Agricultural and Horticultural Science

2013 Chief Assessor's Report

Government of South Australia

SACE Board of SA

AGRICULTURAL AND HORTICULTURAL SCIENCE

2013 CHIEF ASSESSOR'S REPORT

OVERVIEW

Chief Assessors' reports give an overview of how students performed in their school and external assessments in relation to the learning requirements, assessment design criteria, and performance standards set out in the relevant subject outline. They provide information and advice regarding the assessment types, the application of the performance standards in school and external assessments, the quality of student performance, and any relevant statistical information.

GENERAL COMMENTS

A substantially smaller cohort of students this year demonstrated a mixed range of results, from the exceptional to the disappointing.

SCHOOL ASSESSMENT

Assessment Type 1: Investigation

A number of investigations were highly detailed and innovative, and clearly demonstrated the enthusiasm of the students involved. However, many investigations were assessed too leniently. Teachers are encouraged to refer to the exemplars on the Agricultural and Horticultural minisite or to confer with other teachers in cross-marking activities to achieve greater consistency in their interpretation of the performance standards.

Students should be supported by their teachers during the planning process. Guidance is appropriate when the hypothesis or experimental design is unlikely to yield results that will generate worthwhile discussion. Once the students have been assessed for specific feature I1, 'Design of agricultural and horticultural science investigations', teachers can alert them to shortcomings in their design and suggest possible alternatives or improvements.

Several students were unable to analyse and discuss their results effectively, particularly in the light of their original hypothesis. Teachers need to reinforce to students the importance of evaluating procedures, analysing trends in data, discussing the effects of errors on results, suggesting improvements to their design, and making recommendations of significance to agriculture in the discussion section.

Assessment Type 2: Skills and Applications Tasks

Several students displayed an exceptional level of competence and understanding and addressed the performance standards at the highest levels. However, as with this year's investigations, there were many tasks where the evidence presented did not reach the standards awarded.

It was also disappointing to see the number of tests that were not completed, with questions not attempted and entire pages left blank. This was also evident in several examination papers this year. Students should be advised to attempt questions even when they are unsure of the answer.

EXTERNAL ASSESSMENT

Assessment Type 3: Examination

The thirty-eight papers marked this year had a mean and range of scores similar to those of previous years. There were, however, several students who got zero for an entire question, reflecting the issue of students who leave questions blank, rather than making an attempt to answer them.

Part 1: Short-answer Questions

Question 1

This was the best-answered question in the examination paper. The earthworm parts of the question were answered well but some students did not recognise that part (c) related to nematodes and answered relating to earthworms.

Question 2

This was the second-best-answered question. Most students were able to describe the benefits of micro-organisms to animals, but only some could explain how this is an advantage. Part (c) was answered well.

Question 3

Not many students answered this question well, with many clearly guessing. In part (b) students almost exclusively selected the bee and honey production.

Question 4

Correct agricultural terminology was essential in answering this question. About half the students could do this, whereas others used lay terms such as ‘stem’ rather than ‘petiole’. Most students gave two clear reasons as to why the plant was a dicotyledon but very few could identify where the cotyledons would have been found.

Question 5

Most students identified the correct internal leaf structures, and all gave some examples of function for their identified structures. Part (b) tended to be poorly answered by most students as they were not able to recognise respiration, or where it was taking place, on the graph. Most, however, knew how to reduce respiration in storage.

Question 6

There was a reasonable interpretation of the table by most students, with part (d) answered particularly well.

Question 7

Although most students handled this question easily, marks were lost for not giving the graph a title or labelling the axes, indicating the need to read the question carefully. However, many students could not explain the graph in parts (b) and (c) and did not gain marks for reference to weight with water.

Question 8

This question was answered very poorly. Part (a)(i) was answered well but answers to parts (a)(ii) and (a)(iii) were often incorrect, with many students not recognising follicle-stimulating hormone (FSH) as being responsible for stimulating sperm production. Part (b) was handled reasonably well but part (c) was answered by less than half the students, with many demonstrating little or no knowledge of the important process of embryo transfer.

Question 9

This question was answered correctly by most students. In part (b) some were unsure of the functions of the organisms specified.

Question 10

Most students correctly drew an arrow on the graph. In part (b) many named a food type rather than a component of feed and in part (c) did not know why it is a benefit to feed hay instead of grain in early gestation. Although a low energy intake is needed, a lower-cost feed that meets this requirement is appropriate.

Question 11

Students demonstrated some knowledge of damaging farming practices but lost marks because they often omitted the detail. Only half the students listed some saline soil rehabilitation practices.

Question 12

This was the most poorly answered question in the paper. Fungi and bacteria were often overlooked as students listed invertebrates such as the earthworm and the nematode. In part (b) only half the students stated humification, oxidation, and mineralisation; others showed a significant gap in their knowledge despite the regular recurrence of this theme in past examinations. The capable students also referred to cation exchange capacities and humus. The less able students gained marks for mentioning organic matter. Part (c) was answered by only a few students.

Question 13

The description of pH was generally handled well by students. Most students could accurately explain nutrient availability. Some students described gypsum, rather than lime, as a common pH remedy.

Part 2: Extended-response Questions

Each extended-response question is marked out of 20, with 16 marks being allocated for content and 4 marks for communication.

In awarding the communication marks, the following factors were taken into account:

- clarity and expression
- organisation and relevance
- correct use of agricultural and horticultural terminology.

Approximately equal numbers of students answered the two questions with equal success. A majority of students satisfactorily addressed the dot points required in both questions.

Question 14

The best response included clear and concise examples in each section of the answer. Some students who may have been short of time simply listed dot points. They received some marks for content, although their communication marks were lower than for those who answered in clearly expressed sentences.

Question 15

Most students who chose the plant option had a good knowledge of a plant production system. Students who broke the question down into its dot points and addressed each part with clear and detailed examples did very well.

Chief Assessor
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