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NEW ZEALAND QUALIFICATIONS AUTHORITY
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QUALIFY FOR THE FUTURE WORLD
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SUPERVISOR'S USE ONLY

Level 3 Agricultural and Horticultural Science, 2018

91531 Demonstrate understanding of how the production process meets market requirements for a New Zealand primary product(s)

2.00 p.m. Tuesday 27 November 2018
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of how the production process meets market requirements for a New Zealand primary product(s).	Demonstrate in-depth understanding of how the production process meets market requirements for a New Zealand primary product(s).	Demonstrate comprehensive understanding of how the production process meets market requirements for a New Zealand primary product(s).

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL parts of the task in this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–8 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Achievement

TOTAL

A4

ASSESSOR'S USE ONLY

INSTRUCTIONS

This assessment consists of ONE task, in TWO parts.

Select a nationally significant primary product and its specific market, and write them in the box below. Before doing this, however, read the **entire task** carefully, to ensure that your selection will allow you to meet the requirements of the task.

Nationally significant primary product (in unprocessed form): potatoes

Specific market for this product: Fries ✓

RESOURCE A

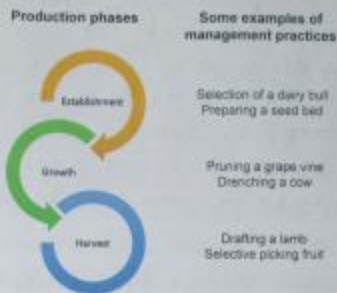
Intensive cropping

The Ministry for Primary Industries has a goal to double New Zealand's primary sector exports between 2012 and 2025 to \$64 billion. Between 2012 and 2016, the value of exports grew by 3.3%. To reach the 2025 target, the value of exports will have to grow by 9.5% per year between now and 2025.

One of the more recent reports highlights that horticultural products and other primary foodstuffs have shown good growth towards the target. However, production will have to scale up substantially and quickly in all sectors to reach the goal. That means a combination of more intensive use of land, more inputs, more irrigation, and more investment to drive more productivity, in combination with adding value to products.

RESOURCE B

The growing cycle of an agricultural or horticultural product is summarised below



PART A

Explain how a producer of a primary product of your choice could manipulate their management practice decisions to increase market returns from their product.

Note: This could come, for example, from producing a greater volume of product for sale, or from increasing the market value of their product.

in your answer:

- provide details of THREE specific management practices
- ensure that each phase of the growing cycle, as shown in Resource B above, is represented
- clearly state how increased market returns could be achieved by the grower.

Management practice (1)

Fertiliser. Fertiliser is applied to the Soil/potatoes from September to December. 3 types of fertiliser is applied, Nitrophoska Blue, Sulphur and urea. Nitrophoska Blue contains 4 ingredients to ensure the potatoes are getting what they need to grow. Nitrophoska Blue contains magnesium for Chlorophyll, Nitrogen for leaf growth, potassium to get the sugar and water moving.

More space for this answer is available on the next page.

around the tubers and phosphorus. By adding Nitrophoska blue the potatoes are getting what they need to grow and a steady rate and healthily. ~~So~~ 400kg per HA is added. Sulphur is added at 300kg per HA to lower the pH of the soil to 7 to prevent ~~Stop~~ Scab. Scab is a cosmetic ~~problem~~ ^{defect} that would ~~decrease~~ ^{decrease} sales for the producer. Urea is added at 100 kg per HA. Urea is for the nutrients.

Management practice (2)

Irrigation. Irrigation is done from December through to March, which is also summer for New Zealand. By irrigating the crops, the potatoes are being given the right amount of water to successfully grow. As through summer New Zealand doesn't get a lot of ~~rain~~ ^{rain} in fall the potatoes would not grow to ~~the~~ ^{the} quality and quantity requirements for the specific market, fries. By ~~giving~~ giving the potatoes 9mm a day per HA, they are being given enough to grow successfully. At establishment the rainfall is giving the seed beds enough water as potatoes are planted in October through to December. By December the seeds are being irrigated. Through the growth period the potatoes are ~~be~~ being irrigated at a continuous pace and amount to give them enough to grow but not enough to cause defects such as hollow heart. By harvest the potatoes would have reached quantity and

Management practice (3)

mounding. Mounding is done to ensure the tubers are buried as that is how they grow successfully. By mounding the potatoes twice the tubers can grow off buried stems. As the potatoes are mounded the potatoes are given more room to grow, thus increasing the end quantity at harvest. At establishment the first mounding is done in November and the first mound is 15 cm in height. The second mound is done in December during the growth period. By harvest the potatoes have grown successfully due to the mounds, thus meeting quality and quantity requirements. This would then increase the market returns for the grower as the quantity requirement has been met or possibly exceeded this would increase the sales for the grower. //

PART B

By analysing the three management practices discussed in Part A, justify which management practice you believe would have the greatest potential impact for a producer wishing to increase market returns from the product by meeting market requirements.
In your answer, provide specific data.

Fertiliser I believe fertiliser would have the greatest ~~potential~~ potential impact for a producer. By adding fertiliser the potatoes are ensured to be getting the ~~the~~ right amount of nutrients they need to grow successfully and meet market requirements. The market require ~~the~~ potatoes being used for fries to be 10cm in length and be a weight of 250g. By giving them Nitrophoska blue, the grower has a better chance at meeting those requirements than growing them naturally. By giving them nitrophoska blue the potatoes are ensured to have enough nitrogen for leaf growth, potassium for water and sugar movement, magnesium for chlorophyll and ~~phosphorus~~ phosphorus for pest control. This would give the grower a better chance at meeting both quantity and quality requirements. By giving the potatoes fertiliser there is less of a chance of wastage as all of the potatoes won't be fighting for nutrients which will result in most of the same size potatoes. By applying sulphur to the soil prevents scab which is a cosmetic defect, this would effect the quality requirement. By adding sulphur the grower can avoid this defect.

This would also decrease wastage. By decreasing wastage and meeting the quality and quantity requirements for the market, the grower's market returns are going to increase. Buyers may also keep buying from this grower if they see that they can meet requirements well, which would then increase the grower's market returns further.

Achievement Exemplar 2018

Subject	Level 3 – Agricultural and Horticultural Science		Standard	91531	Total score	A4
Q	Grade score	Annotation				
1	A4	<p>The response provides general information about the management practices used in the production of potatoes. It covers, in general terms, how the production process meets market requirements.</p> <p>There is an adequate explanation of the effect of relevant management practices, involved in potato production, and how it impacts on the market returns.</p> <p>No specific details or data provided in justification of management practice which has the overall greatest potential impact for a producer wishing to increase market returns.</p>				