NQF Level: 4 **US No: 116318**

Assessment Guide

Primary Agriculture

Plan & maintain breeding systems

Assessor: . . . . . .

Workplace / Company: . . . . . .

Commodity: . . . . . Date: . . . . . .

The availability of this product is due to the financial support of the National Department of Agriculture and the AgriSETA.

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Department:
Agriculture
REPUBLIC OF SOUTH AFRICA

AgriSETA

Before we start...

This assessment guide contains all necessary activities and instructions that will enable the assessor and learner to gather evidence of the learner's competence as required by the unit standard. This guide was designed to be used by a trained and accredited assessor whom is registered to assess this specific unit standard as per the requirements of the AgriSETA ETQA.

Prior to the delivery of the program the facilitator and assessor must familiarise themselves with content of this guide, as well as the content of the relevant Learner Workbook.

Please Note:

This Unit Standard **116318** Assessment Guide must be read in conjunction with the generic Assessor Guide as prescribed and published by the AgriSETA.

The assessor, facilitator and learner must plan the assessment process together, in order to offer the learner the maximum support, and the opportunity to reflect competence.

The policies and procedures that are required during the application of this assessment are available on the website of the AgriSETA and should be strictly adhered to. The assessor must familiarise him/herself with this document before proceeding.

This guide provides step-by-step instructions for the assessment process of:

Title:	Plan and maintain breeding systems				
US No:	**116318**	**NQF Level:**	4	**Credits:**	3

This unit standard is one of the building blocks in the qualification listed below. Please mark the qualification you are currently assessing, because that will be determined by the context of application:

Title	ID Number	NQF Level	Credits	Mark
National Certificate in Animal Production	48979	4	120	❒
National Certificate in Plant Production	49009	4	120	❒

Please mark the learning program you are enrolled in:

Are you enrolled in a:	Y	N
Learnership?	❒	❒
Skills Program?	❒	❒
Short Course?	❒	❒

Note to Assessor:

If you are assessing this module as part of a full qualification or learnership, please ensure that you have familiarized yourself with the content of the qualification.

Activity Answers

1a

SO 1 AC 1-3

Instructions to learner:

Individual exercise.

Learner Guide: Page 20 **Facilitator Guide: Page 12**

Your facilitator will give a list where the wool production in kg of 50 merino sheep is recorded.

You must do the following

1. Work out the average production of wool.
2. Sort the animals that produce between 1 and 1.4 kg of wool together as "group 1kg". Then sort the animals that produce between 1.5 and 2.4 kg of wool together as "group 2kg" and so on until you reach the "6 kg group" l.
3. Draw a graph with the number of animals on the y-axis and the wool production in kg on the x-axis.
4. Now plot the number of animals (as per group 1kg, 2kg ext.) on the graph.
5. Establish the average production and mark it on the x-axis as x-. That indicates the average.
6. Select all the animals that produce more than 5 kg of wool per year.
7. Work out the average of the selected group's production.
8. Mark the average of the selected group on graph x--.
9. What is the difference between x- and x--?
10. What is this difference called?

Model Answer(s):

The answer will depend on the individual group of animals that was used for this experiment.

Activity Answers

1b

SO 1 AC 1-3

Instructions to learner:

Individual exercise and classroom discussion.

Learner Guide: Page 21 **Facilitator Guide: Page 12**

1. Work out the number of ewes that must be replaced if a farmer replaces 25% of his flock ewes every year.
2. He aims is to cull about 20% of his ewes for reasons other than production.
3. If he intends to replace the ewes with the best half of his ewe lambs work out what the lowest lambing percentage will enable him to do so.
4. Discuss your answers in both activities in class.

Note: Remember if he has a 100% lambing percentage, then only half of the lambs will be ewes

Model Answer(s):

1) 250 =25 % of 1000

2) 20% would be 200 ewe lambs

3) 20% +25% of a possible 50 %(Female part of lambs). This equals 45% and must then be multiplied by 2

A lambing percentage of 90% must be maintained

My Notes ...

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Activity Answers

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SO 2 AC 1-5

Instructions to learner:

Written assignment

Learner Guide: Page 28 **Facilitator Guide: Page 14**

Write a short assignment on one of the following progeny testing schemes:

1. Pig performance testing scheme.
2. Beef cattle – performance testing scheme.
3. Dairy cattle – performance testing scheme.
4. One of the sheep performance testing schemes.

The assignment must address the following:

1. History of the scheme.
2. Testing centres of the scheme.
3. Animals that can participate in the scheme.
4. Control of the scheme.
5. How can it form part of a breeding plan.
6. Cost of participation.
7. Who will participate in the scheme.

Model Answer(s):

The answer will depend on the scheme selected and the facilitator must give feedback to the assessor.

My Notes ...

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Activity Answers

3a

SO 3, SO 4

Instructions to learner:

Individual assignment

Learner Guide: Page 30 **Facilitator Guide: Page 16**

Select a farming enterprise.

