



**1<sup>st</sup> SEMESTER 2009/2010**

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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION**

**PROGRAMME: BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION  
YEAR 3, BACHELOR OF SCIENCE IN AGRONOMY YEAR 3,  
AND BACHELOR OF SCIENCE IN HORTICULTURE YEAR 3**

**COURSE CODE: CP 303**

**TITLE OF PAPER: PLANT PATHOLOGY & DISEASE MANAGEMENT**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS  
BEGIN EACH QUESTION ON A NEW SHEET**

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CHIEF INVIGILATOR**

**QUESTION 1**

- a. Discuss mycotoxins (host-specific & non-host specific) associated with post-harvest decays.  
Give two examples of pathogens that produce EACH type mycotoxins. (10 Marks)
- b. With the aid of diagram, describe three ascocarps in ascomycetes and give an example of a fungus that produces each ascocarp. (15 Marks)
- [25 Marks]**

**QUESTION 2**

If a plant variety has been bred to contain 3 resistant genes coded  $R_1R_3R_7$ :

- a. List the possible gene combination within the plant and the pathogen (11 Marks)
- b. Using the gene-for-gene concept, state the interaction between host and pathogen, i.e. presence or absence of disease. (14 Marks)
- [25 Marks]**

**QUESTION 3**

A farmer who grows tomatoes in his/her 1.5 hectare farm wants to control *Phytophthora infestans* on his/her tomatoes that are starting to flower. The chemical to be used is a fungicide Ridomil at 755ml/ha.

- a. Describe how the farmer should go about calibrating a knapsack sprayer. (10 Marks)
- b. Assuming that during the calibration 2.7L of water was used, calculate how much of the fungicide the farmer will use to spray the crop, keeping in mind that the volume of the sprayer is 20L. (15 Marks)
- [25 Marks]**

**QUESTION 4**

Describe symptoms of the following diseases:

- a. Gray leafspot on maize (5 Marks)
- b. Early blight on tomatoes (5 Marks)
- c. Halo blight on beans (5 Marks)
- d. Powdery mildew on mango trees (5 Marks)
- e. Leafspot on swiss chard (5 Marks)
- [25 Marks]**

**QUESTION 5**

Contrast the following:

- a. Downy and powdery mildew (10 Marks)
  - b. Oomycetes and ascomycetes (10 Marks)
  - c. Autoecious and heteroecious rust (5 Marks)
- [25 Marks]**