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69

2ND SEM. 2004/2005

PAGE 1 of 2

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN AGRICULTURE APH OPTION 4
BACHELOR OF SCIENCE IN AGRICULTURE AEM OPTION 4
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION 4

COURSE CODE: APH 408 ✓

TITLE OF PAPER: DAIRY PRODUCTION AND TECHNOLOGY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS.

DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE CHIEF INVIGILATOR.

QUESTION 1

Compare and contrast the fermentation technologies of yoghurt and koumiss

(25 Marks)

QUESTION 2

Briefly describe the major differences between

- a) Ice cream and Ice milk **(7 Marks)**
- b) Hard cheese and soft cheese **(9 Marks)**
- c) *Yersinia enterocolitica* and *Streptococcus thermophilus* **(9 Marks)**

QUESTION 3

- a) Explain the major differences between recombined milk and double toned milk **(5Marks)**
- b) Calculate and show how much water, raw milk and skim milk powder will you mix to get 100 kg of toned milk containing 2% butter fat and 10%SNF when given the following ingredients:
 Raw milk = 4% butter fat; 8 % SNF;
 Skim milk powder = Water 3%; SNF 97%; **(20 Marks)**

QUESTION 4

Discuss the role of hormones in lactogenesis and galactopoiesis

(25 Marks)

QUESTION 5

Mr. Maseko's breeding program enables him to have a calf every two years. Briefly explain the effect of this to milk production and discuss an alternative program for efficient milk production.

(25 Marks)