



**2<sup>ND</sup> SEM 2009/2010**

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**UNIVERSITY OF SWAZILAND  
FINAL EXAMINATION PAPER**

**PROGRAMME: B.Sc. AGRONOMY YEAR 4**

**COURSE CODE: CP 409**

**TITLE OF PAPER: SUGARCANE PRODUCTION**

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

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS.**

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CHIEF INVIGILATOR**

**ANSWER ANY FOUR (4) QUESTIONS**

**QUESTION 1**

- (a) There seems to have been some sugarcane in Natal in early Zulu history. It was grown by the local inhabitants for chewing and there was no attempt for making sugar. Discuss the four phases of sugarcane variety introduction. **(20 marks)**
  
- (b) Name five sugarcane varieties grown in Swaziland. **(5 marks)**

**QUESTION 2**

- (a) Sugarcane can be planted in two types of row spacing, i.e. single row spacing and tramline spacing. Single row spacing is best suited where manual harvesting is practiced. What other factors are considered in single row spacing? **(10 marks)**
  
- (b) Seed cane quality is very important in sugarcane production, young seed of 7 – 9 months of age should be used at planting. What are the seed preparations required to ensure quick and uniform germination? **(10 marks)**
  
- (c) What are the advantages of hand planting of sugarcane? **(5 marks)**

**QUESTION 3**

- (a) What are the five factors conducive for disease development in sugarcane production? **(5 marks)**
  
- (b) Discuss the five principles of disease control in sugarcane. **(20 marks)**

**QUESTION 4**

- A. There is a continual need to supplement the soil's supply of nutrients in order to maintain profitable yield. Discuss the influence on nutrient availability of the following factors;
- (a) Exchange capacity
  - (b) Clay minerals
  - (c) Nutritional importance of soil pH
- (15 marks)**
- B. Filter cake can be used in autumn and winter planting to provide moisture to the seed cane. It can also be used as organic manure. What are the characteristic of filtercake when used as organic manure and how would you determine the quantity to use at planting?
- (10 marks)**

**QUESTION 5**

- (a) Sugarcane plants need to be conditioned for harvesting by withholding irrigation and by ripening. Name the two groups of chemical ripeners used in sugarcane production and give a brief explanation of what they are and how they work.
- (12 marks)**
- (b) Give a brief outline on the methods of ripener application.
- (10 marks)**
- (c) Why is flowering prohibited in sugarcane production?
- (3 marks)**