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91531



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# Level 3 Agricultural and Horticultural Science, 2016

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

9.30 a.m. Monday 14 November 2016  
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

## INSTRUCTIONS

This paper consists of ONE task, in THREE parts.

**Before** you select your nationally significant primary product and its specific market, 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):	Lamb //
Specific market for this product:	UK market //

Growers follow a sequence of production processes in order to produce a product that meets the requirements of different markets.

In the table below, list the key production processes that are carried out during the production cycle of your product. The production cycle includes the following three phases: establishment, growth, and harvesting of the product.

Production processes
e.g. Grafting new vines e.g. Drenching for parasites
Flushing
Tapping
Lambing
Docking
Weaning
Ram/Ewe selection

**PART A**ASSESSOR'S  
USE ONLY

For your product, describe the consistency or uniformity requirements that could influence the price received by a grower when supplying to the market, and explain why the market has these requirements.

- NZ lamb which is being sold to the UK market have several consistency requirements which help it to excel in the market. The UK market is strongest around Christmas time, when they want lamb leg roasts for Christmas dinners.
- The UK market prefers leg roasts which are  $< 2.6$  kg. This makes them a good size to fit in the oven ~~and~~ or pan, while still being generous enough to feed the family.
  - It is preferred that the leg roasts have little to no white fat. When a small amount of fat is present, it can enhance flavour, but too much makes the meat greasy and leaves a fatty after taste.
  - The UK like meat that is a deep red in colour. This often means that the meat is tender and juicy.

This examination continues  
on the following page.

**PART B**

In the table below, write THREE management practices that are carried out during the production of your product.

The selected management practices must be from at least TWO of the following different phases:

- Establishment of product
- Growth of product
- Harvesting of product

TWO examples have been provided to assist you.

Management practice		Phase of production
e.g.	Grafting new vines	Establishment
	Drenching for parasites	Growth
1	<del>Rach/Ewe</del> Flushing	Establishment
2	Weaning	Growth
3	Topping <del>Weaning</del> <del>lambing</del> <del>marking</del>	<del>Establishment</del> Establishment

Explain how your selected management practices impact directly on the quality and/or quantity of your product at harvest.

Management practice (1)

Flushing refers to the fattening of the ewe, which happens 3 weeks before mating. Flushing helps to fatten the ewe. Because a lot of body weight is lost due to the ~~stress~~ stress and physical effort of the ewe, it is important she is in good condition so that after lambing she has enough liveweight to stay alive. Flushing also helps the ewe to ovulate. It can improve the fecundity of the ~~ewe~~ ewe and increase it's chances of having more than one egg fertilised when mating occurs. If more lambs are born from each ewe, a higher number of lambs overall will be produced, which will increase the farmer's returns. ✓

## Management practice (2)

Weaning refers to taking the ~~ewe~~ lamb off the ewe and therefore removing milk from its diet. By the time the lamb is 3 weeks old it will have started eating grass as part of its diet. By 6 weeks the lamb is typically on a diet of 50% grass, 50% milk. By 12 weeks the lamb is eating enough grass to remove milk from the diet. Weaning too early can cause lambs to ~~be~~ not be at a weight where there is not enough time to supplement/crop feed them to a sufficient finishing weight. Weaning too late can mean the lambs are getting milk when they don't need it, which can cause lambs to be overfat, ~~and~~ ~~not~~ which reduces the price received. //

## Management practice (3)

Tupping refers to the mating of the ewe and ram. As the gestation period of a ewe is typically 142-152 days or 5 months, the farmer must ~~tup~~ ~~the~~ cycle the rams approximately 5 months before ~~to~~ he wants to be lambing. If the farmer tups too late, his lambs may not be at a sufficient weight to sell to the UK Christmas market, as they need time to be conditioned on supplement ~~&~~ or crop feed after weaning to reach finishing weights. If the farmer tups too early his lambs are more likely to get caught in severe weather and many can die. He may also mismatch feed supply, which can cause lambs ~~to~~ to grow slowly, and can make them overfat. //

## PART C

Justify which management practice you consider would have the greatest impact on the overall price received and/or the quantity available for sale by the producer.

I consider flushing to have the greatest impact on the price received by the producer. Flushing helps condition the ewe so that after she has gone through the stress and physical strain of lambing, she has sufficient conditioning to not run into any ~~but~~ health problems. These problems can include a low ~~with~~ milk production. This means the lamb will have less feed from the ewe, which is where many of the key nutrients come from. Low liveweights can also cause barrenness, also called dry ewes. This is when the ewe does not have a fertilised egg, and therefore will not produce a lamb. Flushing also helps the ewe to ovulate. Ovulation is the production of eggs which are ready to be fertilised. A higher ~~fecundity~~ fecundity means that more lambs are likely to be produced, provided the ram is fertile. If more lambs are produced from each ewe, the farmer is going to have more lambs to sell, and therefore make a greater profit. Another reason flushing is important is that it improves the ewe's general health. Because the ewe is healthy, it will increase the chances of it having a healthy lamb. ~~It~~ It can improve the chances of the ~~ewer~~ lamb receiving strong immunity and antibodies for diseases, which will increase the lamb's //

chances of survival. It will also mean the ewe will have all of the necessary nutrients to produce a ~~stronger~~ big, healthy lamb.

For these reasons I believe that Flushing is the most important management practice carried out by the producer to produce a good product. ~~These~~ This is important for the UK market, as they require large quantities of high quality NZ lamb. If ~~the~~ Flushing is carried out properly by the farmer it should greatly increase his chances of making a good profit. //

<b>Merit exemplar for 91531 – 2016</b>		<b>Grade Score: M5</b>
<b>Question part</b>	<b>Annotation</b>	
A	The response provided information on consistency and uniformity requirements of lamb for the UK market, and explained why the market has these requirements.	
B	The response provided three management practices carried out during lamb production and explained how the management practices affect production. A good understanding of management practices was demonstrated with the use of some data and well-linked explanations for weaning and tugging, and a general description of flushing.	
C	No specific details or data were provided to justify the management practice which has the overall greatest impact on price received or overall quantity produced.	