Plan a management programme for the enterprise where you give a weekly instruction on what you plan must happen on the enterprise regarding the breeding of the animals on the farm. Give instruction on the breeding methods and supplementary nutrition that must be implemented.

Model Answer(s):

Answer will vary but should include:

1. *A breeding system.*
2. *Mating techniques used.*
3. *Possible synchronizing of females.*
4. *Management of the pregnant females.*
5. *Feeding to females and offspring after birth.*
6. *Management of the male animals.*
7. *Healthcare and nutrition.*

Activity Answers

3b

SO 3, SO 4

Instructions to learner:

Individual written assignment

Learner Guide: Page 35 **Facilitator Guide: Page 16**

Do research and write a small assignment on the different ways that pregnancy tests on farm animals can be performed. Hand in the assignment as part of your portfolio of evidence.

Model Answer(s):

There are a number of methods used to determine pregnancy and the answer is not limited to the following

1) *Accurate observation of oestrus cycles or lack thereof*
2) *Kamar patches on cattle*
3) *Internal veterinary examinations*
4) *Electronic sonar scanning etc*
5) *Swelling of female reproductive organs e.g. udders and vulva*
6) *Decrease in male activity.*

Summative Test and Attitude & Attribute Evaluation

Before the knowledge test is undertaken, the learner must be reminded of what is expected from him / her in terms of summative and reflexive competence. Read and explain to the learner, the **Preparation for Your Final Assessment** section in the learner workbook. Learners and assessor should sign off this section to acknowledge that this step was completed.

Please set up a knowledge test from the questions given as a guideline to learners and supply each learner with a test sheet.

Supply each report with the following heading:

Unit Standard:	116318	**NQF Level:**	4
Learner Name:			

Questions	Model Answers
1. What is meant by the term: locus?	*Where a specific gene is situated on a chromatid of a chromosome.*
2. What is meant by the term: Genome?	*The genetic makeup of specie. That will give you the full picture where genes are situated on which chromosome and its location on the chromosome.*
3. Who was Gregor Mendel?	*He was the first known man that developed the modern basis of heredity calculation and forecast.*
4. What is meant by the term: F1?	*It refers to the first generation cross between unrelated parents.*
5. What is the difference between haploid en diploid?	*Each gamete has a complete set of genes carried in a single set of chromosomes (monoploid / haploid). When two gametes unite, the resulting zygote receives two complete sets of chromosomes carrying two complete sets of genes (diploid).*
6. What is the importance of the process of meioses	*When this new organism produces gametes, reduction division (meiosis) causes the paired chromosomes to separate, so that only one member of each pair goes to any one gamete.*
7. What is meant by the term: genotype?	*The genotype of a cow, ram or chicken can be described as that specific individual's genetic make up, in other*

Questions	Model Answers
	words the unique genetic composition of that particular individual. No two individuals, except for clones and identical twins, have the same genotype. At present the genotype cannot be identified because it is inside the very small cell nucleus. Part of its expression in the individual is also obscured by the environmental influence on the development of the individual.
8. Name the factors that will determine the success of a breeding system	*The frequency of the desirable genes that can be accumulated in the breeding flock.* *The breeder's ability to select effectively.* *The breeder ability or good fortune in mating the right animals.*
9. What is meant by the term: Heterosis?	*The phenomenon of Heterosis vigour is generally known. A classic example is that of a mule, which is hardier than any of it parents. The chief character of hybrids, in which they differ from purebred animals, is that they are more heterozygous in their genetic constitution; for this reason hybrid vigour is ascribed to increased heterozygosis.*
10. What is AI?	*Artificial Insemination.*
11. Identify methods to ensure the success of mating	*Make sure that the rams are fertile by testing them before they are put among the ewes.* *If mating occurs for a period of six weeks make sure that the rams get enough rest.* *Use between 3 – 4 % fertile rams among the ewes (three percent when all the rams have experience and 4% when some of the rams in the group are still young rams).*
12. How will one perform palpation	*The act of feeling with the hand; the application of the fingers with light pressure to the surface of, for purpose of determining physical diagnosis.* *Small stock makes the diagnoses more difficult. There are however very modern apparatus available. Though expensive, the apparatus can be used with high accuracy by a skilled operator. The apparatus is called an ultrasonic scan apparatus and make use of sound to produce a picture on a screen. It can then be establish if the female is pregnant. Although there are a lot of other methods, it is not practical and therefore not discussed.* *An experienced farmer can also select ewes in the late pregnancy stage by looking at the development of the udder and the development of the abdomen area. A good stockman can sometimes select pregnant animals as early as a month and a half before birth.*

Assessment Feedback Form

Comments / Remarks	
Feedback to learner on assessment and / or overall recommendations and action plan for competence:	
Feedback from learner to assessor:	
Assessment Judgement You have been found: ❍ Competent ❍ Not yet competent in this unit standard	Actions to follow: ❍ Assessor report to ETQA ❍ Learner results and attendance certification issued
Learner's Signature:	**Date:**
Assessor's Signature:	**Date:**
Moderator's Signature:	**Date:**