



REPUBLIC OF KENYA

COMPETENCY-BASED MODULAR CURRICULUM

FOR
AGRICULTURE AND EXTENSION LEVEL 6
(CYCLE 3)

ISCED PROGRAMME CODE: 0811 554 A



TVET CDACC
P.O. BOX 15745-00100 NAIROBI

RUMINANT ANIMAL PRODUCTION

UNIT CODE: 0811 551 05A

TVET CDACC UNIT CODE: AGR/CU/EXT/CR/05/4/MA

UNIT DURATION: 120 HOURS

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Produce ruminant animals

Unit Description

This unit specifies competencies required to produce ruminant animals. It entails breeding ruminant animals, feeding ruminant animals, managing ruminant animal parasites and diseases, carrying out ruminant animals' routine management practices and managing ruminant products.

Summary of Learning Outcomes

By the end of this unit, the learner should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Breed Ruminant animals	10
2.	Feed Ruminant animals	30
3.	Manage Ruminant parasites	20
4.	Manage ruminant diseases	20
5.	Carry out ruminant routine management practices	30
6.	Market ruminant products	10
Total		120

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcomes	Content	Suggested Assessment Methods
1. Breed Ruminant	Theory	• Written tests

animals	<p>1.1 Breeding of ruminant animals</p> <ol style="list-style-type: none"> 1. Definition of terms 2. Importance of breeding Ruminant animals 3. Types of ruminant animals <ol style="list-style-type: none"> 1.1.3.1 Sheep 1.1.3.2 Goats 1.1.3.3 Cattle 1.1.3.4 Camels 1.2 Breeding methods <ol style="list-style-type: none"> 1. Cross breeding 2. Close breeding 3. Line breeding 4. Inbreeding 5. Upgrading 1.3 Breeding tools and equipment's <ol style="list-style-type: none"> 1. Animal pregnancy testing kit 2. Hormone testing kit 3. Semen collection kit 4. Ovulation prediction monitors 5. Artificial insemination kit 6. Uses of breeding tools and equipment 7. Maintenance of breeding tools and equipment's 1.4 Selection of breeding stock in Ruminant animals <ol style="list-style-type: none"> 1. Definition of terms 2. Importance of selecting breeding stock in Ruminant animals 3. Factors to consider when selecting breeding stock 1.5 Methods of mating <ol style="list-style-type: none"> 1. Definition of terms 2. Types of mating 	<ul style="list-style-type: none"> • Reflection papers • Projects • Interviews/ Oral questions • Workshop reports • Individual/group assignments • Practicals
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	<p>1.5.2.1 Natural mating 1.5.2.2 Artificial insemination 3. Advantages and disadvantages of mating 1.6 Preparing breeding records</p> <p>Practice Collect semen from a superior bull using Artificial insemination</p>	
2. Feed Ruminant animals	<p>Theory</p> <p>2.1 Ruminant feeds</p> <p>1. Definition of terms 2. Importance of Ruminant feeds 3. Types of Ruminant feeds</p> <p>2.1.3.1 Concentrates 2.1.3.2 Forage 2.1.3.3 Pastures</p> <p>2.2 Feed formulation</p> <p>1. Pearson's square method 2. Trial and error method</p> <p>2.3 Factors determining animal nutritional requirement.</p> <p>2.4 Preparing feeding records</p> <p>Practice</p> <p>2.5 Formulate feed ration of Ruminant animals. 2.6 Feed Ruminant animals. 2.7 Prepare feeding records of Ruminant animals.</p>	<ul style="list-style-type: none"> Written tests Reflection papers Projects Interviews/ Oral questions Workshop reports Individual/group assignments Practicals
3. Manage Ruminant parasites	<p>Theory</p> <p>3.1 Ruminant parasites</p> <p>1. Definition of terms 2. Types of ruminant parasites</p> <p>3.1.2.1 Internal parasites 3.1.2.2 External parasites</p>	<ul style="list-style-type: none"> Written tests Reflection papers Projects Interviews/ Oral questions Workshop reports

