

ANIMAL GENETICS AND BREEDING

UNIT CODE: 0811 441 08A

TVET CDACC UNIT CODE: HE/CU/AHP/CC/06/5/MA

Relationship to Occupational Standards

This unit addresses the unit of competency: Apply knowledge of animal genetics and breeding.

Unit Duration: 50 hours

Unit Description

This unit specifies the competencies required by an animal health and production technician 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 knowledge of basic concepts in animal genetics	20
2.	Tools for animal breeding	10
3.	Apply knowledge of growth and development in animal breeding	10
4.	Keep breeding records	10
Total		50

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Methods of assessment
<p>1. Apply knowledge of basic concepts of animal genetics</p>	<p>1.1 Basic concepts of animal genetics</p> <p>1.2 Introduction to animal genetics</p> <p>1.3 Definitions</p> <p> 1.3.1 Qualitative genetics</p> <p> 1.3.2 Genetic material</p> <p> 1.3.3 Mutations and Chromosomal aberrations</p> <p> 1.3.4 Quantitative Genetics</p> <p>1.4 Animal cell physiology</p> <p>1.5 Qualitative and quantitative genetics traits</p> <p> 1.5.1 Coat colour</p> <p> 1.5.2 Udder</p> <p> 1.5.3 Egg production</p> <p> 1.5.4 Height</p> <p> 1.5.5 Weight</p> <p> 1.5.6 Milk production</p> <p>1.6 Chromosomal aberrations</p> <p> 1.6.1 Deletion</p> <p> 1.6.2 Translocation</p> <p> 1.6.3 Insertion</p> <p> 1.6.4 Inversion</p> <p>1.7 Management of mutation and chromosomal aberration.</p>	<ul style="list-style-type: none"> ● Practical ● Project ● Written tests ● Third party report ● Portfolio of evidence ● Oral questions

2.Tools for animal breeding	2.1 Theory of selection 2.1.1 Natural 2.1.2 Artificial 2.2.Livestock breeding programs 2.3. Animal breeding tools 2.3.1 Selection 2.3.2 Breeding 2.4 Breeding systems and methods	<ul style="list-style-type: none"> ● Practical ● Project ● Written tests ● Third party report ● Portfolio of evidence ● Oral questions
3.Apply knowledge of growth and development in animal breeding	3.1 Definitions 3.1.1 Prenatal growth 3.1.2 Postnatal growth 3.2 Factors affecting postnatal growth and development 3.3 Compensatory growth 3.4 Maturity and body composition	<ul style="list-style-type: none"> ● Practical ● Project ● Written tests ● Third party report ● Portfolio of evidence ● Oral questions
4. Keep breeding records	4.1 Definition breeding records 4.2 Report on breeding records 4.3 Importance of breeding records 4.4 Dissemination of breeding records	<ul style="list-style-type: none"> ● Practical ● Project ● Written tests ● Third party report ● Portfolio of evidence ● Oral questions

Suggested Methods of Delivery

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

Recommended Resources for 25 trainees

S/NO	Category/Item	Description/specification	Qty	Recommended ratio (item: trainee)
	Projector	EPSOM	1	1:25

	Whiteboard/smartboard	2.5 By 1.5.M	1	1:25
	Desktop/computer		1	1:25
	Classroom	Well-lit with 25 seats	1	1:25
	Library	Equipped with genetics and breeding books and E-section	1	1:25
	Animal farm	AS guided by KVB	-	-
	Artificial insemination kit		5	1:5