

90921



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## Level 1 Agricultural and Horticultural Science, 2018

### 90921 Demonstrate knowledge of livestock management practices

9.30 a.m. Thursday 22 November 2018  
Credits: Five

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate knowledge of livestock management practices.	Demonstrate in-depth knowledge of livestock management practices.	Demonstrate comprehensive knowledge of livestock management practices.

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 2–12 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**

**10**

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## QUESTION ONE: DAIRY CATTLE

The majority of dairy cows in New Zealand are artificially inseminated (AI) by an AI technician.

- (a) Describe THREE actions that are performed when artificially inseminating dairy cows, and explain why each action is carried out in that way.

Action	Explanation
Collecting the selected cattle and putting them into a run //	The first obvious thing would be to herd <del>(in)</del> in the selected cows for artificial insemination and put them into a run. This run helps to secure the cow so its alot <del>(e)</del> easier to manage and carry out the task. //
Preparing the equipment. //	For a cow to be inserted with the artificial insemination it has to be done with the right equipment. Such as the special gun used to insert it. As well as generally making sure the <del>(e)</del> right insemination is being used. //
inserting the straw into the cow by a professional AI technician. //	It is important that this task is carried out by a AI technician reason being they have been trained to do this properly so there is low risk of things going wrong. They know exactly where and what to feel for when inserting the Artificial insemination. //

Bovine viral diarrhoea (BVD) is a highly infectious disease in New Zealand cattle that can cause reproductive losses, reduced growth rates, and lowered milk production. Cattle with BVD cannot be cured, but they can be vaccinated to prevent them getting it.

- (b) Describe what a vaccine is, and explain how it works to improve animal health.

A vaccine is a needle containing a liquid medicine (medicine <sup>[Type]</sup> depending on sickness) that is inserted into a animals ~~(e)~~ in this case a cow. It is inserted into the cows neck from here the vaccination is carried around the body through the blood to help prevent the animal from any sickness or ~~(e)~~ disease. //

In order to control bovine viral diarrhoea (BVD) in New Zealand, farmers vaccinate their cattle and cull any stock that are infected.

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- (c) Justify why vaccinating the herd and culling infected cattle prevents outbreaks and the spread of BVD.

In your answer, consider:

- short-term and long-term effects on herd health
- the effectiveness of controlling the disease
- overall farm production.

The reason vaccinating the herd and culling infected cattle prevents outbreaks of ~~BVD~~ BVD is because once a cow has this ~~disease~~ disease it can't be cured. When a cow has a disease like this it will affect the production rate, if the cow is sick it is unable to produce good healthy milk meaning ~~one~~ the more cattle with this sickness the less production the less production, the less money made. As for the cattle that don't have this disease it's highly important that they are vaccinated to help prevent them from getting this sickness. Although paying for vaccinations may be expensive the cows will remain strong and healthy ~~strong~~ which results in good production. So by vaccinating healthy cows and culling non healthy ones potentially the disease will be ~~gone~~ gone. Vaccinating the cows and calves means hopefully they will have a lifetime protection of these diseases. //

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

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**QUESTION TWO: SHEEP**

Sheep need to be crutched/dagged (removal of wool from around the tail and between the rear legs) regularly.

- (a) Explain how crutching/dagging improves sheep health.

The reason crutching/dagging sheep is important for their health is because if this wasn't done the sheep's fleeces would get caught in their wool making dags which is just the thing maggots and other ~~the~~ creature live for. If the sheep ends up having maggots it could seriously damage the sheep meaning less production. So it's good just to keep things nice and clean. //

Milk from sheep is a highly nutritious alternative to cow's milk. In New Zealand, milking sheep are farmed in a similar way to dairy cows and are milked twice a day.

**Sheep-milking platform**

Source: [www.stuff.co.nz/business/farming/sheep/9441640/Milking-ewes-for-all-their-worth](http://www.stuff.co.nz/business/farming/sheep/9441640/Milking-ewes-for-all-their-worth).

- (b) Describe the feed requirements of lactating ewes, and explain why they differ from maintenance feed.

