



2<sup>nd</sup> SEM. 2010/2011

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UNIVERSITY OF SWAZILAND  
FINAL EXAMINATION PAPER

PROGRAMME: BS.c. ANIMAL SCIENCE YEAR 3, BS.c. ANIMAL SCIENCE (DAIRY  
OPTION) YEAR 3, BS.c. AGRONOMY YEAR 3

TITLE OF PAPER: PASTURE AND FODDER MANAGEMENT

COURSE CODE: AS 305

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER QUESTION ONE (1) AND ANY OTHER TWO (2)  
QUESTIONS

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CHIEF INVIGILATOR

### QUESTION 1

(a) Cultivated pastures are an integral part of a commercial dairy operation. Give a complete list of all the commonly used methods to establish pastures from seed and vegetative material. (10 marks)

(b) Beginning from final ploughing until seedling emergence, outline (not list) the step by step activities one would have to carry out to establish a 10-ha field of Rhodes grass pasture using the fertiliser distributor (broadcast) method. (18 marks)

(c) Winter feeding may present problems if proper planning is not done. Forage conservation is one way to address the problem of winter feeding. Assume you are in charge of a dairy farm at Luyengo. The farm has 250 cows which require supplementary feeding in the form of silage for 180 days in winter. Given that the cows are fed at a rate of 10 kg (on dry matter basis) per head per day, calculate:

(i) the total silage needs during winter. (3 marks)

(ii) the total area required for silage production if the yield of maize is 20 tonnes/ha fresh material, with 24% dry matter. (3 marks)

(iii) the number of pit silos required assuming each silo is 5.5 m long, 3 m wide and 1.5 m deep, and each cubic meter can take 120 kg of silage on dry matter basis. (3 marks)

(iv) adjust the values for total silage needs during winter, area required to produce the maize and the number of pit silos assuming a 20% loss in silage production. (3 marks)

### QUESTION 2

Good grazing management takes care of both grazing resources (soil and vegetation) and livestock; briefly discuss four ways in which this can be achieved. (30 marks)

**QUESTION 3**

Hay making is an easier method of fodder conservation. However, there are losses associated with hay production. Outline these losses and suggest practical ways to reduce losses in hay making.

(30 marks)

**QUESTION 4**

(a) Briefly comment on the integration of cultivated pastures into the farming system.

(10 marks)

(c) With an aid of a diagram, define and illustrate deferred rotation grazing in a three-year rotation system for both summer and winter seasons.

(20 marks)

**QUESTION 5**

One of the most serious constraints to livestock production in Swaziland is inadequate and low quality of forage in winter. Briefly explain how this problem can be addressed through the use of crop residues and agro-industrial by-products.

(30 marks))