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NEW ZEALAND QUALIFICATIONS AUTHORITY
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SUPERVISOR'S USE ONLY

Level 2 Agricultural and Horticultural Science, 2016

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

2.00 p.m. Monday 14 November 2016
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of how management practices influence livestock growth and development in commercial production in New Zealand.	Demonstrate in-depth understanding of how management practices influence livestock growth and development in commercial production in New Zealand.	Demonstrate comprehensive understanding of how management practices influence livestock growth and development in commercial production in New Zealand.

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 the questions 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.

TOTAL

Merit

15

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QUESTION ONE: CALVING BEEF HEIFERS

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The most effective management practice available to beef cattle farmers to minimise assisted calvings in first-calving, two-year-old beef heifers is to select sires with a genetic tendency for low birthweight and calving ease.



Source: <http://newsroom.unl.edu/announce/beef/5031/28973>

- (a) Describe how selecting sires with favourable genetics for low birthweight and calving ease is carried out.

//Selecting sires with favourable genetics for low birthweight and calving ease is carried out by selecting sires that have been proven to produce lower birthweight calves and making calving easier from previous years that that animal has sired.//

- (b) Explain how low calf birthweight and calving ease in heifers improves overall calf growth and development.

//Low ~~calving~~ calf birthweight and calving ease in heifers improves overall calf growth and development because when the calf has a lower birthweight it makes it easier for calving as it is a smaller animal, this will result in less calving fatalities and a less stressful process for both the calf and heifer. This then results in a healthier calf and heifer and improves the calves development and growth as both animals will be in better condition, ~~and~~ ~~with~~ as well as less health problems and within the herd.//

- (c) Evaluate the effectiveness of using low birthweight and calving-ease sires by explaining how it improves calf numbers and its effect on the economics of production.

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By using low birthweight and calving-ease sires it improves calf numbers and the economics of production. ^{Because} when calving, if you have a calf that is too big to get out of the heifer it quite often happens that the calf will die due to ~~not~~ ~~being~~ suffocation and in some cases the heifer can ~~also~~ naturally die due to the process of trying to calve a big calf. By having smaller calves at calving there is a far lower risk of having the calf suffocate ~~or~~ the heifer die in the process of calving. This then leads to higher calf numbers, ~~and~~ which then results in higher production on the farm. By having more ~~calf~~ calves the farmer is then able to sell and replace future stock with these new ~~calves~~ ~~and~~ calves and by having more of them he then has increased his economics of production and more profitable. When the calves are born smaller they are also less likely to suffer from any body disorders due to a easier calving. The heifer will be less stressed after a calving that has been easier due to calving a smaller calf and will therefore enable her to raise the ~~entire~~ calf better resulting in a greater growth rate in the calf and increasing the production of the beef animal. //

QUESTION TWO: NAIT TAGGING OF LIVESTOCK

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It is compulsory in New Zealand for all cattle and deer to be tagged with National Animal Identification and Tracing (NAIT) approved radio frequency identification device (RFID) ear tags.



- (a) Explain how using NAIT tagging assists in monitoring the health, growth, and development of cattle or deer.

NAIT tagging assists in monitoring the health, growth, and development of cattle and/or deer as the animal's information is all stored and linked back to the animal. The farmer can see the animal's growth and development rates on the computer, making it ~~an~~ easier and more efficient than recording the data manually. The animal's health can be recorded on NAIT tagging allowing the farmer to identify and ~~follow~~ ^{monitor} the animal's health more closely. The stock's growth and development is recorded via NAIT tagging and helps the farmer keep track of his animal's progress. From this he can find out if his animals are over or under-producing and then he can use certain management practices to ensure that his stock are growing and developing at the right pace, this will lead to ~~an~~ ^a more productive farm.

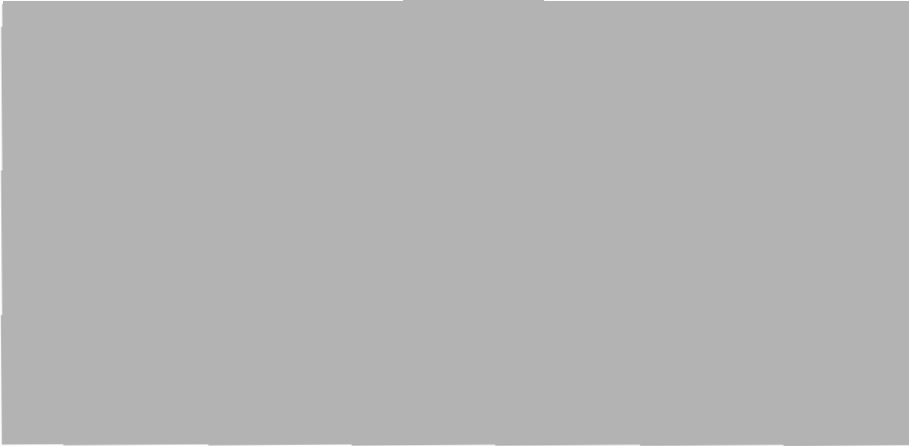
- (b) Justify the use of NAIT tagging to improve the quality of New Zealand's national cattle or deer herd with reference to the economics of production.

