APPLY KNOWLEDGE OF GENETICS IN ANIMAL BREEDING

UNIT CODE: 0841 541 09A

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

UNIT DESCRIPTION

This unit specifies the competencies required by an animal health 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.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the **key outcomes**, which make up **workplace function**.	These are **assessable** statements, which specify the required level of performance for each of the elements. ***Bold and italicized terms are elaborated in the Range***
1. Apply knowledge of basic concepts of animal genetics	1.1. Animal cell physiology knowledge is applied as per work requirement 1.2. ***Qualitative and quantitative*** genetic knowledge is applied as per work procedure 1.3. Effects of mutations and ***chromosomal aberrations*** are managed as per work requirement.
2. Identify tools for animal breeding	2.1. ***Theory of selection*** knowledge is applied as per work requirement 2.2. Animal ***breeding tools*** knowledge is applied as per work requirement 2.3. Breeding systems and methods are applied as per work procedure
3. Apply knowledge of growth and development in animal breeding	3.1. Factors influencing post-natal growth and development are managed as per work requirement 3.2. Compensatory growth knowledge is applied as per work requirement

	3.3. Maturity and body composition knowledge is applied as per work requirement
4. Keep breeding records	4.1. Breeding records are identified as per livestock production manual
	4.2. Report on breeding records is prepared as per livestock production manual
	4.3. Report on breeding records is disseminated as per livestock production manual

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variables	Range
1. Quantitative and qualitative genetic traits include but not limited to	● Coat colour ● Udder ● Egg production ● Height ● Weight ● Milk production
2. Chromosomal aberrations include	● Deletion ● Translocation ● Insertion ● Inversion
3. Theory of selection	● Natural ● Artificial
4. Breeding tools include but not limited to:	● Selection ● Breeding

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Organizing skills
- Analytical skills
- Interpersonal skills
- Communication skills
- Evaluation skills
- Problem-solving
- Critical thinking

Required Knowledge

The individual needs to demonstrate knowledge of:

- Anatomy and physiology
- Livestock production

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Applied qualitative and quantitative genetic knowledge as per work procedure 1.2 Managed effects of mutations and chromosomal aberrations as per work requirement. 1.3 Applied theory of selection knowledge as per work requirement 1.4 Applied animal breeding tools knowledge as per work requirement 1.5 Applied breeding systems and methods as per work procedure

	1.6 Managed factors influencing post-natal growth and development as per work requirement 1.7 Prepared report on breeding records as per livestock production manual 1.8 Disseminated report on breeding records as per livestock production manual
2. Resource Implications	The following resources must be provided: 2.1 Appropriately simulated environment where assessment can take place 2.2 Access to relevant work environment Resources relevant to the proposed activities or tasks
3. Methods of Assessment	Competency may be assessed through: 3.1. Written tests 3.2. Third party reports 3.3. Oral questioning 3.4. Interview 3.5. Observation
4. Context of Assessment	Competency may be assessed in a: Workplace or simulated workplace
5. Guidance information for assessment	Holistic assessment with related units in the sector