

2nd SEM.2013/2014



**UNIVERSITY OF SWAZILAND
SUPPLEMENTARY EXAMINATION PAPER**

PROGRAMME: BSC AGRIC. ECON. & AG. BMgt (2)

COURSE CODE: ABE 208

TITLE OF PAPER: POST-HARVEST TECHNOLOGY

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO
OTHER QUESTIONS.**

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GRANTED BY THE CHIEF INVIGILATOR**

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SECTION ONE: COMPULSORY

QUESTION ONE

(i) Discuss the importance of rats (rodents) in post-harvest handling of grain. Indicate the measures you would take to control rodents in stored grain. **(10 Marks)**

(ii) Define the following terms:

- a. Post-harvest,
- b. Post-harvest losses,
- c. Psychrometry,
- d. Food pipeline,
- e. Dehulling

(10 Marks)

(a) Once a crop reaches physiological maturity in the field, it gets subjected to factors that lead to losses of quality and quantity. Give a sequential description of how losses occur in a maize crop from the time it reaches physiological maturity in the field to the time it gets to the market in line with post-harvest pipeline. **(15 Marks)**

(iii) Discuss the behaviour of grain when stored under conditions of fluctuating relative humidity. **(5 Marks)**

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SECTION II: ANSWER ANY TWO QUESTIONS

QUESTION TWO

- (a) Discuss the importance of post-harvest knowledge and skills in modern farming practices. **(15 marks)**
- (b) Why should farmers be concerned about quality of their grain? **(5 Marks)**
- (c) List any five (5) factors that are assessed when determining the quality grade of maize **(5 Marks)**

QUESTION THREE

- (a) Discuss the salt method of estimating grain moisture content. Indicate the characteristics of common salt (*NaCl*) that makes it useful in estimating grain moisture content **(10 Marks)**
- (b) Write short notes on complete metamorphosis indicating the grain damage caused by insects at each stage. **(10 Marks)**
- (c) With the aid of a labelled sketch diagram, describe the anatomy of a maize grain kernel. **(10 Marks)**

QUESTION FOUR

- (a) Describe the process involved in solar drying of maize grain using box dryers. **(10 Marks)**
- (b) Discuss precautions that farmers should take when selecting insecticides for use in controlling storage pests **(10 marks)**
- (c) Give a full description of how the weevil tablet works **(10 Mark)**