So when a sheep is lactating it is important they are getting the right nutrients ~~and~~ to help their production. As well as being milked they could be feeding young so like I said it's important they can get the right nutrients. The feeding requirements for a sheep when lactating would be lots of ~~nutrients~~ good grass. They may also be given ~~the~~ hard feed //

In order to increase the quality and quantity of milking sheep in their flock, a farmer can either buy in rams to breed with their ewes or purchase more ewes.

(c) Justify why a farmer would buy rams to breed with, rather than purchase ewes.

In your answer, consider:

- genetic potential
- short-term and long-term effects on production
- costs and efficiency.

A farmer would buy a ram to breed with, rather than purchasing ewes for many reasons. First of all although it may be more expensive on the day in the future it will be not as expensive because he can use that same ram to breed for multiple years rather than buying ewes every time. The other reason would be by buying a ram he can select a certain type/breed that can pass on specific genetic material to the offspring meaning he can choose the type of offspring or breed for a certain characteristic. The long term effects would be the fact he has one or two rams that can be used for multiple times rather than buying ewes already grown and then buying more the following season.

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**QUESTION THREE: DEER**

Female deer can get pregnant only when they are in season or "on heat".

- (a) Describe what "on heat" means, and explain why deer can get pregnant only during this time.

On heat means its when they are able to get pregnant and they are willing for a stag to mount. The reason they can only get pregnant in this time is because its when the egg is released meaning it can be inseminated by the sperm of the stag. Where as any other time the deer is not on heat this cant happen. //

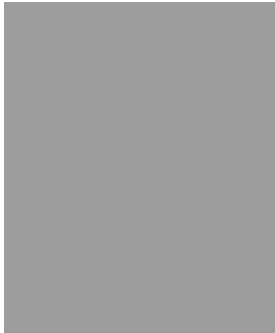
A farmer has decided to buy in grain and palm kernel expeller (PKE) to use as supplementary feed.

- (b) Explain why it is important that deer are gradually introduced to these feeds.

Its important to gradually introduce the feed to the deer because they are used to a particular diet (grass for eg) and if they are given this feed straight away their stomach may not be able to fully digest this feed resulting in some serious problems. So by introducing it slowly it gives them time to get used to the feed and adjust to it. //

Copper is an element essential for deer health, and often deer need more than they can get from their diet alone. In order to increase the amount of copper in a herd's diet, a farmer can either place a slow-release capsule down the throat into the rumen or mix a copper-rich solution into the water troughs.

Copper capsules



Source: <https://www.bayeranimal.co.nz/en/products/products-details.php?id=993>.

Deer at a water trough



Source: <https://www.rainmakerwildlife.com/drinkers/>.

- (c) Select the better method for ensuring that deer get enough copper in their diet. Justify your selection by comparing and contrasting it with the other management practice.

Selected management practice:

In your answer, consider:

