

National Certificate of Educational Achievement

2013 Assessment Report

Agricultural and Horticultural Science Level 2

- 91290 Demonstrate understanding of techniques used to modify physical factors of the environment for New Zealand plant production**
- 91294 Demonstrate understanding of how New Zealand commercial management practices influence livestock growth and development**
- 91297 Demonstrate understanding of land use for primary production in New Zealand**

COMMENTARY

The examination papers provided sufficient opportunities for the candidates to attain all levels of achievement. Candidates made good use of the bullet points and the scaffolding of questions in structuring full answers.

The quality of candidates' answers has improved over previous years.

STANDARD REPORTS

91290 Demonstrate understanding of techniques used to modify physical factors of the environment for New Zealand plant production

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They typically:

- understood how irrigation and plant spacing modifies the physical factors of the water, soil, light and air
- described how mulches or north-facing land improved soil conditions for outdoor fruit production
- were able to describe how planting a maize crop later in the South Island modified yield.

NOT ACHIEVED

Candidates who were assessed as Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They typically:

- partially or insufficiently described how irrigation or plant spacing modifies physical factors of the environment for commercial outdoor vegetable production
- partially or insufficiently described how mulching or the use of north-facing land modifies the physical factors of the environment for commercial outdoor fruit production
- partially or insufficiently described how late planting or cultivation modifies the physical factors of the environment for commercial maize production
- did not attempt the entire paper
- wrote incorrect or incomplete answers
- rewrote the question in the answer without supplying any further information
- did not show any understanding of the physical factors of humidity, light, temperature, water or soil.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit typically:

- linked the physical factor in the question with how it affected plant production
- explained how mulching or north-facing land helps in the production of high quality fruit by referring to plant processes and/or ripening

- demonstrated an understanding of how light, temperature, water or soil modification improves plant production
- provided an explanation why maize crops are usually sown in cultivated soil
- showed how irrigation and plant spacing increases outdoor vegetable production through plant processes and referred to the growth, quality and quantity of the crop grown.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence typically:

- were able to give well thought out answers demonstrating thinking when comparing the preferred technique over another technique based on environmental and economic impacts
- justified the preferred technique by comparing alternative techniques which could be used
- fully explained all reasons, with comprehensive and integrated supporting evidence
- justified the use of irrigation and plant spacing to modify physical factors of the environment for outdoor vegetable production, in terms of economic returns
- compared the environmental impacts of the use of mulching and north-facing land in commercial outdoor fruit production
- compared the economic and environmental impacts of cultivation and no-cultivation in the production of maize.

91294 Demonstrate understanding of how New Zealand commercial management practices influence livestock growth and development

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They typically:

- attempted all questions
- understood how vaccinations worked and were able to relate this to growth rate
- showed knowledge of how breeding improves the quantity of meat produced
- understood how topping or pasture monitoring affected pasture quality to improve beef growth rate
- showed knowledge of how stocking rate affected livestock growth and development
- showed knowledge of how controlled environments influenced growth.

NOT ACHIEVED

Candidates who were assessed as Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They typically:

- did not answer all questions
- confused vaccinations with drenches
- confused carcass scanning with pregnancy ultrasound
- did not relate stocking rate to profit per hectare
- showed a narrow understanding of broiler chicken production

- did not relate egg incubation to broiler production.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit typically:

- wrote extended answers to demonstrate knowledge
- showed in-depth understanding of vaccination
- linked carcass scanning to breed selection
- linked pasture quantity and quality to beef production
- showed an in-depth understanding of the effect of stocking rate on profit per hectare
- showed an in-depth understanding of broiler chicken production and incubation.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence typically:

- showed comprehensive understanding of lamb carcass scanning and were able to use this to recommend suitable changes in the breeding program
- showed comprehensive understanding of stocking rate and how it affects profit per hectare
- showed comprehensive understanding of broiler chicken production and incubation
- gave justification in terms of economic return to the farmer.

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

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They typically:

- explained how farmers used their land to grow carrots, kumara and farm dairy cows
- supported their answers with some data related to social, environmental, workforce, political, economic or technological factors.

NOT ACHIEVED

Candidates who were assessed as Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They typically:

- did not attempt one question or parts of questions
- did not answer or did not relate their answer to the question
- did not provide enough information.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit typically:

- provided a detailed explanation of two factors that determined land use in New Zealand. Land use is described as: 1. Traditional land use (growing kumara); 2. Current land use (growing carrots); and 3. Future land use (converting sheep and beef farms to forestry)

- supported their answers with details/data/information which related to any two factors – social, environmental, workforce, political, economic or technological.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence typically:

- wrote clear logical statements about the advantages and disadvantages of changing land use and fully explained how production is supported by the following factors – social, environmental, economic, workforce and technological factors
- made comparisons and/or analysed with evidence or examples that showed a comprehensive understanding of traditional, current and future land use in New Zealand
- proofread their answers and made changes where necessary.