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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.

Merit

TOTAL

M5

ASSESSOR'S USE ONLY

and its specific market, and write them in the box below

ask carefully, to ensure that your selection will allow you to

processed form) Velvet //

Velvet

China (1st cut) South Korea (re-

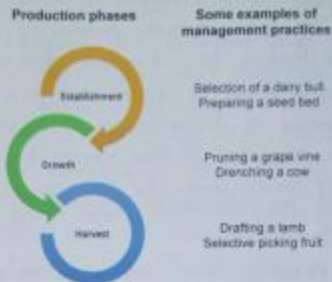
Intensive cropping

to double New Zealand's primary sector exports between 2012 and 2016, the value of exports grew by 3.3%.

... will have to grow by 6.5% per year between now and

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)

A management practise from the establishment phase to increase market returns for velvet would be selecting sire genetics and breeding values (BV). The grower would aim to select a sire from national records which has a high BV for velvet production. This can be anywhere up to 3 kg and indicates how well the sire animal did in relation to other sires. Selecting a high BV for

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velvet production increases the chances of the offspring producing large amounts of velvet because they have high quality genetic material in them. Therefore if the farmer has treated the offspring well it will be very likely to reach its genetic potential and grow a large amount of velvet, which the farmer can sell. It also means the farmer has a high quality stag which he can use as a sire to increase the quality of his whole herd. //

Management practice (2) Stag

A management practice from the growth phase is spring feeding to maximise velvet growth. Velvet grows from ~~November~~ ^{September} to January but 1st cut velvet is the most valuable as regrowth is unpredictable. High energy supplements and leafy, green pastures need to be fed from early August onwards so that the stags improve their body weight by September so that all of their energy can go into growing velvet rather than fattening up after the winter. High energy supplements are required as velvet is a growing tissue which requires large amounts of energy to grow. By feeding the stags properly their genetic potential can be expressed and they will grow a large amount of velvet. By feeding properly at the ~~the~~ crucial growing phase the farmer will be maximising the amount of velvet produced and therefore able to sell and get an increased market return. //

Management practice (3)

A management practise from the harvest phase is timing of velvet removal. The timing of removal is crucial because the valuable part of the velvet is the soft "jelly like" cartilage stage of growth. It is difficult to get the maximum growth of the velvet in cartilage form before it calcifies and decreases dramatically in value. The first cut should generally be taken 55 to 65 days after the button (previous years antler stub) has been caste (fallen off) as the max jelly like cartilage amount is around 60 days. The farmer must however watch the stags closely as older stags antlers calcify earlier than younger stags. By removing the velvet at the correct time the farmer can have a large amount of maximum quality velvet and therefore get increased market return.

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

I believe that timing of antler removal is the most important management practise as it has the greatest potential impact for a producer wishing to increase market returns from velvet. This is because although selecting good genetics is helpful, if not cared for the genetic potential will not be expressed and if it is expressed and then cut at the wrong time the genetic potential will be wasted and the farmer will not reap any economic benefits. Nutrition is an extremely important management practise as it ensures that the stags are very healthy and that the peak amount of velvet will be produced but again, if cut at the wrong time all the economic potential will be wasted and the former would have spent a large amount of money on high quality food and will not make any profit. Timing of velvet removal is so crucial because of the prices received for it. The velvet is graded based on its growth stage, thickness and length of the beams and roundness of the tynes. By cutting the velvet at the correct stage the beam will be ~~long~~ and not too long but very thick and the tynes will be round and

have no calcification in them. The 2018 pricing is as follows: A+B Grade = \$130/kg, D Grade = \$10/kg, Overgrown = \$90/kg, Spiker velvet + Regrowth = \$40/kg, and Buttons + Hard Antler = \$25-35/kg. Therefore if a farmer has grown a healthy spiker that has produced alot of velvet and the farmer cuts it at the right time he will earn \$40/kg. If he allows it to slightly overgrow and become too long and calcify slightly (can happen within 2 days) the farmer will lose \$50/kg. If the antler become too hard he could lose up to \$115/kg. By removing the first cut of velvet correctly the farmer will maximise the time for regrowth which, although unpredictable is highly valuable. In conclusion timing of removal of velvet antler has the greatest potential impact on the producers ~~economic~~ economic demands because the value varies at each stage. Genetic potential and nutrition have large impacts but are ultimately paid off by the timing of velvet removal which is why it's the most important to increase market returns of velvet by meeting China and South Korea's market requirements. //

Merit Exemplar 2018

Subject	Level 3 – Agricultural and Horticultural Science		Standard	91531	Total score	M5
Q	Grade score	Annotation				
1	M5	<p>The response provided information, with some detail, on management practices that impact on market returns for velvet in the Asian Market and explained why the market has these requirements.</p> <p>Some data provided in justification of management practice which has the overall greatest potential impact for a producer wishing to increase market returns.</p>				