GENETICS IN ANIMAL BREEDING

ISCED UNIT CODE: 0841 541 09A

TVET CDACC UNIT CODE: HE/CU/AHP/CC/07/6/MA

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Apply knowledge of genetics in animal breeding.

UNIT DURATION: 50 Hours

Unit Description

This unit specifies the competencies required by an animal health and production technologist to apply knowledge of genetics in animal breeding. It involves applying knowledge of basic concepts of animal genetics, identifying tools of animal breeding, applying knowledge of growth and development in animal breeding, and keeping of breeding records.

Summary of Learning Outcomes

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

S/No	Learning Outcomes	Duration (Hours)
1.	Apply principles of basic concepts of animal genetics	**15**
2.	Identify tools for animal breeding	**15**
3.	Apply knowledge of growth and development in animal breeding	**15**
4.	Keeping breeding records	**5**
Total		**50**

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcomes	Content	Suggested Assessment Methods
1. Apply knowledge of	1.1. Basic Concepts of Animal Genetics 1.2. Definitions of key terms	• Written tests

basic concepts of animal genetics	1.2.1. Qualitative genetics 1.2.2. Genetic material 1.2.3. Mutations and Chromosomal aberrations 1.2.4. Quantitative Genetics 1.3. Animal cell physiology 1.4. Quantitative and qualitative genetics 1.4.1. Coat color 1.4.2. Udder 1.4.3. Egg production 1.4.4. Height 1.4.5. Weight 1.4.6. Milk production 1.5. Chromosomal aberrations 1.5.1. Deletion 1.5.2. Translocation 1.5.3. Insertion 1.5.4. Inversion	• Third party report • Interviews/ Oral questions • projects
2. Identify tools for animal breeding	2.1. Theory of selection 2.1.1. Natural selection 2.1.2. Artificial selection 2.2. Livestock breeding programs 2.3. Traits of economic importance 2.4. Animal breeding tools 2.4.1. Selection 2.4.2. Breeding 2.5. Breeding systems and methods	• Written tests • Third party report • Interviews/ Oral questions • Case Studies • Projects

3. Apply knowledge of growth and development in animal breeding	3.1. Definitions of key terms 3.1.1. Prenatal growth 3.1.2. Postnatal growth 3.2. Importance of growth in livestock production 3.3. Factors affecting postnatal growth and development 3.4. Compensatory growth	• Written tests • Third party report • Projects • Interviews/ Oral questions • Case Studies
4.Keep breeding records	4.1. Breeding records 4.2. Report on breeding records 4.3. Importance of breeding records	• Written tests • Third party report • Interviews/ Oral questions • Individual/group assignments • Case Studies

Suggested Methods of delivery

- Practical
- Projects
- Demonstrations
- Group discussion
- Direct instructions

Training resources for 25 trainees

S/No.	Category/Item	Description/ Specification	Quantity	Recommended Ratio (Item: Trainee)
	Learning materials			
1.	Projector		1	1:25
2.	Whiteboard/Smart board		1	1:25
3.	Desktop/computer		25	1:1

4.	Lecture/Theory room		1	1:25
5.	Laboratory		1	1:25
6.	Animal farm	As guided by KVB	1	1:25
7.	Library		1	1:25
8.	E-Library		1	1:25