

Assessment Report

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Level 2 Agricultural and Horticultural Science 2018

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Part A: Commentary

Students with a good knowledge of New Zealand regions and the agricultural and horticultural practices carried out throughout these regions were awarded higher grades.

Students who followed the instructions in the reformatted assessment for 91294, and chose three different livestock they had studied, achieved higher grades. Refer to the standard specific comments below.

Part B: Report on standards

91290: Demonstrate understanding of techniques used to modify physical factors of the environment for NZ plant production

Candidates who were awarded **Achievement** commonly:

- showed understanding of what a microclimate is
- described how reflective mulches in commercial orchards increase the quality of fruit
- described how the level of carbon dioxide can be controlled can be controlled in a glasshouse.

Candidates whose work was assessed as **Not Achieved** commonly:

- were unable to describe a microclimate.
- did not describe how carbon dioxide can be controlled in a glasshouse
- did not describe how the use of reflective mulches increased the quality of fruit.

Candidates who were awarded **Achievement with Merit** commonly:

- explained the effect of carbon dioxide enrichment on crop yield with reference to plant processes
- explained the effect of drainage on plant growth with reference to plant processes
- explained microclimate and its effect on vineyard production.

Candidates who were awarded **Achievement with Excellence** commonly:

- justified the use of diffused glass or whitewash on glasshouses in terms of economic and environmental factors
- justified the use of mounding and/or subsurface drainage in a citrus orchard in terms economic and environmental impacts
- demonstrated comprehensive understanding of how both helicopters and frost sprinklers modify the environment and, analysed the practices in terms of economic, social and environmental impacts.

Standard specific comments

Although candidates may not be familiar with specific contexts given in the question, they are expected to be familiar with climate and regions in various parts of New Zealand. Candidates are expected to apply their understanding to a range of commercial horticultural contexts.

91294: Demonstrate understanding of how NZ commercial management practices influence livestock growth and development

Candidates who were awarded **Achievement** commonly:

- described how their chosen livestock's growth and development was measured
- described how their chosen livestock's breeding selection occurred
- described how their chosen livestock's health management practices were carried out.

Candidates whose work was assessed as **Not Achieved** commonly:

- did not show understanding of how to measure livestock growth
- did not know how selective breeding was carried out
- did not know how a health management practice was carried out.

Candidates who were awarded **Achievement with Merit** commonly:

- showed an in-depth understanding of how livestock growth and development was carried out, and how this affected the feeding requirements for the livestock
- showed an in-depth understanding of how livestock selective breeding is carried out and the effects of quality genetics on the conversion of food into growth of muscle tissue
- showed an in-depth understanding of how livestock health practices are carried out and how this affects the livestock's' ability to combat ill-effects by linking it to feed utilisation.

Candidates who were awarded **Achievement with Excellence** commonly:

- evaluated the livestock growth and development system in terms of its effects on timing, the cost to the producer, and the income gained
- evaluated the livestock selective breeding system in terms of its effects on quality, the cost to the producer, and the income gained
- evaluated the livestock health management practice in terms of its effects on quality, quantity, the cost to the producer, and the income gained.

Standard specific comments

In 2018 the format of the exam was changed to allow candidates to use livestock from their learning. Candidates who did well in this standard had in-depth knowledge and understanding of at least three different livestock.

Those candidates who applied their learning to the questions achieved higher grades. Candidates who attempted to use the given livestock examples without

being familiar with the livestock, disadvantaged themselves. Candidates must select three different livestock. Note: dairy cows and beef cattle are the same livestock species. Candidates who memorised responses to questions from previous examinations did not do well.

91297: Demonstrate understanding of land use for primary production in New Zealand

Candidates who were awarded **Achievement** commonly:

- showed a basic understanding of factors, which influence traditional and current land use.
- understood why the decision to scale back the conversion of forestry land to dairy farming was made.
- explained why Northland's environmental or economic factors are suitable for subtropical fruit
- explained the main agricultural and horticultural uses of land in the Central Otago region
- explained how irrigation technology has allowed land use to change.

Candidates whose work was assessed as **Not Achieved** commonly:

- were unable to give correct factors that influenced traditional and current land use
- gave only a partial response that did not explain the main agricultural and horticultural uses of land in the Central Otago region
- were unable to show how irrigation technology has allowed land use to change.

Candidates who were awarded **Achievement with Merit** commonly:

- gave reasons for why at least two factors influenced traditional or current land use
- explained with examples why the land is being used in its current form and how it differed from its previous use.

Candidates who were awarded **Achievement with Excellence** commonly:

- showed a comprehensive understanding of the topic. These students often presented more than two ideas for each answer, showing current and relevant knowledge
- justified the decision to scale back the conversion of forestry land to dairy farming by comparing and contrasting these two land uses
- evaluated the conversion of the traditional land use to avocado orchards in Northland
- discussed the expansion of irrigation.

Standard specific comments

Many candidates made generalised statements about all dairy farmers polluting the waterways by allowing effluent or nitrogen to enter, without really showing an understanding of what is being done on the farm. It is important for candidates to keep up to date with the latest agricultural and horticultural practices through news such as the Rural News. This will help them better understand current issues from an industry perspective.

Learning about the different regions, such as climate, markets and the requirements of our major crops/farm types is an advantage.

[Agricultural and Horticultural Science subject page](#)

Previous years' reports

[2016 \(PDF, 219KB\)](#)

[2017 \(PDF, 45KB\)](#)

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