	<p>3.2 Sign and symptoms of Ruminant parasites</p> <ol style="list-style-type: none"> 1. Loss of appetite 2. Emaciation 3. Staring coat 4. Dullness <p>3.3 Parasite control measures</p> <ol style="list-style-type: none"> 1. Deworming 2. Spraying 3. Dipping <p>3.4 Preparing parasite control records</p> <p>3.5 Managing parasite control waste</p> <p>Practice</p> <p>3.6 Carry out identification of external parasites in Ruminant's animals.</p> <p>3.7 Carry out parasite control measures using different methods.</p> <p>3.8 Carry out parasite control waste management.</p>	<ul style="list-style-type: none"> • Individual/group assignments • Practicals
<p>4. Manage ruminant diseases</p>	<p>Theory</p> <p>4.1 Ruminant diseases</p> <ol style="list-style-type: none"> 1. Definition of terms 2. Types of ruminant diseases <ul style="list-style-type: none"> 4.1.2.1 Bacterial disease 4.1.2.2 Fungal diseases 4.1.2.3 Protozoan diseases 4.1.2.4 Rickettsial diseases 4.1.2.5 Nutritional diseases <p>4.2 Sign and symptoms of Ruminant diseases</p> <ol style="list-style-type: none"> 1. Loss of appetite 2. Emaciation 3. Staring coat 4. Dullness 	<ul style="list-style-type: none"> • Written tests • Reflection papers • Projects • Interviews/ Oral questions • Workshop reports • Individual/group assignments • Practicals

	<p>4.3 Diseases control measures</p> <ol style="list-style-type: none"> 1. Deworming 2. Spraying 3. Dipping <p>4.4 Preparing diseases control records</p> <p>4.5 Managing diseases control waste</p> <p>Practice</p> <p>4.6 Carry out identification of diseases in Ruminant's animals.</p> <p>4.7 Carry out diseases control measures using different methods.</p> <p>4.8 Carry out diseases control waste management.</p>	
5. Carry out ruminant routine management practices	<p>Theory</p> <p>5.1 Routine management practices of Ruminant animals</p> <ol style="list-style-type: none"> 1. Definition of terms 2. Importance of routine management practices of Ruminant animals 3. Types of management practices in Ruminant animals <ul style="list-style-type: none"> 5.1.3.1 Feeding 5.1.3.2 Vaccination 5.1.3.3 Deworming 5.1.3.4 Housing 5.1.3.5 Identification 5.1.3.6 Docking 5.1.3.7 Shearing <p>Practice</p> <p>5.2 Carry out routine management practices in ruminant animals</p>	<ul style="list-style-type: none"> • Written tests • Reflection papers • Projects • Interviews/ Oral questions • Workshop reports • Individual/group assignments • Practicals
6. Market ruminant	<p>Theory</p> <p>6.1 Ruminant products</p>	<ul style="list-style-type: none"> • Written tests • Reflection papers

products	<ol style="list-style-type: none"> 1. Definition of terms 2. Importance of ruminant products 3. Types of Ruminant products <ol style="list-style-type: none"> 6.1.3.1 Milk 6.1.3.2 Meat 6.1.3.3 Mutton 6.1.3.4 Wool 6.1.3.5 Skin 6.1.3.6 Hides 6.2 Preservation of Ruminant products <ol style="list-style-type: none"> 1. Cooling 2. Refrigeration 3. Freezing 4. Smoking 5. Drying 6. Fermentation 6.3 Distribution of ruminant products 6.4 Preparation of ruminant product records <p>Practice</p> <ol style="list-style-type: none"> 6.5 Carry out processing of ruminant products using various methods 6.6 Carry out preservation of ruminant products using various methods 	<ul style="list-style-type: none"> • Projects • Interviews/ Oral questions • Workshop reports • Individual/group assignments • Practicals
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Suggested Methods of Instruction

- Role playing
- Group discussion
- Direct instruction

Recommended Resources for 25 Trainees

S/No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)

A	Learning Materials			
1.	Business Journals		5 pcs	1:5
2.	writing materials		50	2:1
3.	Charts		1	1:25
4.	PowerPoint presentations	For trainer's use		
5.	Whiteboard		1	1:25
6.	Assorted color of whiteboard markers	For trainer's use		
7.	Printers		1	1:25
8.	Projector		1	1:25
B	Learning Facilities & infrastructure			
1.	Lecture/theory room		1	1:25
2.	Agriculture lab		1	1:25
C	Tools and Equipment			
1.	Animal pregnancy testing kit		5	1:5
2.	Hormone testing kit		5	1:5
3.	Semen collection kit		5	1:5
4.	Ovulation prediction monitors		5	1:5
5.	Artificial insemination kit		5	1:5
6.	breeding tools and equipment	set	5	1:5