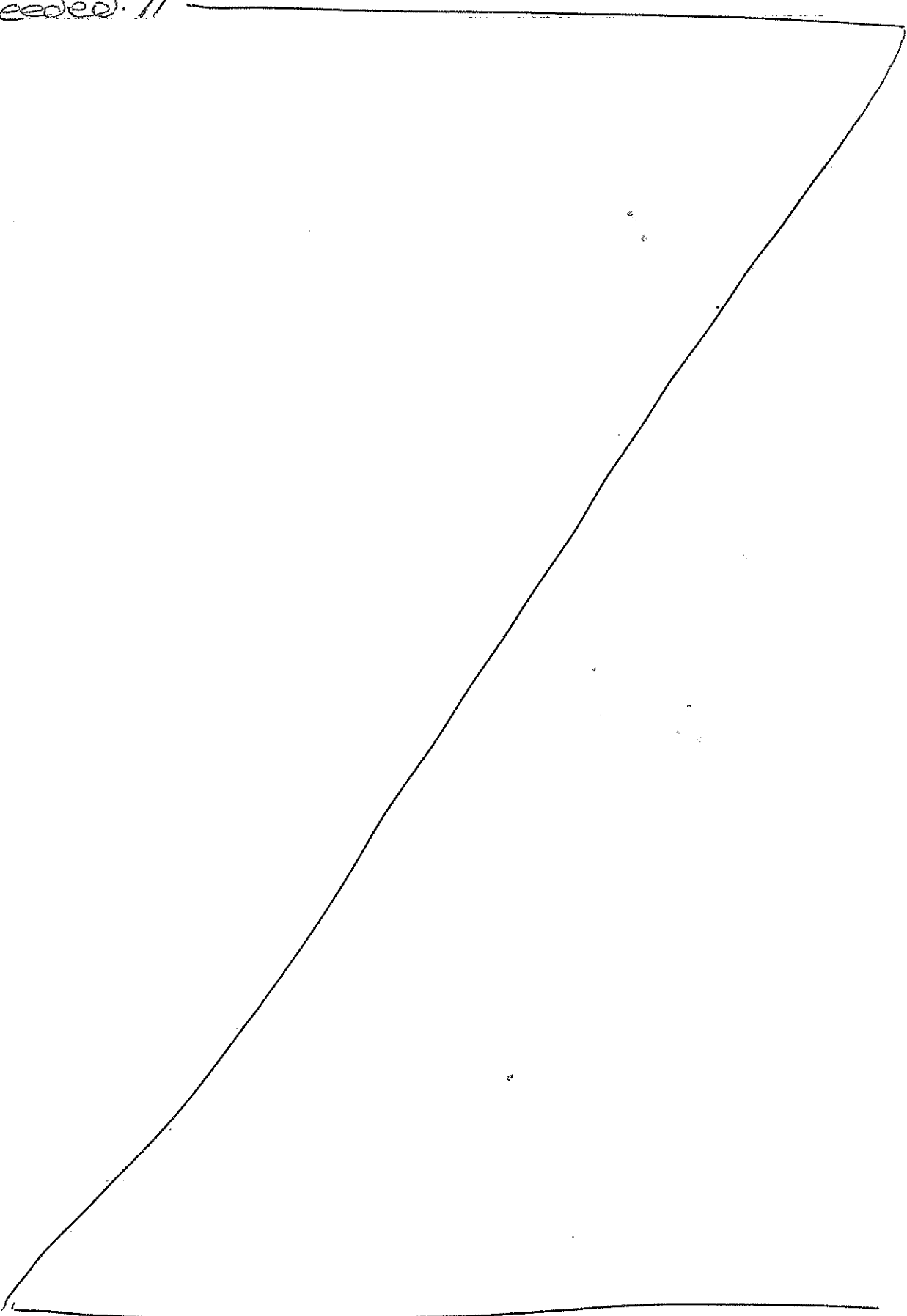
- effectiveness of each method
- labour and other costs
- long-term deer health.

~~Copper-rich solution in water troughs~~  
Copper capsules //

The reason I chose the capsule is because it gives you certainty that all deer have had the copper. Although this is a lot more time consuming than just putting in a trough you are able to make sure each deer has directly had the copper ~~intake~~ straight to the rumen. This way is also more likely to last a longer effect as it is directly inserted and its in a pure form where as comparing to the water trough its very ~~watered~~ <sup>diluted</sup> and we can not be sure that all deer are drinking this water that contains the copper //

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

and that they are getting the right amount needed. //



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## Achievement Exemplar 2018

Subject	Level 1 Agricultural and Horticultural Science		Standard	90921	Total score	10
Q	Grade score	Annotation				
1	A3	The candidate did not complete part A or B well. Understanding of actions performed and explanation when performing AI was not evident in detail. The understanding of a vaccination was very basic. There was no understanding shown by the candidate that it stimulates an immune response. Part C showed basic understanding of how culling and vaccinating can work together.				
2	A3	The candidate showed basic understanding that crutching can reduce flystrike, and the health impact of this. They also showed understanding of why a ram would be a better selection than a ewe, i.e. cost and traits. Broad understanding of ewe feed requirements was demonstrated.				
3	A4	The candidate was able to show a basic knowledge of practices over all parts of this question. There was limited knowledge shown of the ruminant and rumen function. The candidate gave a basic comparison between a capsule or solution in regards to the amount of copper received.				