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NAIT tagging improves the quality of New Zealand's national cattle and/or deer herds economics of production because the ~~own~~ stock's personal ~~the~~ health, growth and development is recorded digitally, ~~the~~ allowing farmers to access their stock's details and keep track of the stock. By using NAIT tagging it ~~per~~ ultimately increases the ~~farm's~~ economics of production of the farm. This improves the quality of the farming ~~because~~ and economics of production because the farmer is able to pick up on problems that he may be doing wrong in his management practices and by ~~picking~~ picking up on them sooner he may be able to fix them ~~can~~ which may resolve them in time to ~~to~~ meet his growth and development targets ~~in~~ in time and fix any animal health problems by being able to monitor all of these ~~from~~ economic factors within the ~~stock~~ ~~effectively~~ stock more effectively, which results in a higher economic production for New Zealand's national cattle or deer herds. //

QUESTION THREE: VELVET PRODUCTION IN STAGS

Stag velvet is a low-volume, high-value product which must be handled with care, both on and off the animal. Velvet production is based on beam size, thickness, weight, and blood component. There are a number of management practices prior to the removal of the velvet that affect the growth and quality of velvet in stags.



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- (a) Explain two animal management practices that minimise potential damage to the velvet as it develops, and that ensure the quality of the product.

By removing objects that stags can rub their velvet against on and potentially damage the delicate velvet on such as trees ~~and other~~ large ~~objects~~ and other large objects, it will help ensure that the stags velvet doesn't get damaged from rubbing. When a stag's velvet grows it sometimes gets itchy and they like to rub it on trees and other large objects to scratch the itch in the velvet, by removing ~~the~~ features from the paddock that they may try rub their antlers on helps reduce the risk of velvet damage. Another management ~~was~~ practice to reduce the risk of damaging velvet is to lower ~~the frequency~~ the frequency that the stags are brought in for inspections and check ups. When the ~~male~~ head of stags are brought in and bunched up they can collide and bang their antlers which can damage them from colliding. By reducing the frequency of bringing the animals in it reduces ~~the risk of damaging the stag's velvet.~~

~~gloves
sterile gear
antiseptics and should be kept bleeding~~

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Velvet antler is harvested for human consumption. Timing of the removal of the velvet, safe removal practices, and hygienic handling during storage and freezing ensure a high-quality export product.

- (b) Justify these management practices by explaining how they promote a high-quality export product and good economic returns.

The timing of the removal of the velvet, safe removal practices, and hygienic handling during storage and freezing ensure a high-quality export product because the velvet is far less likely to contract any harmful bugs, bacteria or diseases if it is handled and exported in hygienic, clean and sterile condition.

The timing of the removal of the velvet is important because this affects the quality of which the velvet is because if the velvet isn't removed at the right time the quality of it won't be as great. Safe removal practices ensure that the people removing the velvet and the animals aren't harmed in any way during the process of the velvet removal. By following these management practices correctly and effectively it ensures a high-quality product for export which will reach high ~~for~~ market prices and provide good economic returns. If velvet was removed poorly and damaged the velvet won't reach as high of a price and if ~~it is~~ the ~~velvet~~ velvet was removed to soon the farmer won't have got all the velvet that the stag was capable of producing and if it was too late the quality of the velvet would be far lower and fetch a lower market price. If unsuitable equipment was used

(more on next page)

M5

Extra space if required.

Write the question number(s) if applicable.

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QUESTION
NUMBER

// In the removal of the velvet and in the storage, freezing and exporting of the velvet then will contract hazardous bacteria etc. and make that velvet worthless and lower New Zealand ~~the~~ velvet industries economic returns ~~and~~ and lower the velvet ~~industries~~ industries products. By ensuring that all these management practices are followed correctly and effectively it will ensure that New Zealand's velvet exports stay of high-quality and give a good economic return. //

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Annotations

Merit Exemplar 2016

Subject:	Agricultural and Horticultural Science	Standard:	91294	Total score:	15
Q	Grade score	Annotation			
1	5	<p>The candidate links sires that are chosen because they have been proven to produce lower birth weight and calving ease with increased growth rate.</p> <p>The candidate could have improved this response by linking food utilisation and energy intake to the improved growth rate.</p>			
2	5	<p>The candidate links the recording of livestock data using NAIT to the ability to monitor livestock growth rates.</p> <p>The candidate could have improved this response by explaining that this data can be used to adjust feed management or monitor food utilisation and energy intake.</p>			
3	5	<p>The candidate links removing environmental objects that cause damage to the velvet and reducing the handling of the deer to improving the quality or growth of the velvet.</p> <p>The candidate could have improved their response by explaining the importance of nutrition for improved velvet growth rate or quality.</p>			