gauze, warm water, anti-inflammatory drugs, multivitamin injection, antibiotics, rope, antiparasitic, plastic cups, detergent

Assessable outcomes	Assessment criteria (Based on performance criteria)	Indicator	Observation		Marks allocation
			Yes	No	
Learning outcome 1: Identify and select materials tools and equipment (15%)	1.1.PPEs are properly selected and used according to sanitary regulations	Ind.1.PPEs are selected			1
		Ind.2.PPEs are used			1
	1.2.Restricting materials, tools and equipment are properly selected according to the work to be done	Ind.1.Restricting materials, tools and equipment are selected			1
		Ind.2.Restricting materials, tools and equipment are used			2
	1.3.Materials, tools and equipment for sample collection are properly selected according to the type of samples	Ind.1.Materials,tools and equipment for sample collection are selected			1
		Ind.2 Materials, tools and equipment for sample collection are used			2
	1.4.Diagnostic materials, tools and equipment are	Ind.1.Diagnostic materials, tools and equipment are			1

	properly selected according to the type of disease	selected			
		Ind.2 Diagnostic materials, tools and equipment are used			2
	1.5.Materials, tools and equipment for drug administration are properly selected according to the route of administration	Ind.1.Materials,tools and equipment for drug administration are selected			1
		Ind.2Materials,tools and equipment for drug administration are used			2
Learning outcome 2: Restrain livestock animals for veterinary intervention (15%)	2.1.Behavior signals are properly assessed according to the species	Ind.1Confidence gestures and Willingness gestures are assessed			1
		Ind.2Defensive gestures are assessed			1
		Ind.3 Submissive(docility) gestures are assessed			1
	2.2. Restraining techniques are properly selected according to the species	Ind.1Physical restraining for differens species are selected			1
		Ind.2Chemical restraining for differens species are selected			1
		Ind.3Psychological restraining for differens species are selected			1
	2.3.Restricting techniques are adequately used according to the species and the clinical case	Ind.1Physical restraining for differens species are used			1
		Ind.2Chemical restraining for differens species are			1

		used			
		Ind.3 Psychological restraining for differens species are used			1
Learning outcome 3: Examine livestock diseases (20%)	3.1.Anamnesis is properly conducted according to the clinical case	Ind.1.The owner of sick animal is identified			2
		Ind.2.The sick animal is identified			2
		Ind.3The history of the sick animal and the farm is taken			2
	3.2.General examination of the patient is properly conducted according to the clinical case	Ind.1.Physical examination of sick an animal is conducted			2
		Ind.2.Environmental examination is conducted			2
	3.3The case is properly reported according to the observed signs	Ind.1 Anamnesis is recorded			2
		Ind2.Results of physical examination are recorded			2
		Ind.3.Results of environmental examination are recorded			2
		Ind.4.The case is reported to supervisor			2
	3.4.Decision making is properly done according to the case.	Ind.1.The first aid is applied			1
		Ind.2.The case is reported to supervisor			1
Learning outcome4: Collect	4.1.Samples are properly identified according to their types	Ind.1 Feces samples are identified			1
		Ind.2 Urine samples are identified			1
		Ind.3.Milk samples			1

samples (30%)		are identified			
		Ind.4.Blood samples are identified			1
		Ind.5 Scabs samples are identified			1
		Ind.6 Pus samples are identified			1
	4.2.Material tools and equipment are adequately selected according to the type of sample	Ind.1Materials,tools and equipment for feces sample collection are selected			1
		Ind.2Materials,tools and equipment for urine sample collection are selected			1
		Ind.3Materials,tools and equipment for milk sample collection are selected			1
		Ind.4Materials,tools and equipment for blood sample collection are selected			1
		Ind.5Materials,tools and equipment for scabs sample collection are selected			1
		Ind.6Materials,tools and equipment for pus sample collection are selected			1
	4.3.Origin/site for sample collection is properly selected according to the pre-direction of the	Ind.1Origin/site for feces sample collection is selected			1
		Ind.2Origin/site for urine sample			1

	disease.	collection is selected			
		Ind.3Origin/site for milk sample collection is selected			1
		Ind.4Origin/site for blood sample collection is selected			1
		Ind.5Origin/site for scabs sample collection is selected			1
		Ind.6Origin/site for pus sample collection is selected			1
	4.4.Samples are properly collected according to the laboratory standards	Ind.1Feces samples are collected			1
		Ind.2Urine samples are collected			1
		Ind.3Milk samples are collected			1
		Ind.4Blood samples are collected			1
		Ind.5scabs samples are collected			1
		Ind.6 Pus samples are collected			1
	4.5.Sample is properly labeled according to the types and labeling standards	Ind.1Feces samples are labeled			1
		Ind.2 urine samples are labeled			1
		Ind.3 Milk samples are labeled			1
		Ind.4 Blood samples are labeled			1
		Ind.5 Scabs samples are labeled			1
		Ind.6 Pus samples are labeled			1
Learning outcome5: Administrative veterinary	5.1.Livestock body weight is properly measured according to the species.	Ind.1Materials tools and equipment for body weight estimation are selected			2

drugs (20%)		Ind.2Body weight estimation using quetelet method is applied			2
		Ind.3Body weight estimation using crevat method is applied			2
	5.2.The dose and administration of veterinary drugs area properly done according to manufacturer instruction	Ind.1Main parts of a medical prescription are identified			2
		Ind.2The drug for administration is selected			2
		Ind.3.Main components of a notice are identified			2
		Ind.4.The dose is calculated			2
		Ind.5Drug administration techniques are applied			2
	5.3. Wastes are adequately disposed as per their sanitary regulations.	Ind.1Separation of biodegradable and non-biodegradable wastes is performed			1
		Ind.2Waste disposal methods and techniques are applied			1
	5.4.The follow up of the patient is properly done according to instruction from the direct supervisor.	Ind.1 Regular monitoring of the patient health status is planned			1
		Ind.2Health parameters recording is performed			1

Total marks	100
Percentage Weightage	100%
Minimum Passing line % (Aggregate): 70%	

References:

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