

The University of Melbourne

Semester 2, 2005 Assessment

**School of Agriculture and Food Systems
208255 - Crop Management**

Reading Time 15 minutes

Writing Time 3 hours

This paper has three pages

Authorised Materials:

Calculators may be used.

No other materials are authorised to be used in this examination.

Instructions to Invigilators:

Students will require three script books each to answer section A, B and C of this examination paper.

Students **may not** remove the examination paper from the examination room.

Instructions to Students:

This examination is divided into three sections, answer each section in a separate examination booklet

Students are required to answer **six (6)** questions on this examination, at least one from each section.

All questions are of equal value.

Paper to be held by Baillieu Library:

This paper may be held with the Baillieu Library.

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SECTION A

~~Q~~Question 1

How can crop monitoring improve crop management? Detail the major crop inspections and the major components of each inspection explaining the reasons for their timing and importance to crop management..

(20 marks)

~~Q~~Question 2

Describe the decision making process and the crop management sequence in growing a wheat crop.

(20 marks)

SECTION B

~~Q~~Question 3

Herbicides are classified in different ways for different purposes. Explain the different classification systems and their purpose.

(12 + 8 marks)

~~Q~~Question 4

"Weed Seed bank dynamics is the mechanism to manage weeds". Discuss this statement and include in your answer your understanding of the major phases within the weed seedbank..

(20 marks)

Question 5

Diseases are major impediments to crop production. (a) Explain the main effects of diseases on crop production, giving two examples of diseases for each AND describe the major methods of management for each group. In your answer show a clear differentiation between the main types plant resistance.

(20 marks)

Question 6

Herbicide resistance is becoming a major factor affecting crop production. Explain how herbicide resistance occurs and management strategies to overcome or delay the occurrence of herbicide resistance. In your answer provide detail of the herbicide groups in which resistance has occurred and why these herbicide groups have had resistance develop compared to other herbicide groups, all of which are used within broadacre cropping.

(20 marks)

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SECTION C

Question 7

Each district/region has a "flowering window" which growers aim to match with the pattern of crop development. Discuss the climatic limits that define this window and propose strategies growers can use to ensure that grain crops flower within these limits.

(20 marks)

Question 8

Discuss the factors that have led to the development of current crop rotations in the Wimmera and Mallee regions of southeastern Australia, including the issues that are currently challenging these rotations.

(20 marks)

Question 9

Temperature is an important determinant of crop development. Discuss the relationship between crop development and temperature. Your answer should also discuss how growers could use this relationship in crop management.

(20 marks)

Question 10

- a) Establishment of a crop is a critical issue in crop management. Discuss the management decisions that need to be considered around seeding to ensure good establishment.
- b) Discuss the particular establishment issue of the absolute and relative placement of seed and fertiliser at seeding and the methods growers can adopt to minimise crop damage due to fertilisers.

(10+10 marks)

Question 11

The selection of appropriate nitrogen fertilizer rates for cereal and oilseed crops is a complex decision. Discuss the issues that should be considered when developing a recommendation for a particular crop and paddock.

(20 marks)

"End of Examination"