



SUPPLEMENTARY EXAMINATION 2011/2012

UNIVERSITY OF SWAZILAND

PROGRAMME: BSc. ANIMAL SCIENCE III,

BSc. ANIMAL SCIENCE DAIRY OPTION III

COURSE CODE: AS 308

TITLE OF PAPER: RESEARCH METHODS

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS

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PERMISSION**

QUESTION 1

A human nutritionist is interested in evaluating the effect of adding yeast to goat feed on milk fat content. The researcher has twenty seven goats, nine from each breed. Previous research findings indicate that goat breed has a significant effect on milk fat percent. Within each breed, 3 goats are randomly allocated to each of the 3 levels of yeast culture. The tables below show output from analysis of the data.

Analysis of Variance Procedure

Dependent Variable: MILKFAT

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	12.64666667	3.16166667	40.36	0.0017
Error	4	0.31333333	0.07833333		
Corrected Total	8	12.96000000			

	R-Square	C.V.	Root MSE	MILKFAT Mean
	0.975823	6.508859	0.27988093	4.30000

Source	DF	Anova SS	Mean Square	F Value	Pr > F
BLOCK	2	11.38666667	5.69333333	72.68	0.0007
YEAST LEVEL	2	1.26000000	0.63000000	8.04	0.0397

- i). What is the treatment in this experiment? (4)
- ii). What is the blocking factor in this study? (4)
- iii). Based on the output presented what conclusions can you draw from this study? (12)
- iv). Based on the output presented, would you be in a position to categorically state which pairs of treatment means have a significantly different effect? Explain your answer (5)

QUESTION 2

Write notes on the following;

- a) Simple random sampling. (15)
- b) Unintentional bias. (10)

QUESTION 3

A forage researcher carries out an experiment to determine the effect of lime application and variety on annual dry matter yield of rye grass. There are two rye varieties and two levels of lime application.

- i). Fully state the experimental design. (8)
- ii). Discuss systematic random sampling. (12)
- iii). What are nominal numbers? (5)

QUESTION 4

- a) You are requested to carry out a study on what farmers consider to be the main factors limiting goat productivity in Swaziland. Explain how you would go about obtaining the sample for your study. (15)
- b) Briefly discuss opinion based and observational research methods. (10)

QUESTION 5

- a) First list and then briefly discuss five reasons for use of samples in research (20)
- b) What is sampling error and what can be done to minimizing this type of error (5)