

90921



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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Level 1 Agricultural and Horticultural Science, 2013

90921 Demonstrate knowledge of livestock management practices

9.30 am Tuesday 19 November 2013
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 2–8 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.

Excellence

TOTAL

23

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You are advised to spend 60 minutes answering the questions in this booklet.

QUESTION ONE: CATTLE HEALTH

Dairy cows in a milking shed

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Mastitis is a highly infectious bacterial infection that can occur in the udders of dairy cows. Describe the symptoms farmers are looking for when monitoring herds for mastitis infection.

When monitoring herds for mastitis infection you are usually looking for red and warm udder, may also come out like a red, hot rash. The milk will have flakey like particles in & also lumps and this is a large sign of mastitis. //

Use the table below to describe THREE actions that are taken by shed workers to prevent infected cows from passing the disease to other cows. For each of the actions taken, explain why that action is necessary.

Description of the action	Explanation of the action
Action (1) Cleaning / ^{washing} all cups / machinery used on that cow(s) //	This prevents the spreading of bugs and bacteria that may enter the teats of other cows in that herd.
Action (2) Cows) separated from rest of the herd. //	This prevents any irritation that the other cows may cause to that animal & means the bacteria won't be shared upon that herd. (★)
Action (3) Milk collected in a different container Cows) is given penicillin	Penicillin will close up the teats hole so that the bacteria is not spread & allow for the infection to heal. //

(★) This also allow them to be able to bring them in when necessary, not definitely the usual milking time. //

Farmers vaccinate their stock to prevent other diseases. There are two methods of vaccination:

- (1) The cow is vaccinated a few weeks before the end of pregnancy, or
- (2) Both cow and calf are vaccinated six weeks after calving.

Select the best vaccination method, and justify your selection by comparing and contrasting it to the other practice.

In your answer, you could consider:

- livestock health
- timing
- ease of vaccine delivery.

Selected vaccination method:

(1) The cow is vaccinated a few weeks before the end of pregnancy.

I believe this is the best time to vaccinate because the cows are settled animals and don't mind been brought into the yard, whereas when they have their calf they are a lot more anxiety due to been taken from them, and the calves become hard to handle (very small and not use to a routine). Second reason is you want your herd to be as healthy as possible when birthing occurs and same with the calf so your calf survival rate is high. If you vaccinate prior to birth both the cow and calves are receiving some of that particular vaccine, and this can allow the calves the best chance of immunity against bacteria / disease when first born. This is generally one of the most vulnerable stages of the calves life so is essential to be as healthy as possible.

The ease of vaccine delivery become rather distressful after birth because they have been separated from their calves & become anxious / motherly when near their calves. If done while pregnant this distress will not occur. Another reason why I believe 1 is the better option is the cows are starting to get into their regular programme, & this can disrupt that, affecting production. //

QUESTION TWO: FEED MANAGEMENT

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Sheep grazing in a paddock

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Source: right-around-we-go.blogspot.com

The feed requirements of sheep vary through different stages of production.

Describe THREE ways in which a ewe's feed requirements vary from mating through to lactation. Explain why the feed requirements vary.

Feed requirement of a sheep vary through different stages of production because the ewe's require different amounts from mating through to lactation.

Firstly when on heat and a ram is in the paddock with the mob the ewe & ram require a good / fair amount of leafy pasture this is because this is when the ewe to be receiving high amounts & be healthy for in peregoration.

Secondly when the ewe are pregnant they also still only want to be getting a fair ^(short) amount due to not wanting the lambs they are holding to get too big and make birth a difficult procedure (especially if on hill country where it is difficult to regularly check your stock). If carrying twins the amount may be smaller again due to birthing difficulties that could arise if too big (the lambs). And lastly a

large amount of pasture should be given after lambing as this is when both ewe & lamb are requiring large amounts of nutrients / energy to recover from birthing & the lamb to be able to grow big & strong to get the best chance in life / baby year. //

Non-ruminant animals, such as pigs, are often given supplementary feeds. Three types of feed are shown in Table 1 below.

Table 1 Feed analysis

Feed type	Fibre content	Palatability	Protein %	Digestibility	Dry matter %
Barley	high	low	13	low	89
Soybean meal	low	high	50	high	89
Canola meal	high	low	40	high	90

Use the table to select the best feed for weaned pigs. Justify your selection by comparing and contrasting it with the other feeds.

In your answer, you could consider:

- the effect on production
- the stage of development of the pig
- parts of the digestive system.

Selected feed type: ~~Soybean Meal~~ Canola meal.

Pigs are non-ruminant animals and I believe canola ~~soybean~~ meal is the best feed for weaned pigs. I believe this because canola meal has a high fibre content which allows the pigs to be receiving enough fibre in their diet. Whilst also requiring fibre they need a large amount of protein, this is what allows for growth & development at such a young age. This protein is what can benefit them when they are older, increasing muscle mass and a healthy body. This particular feed has a high digestibility and at a young age & after just been weaned this becomes quite important especially if you are wanting the feed to have an impact on the piglets. Dry matter is 89% & this is a fair percentage allowing the feed to last ~~at~~ a very good duration. You want a high digestibility rate due to the piglets being monogastric when means they only have the one stomach to do all the jobs, & one job of the stomach that is very important is getting the nutrients

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and fatty acids to that particular animal especially when young. //

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QUESTION THREE: DEER FARMING

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Grazing deer

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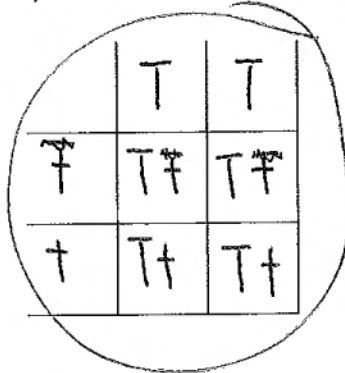
Source: www.flickr.com

Deer farm profits are influenced by successful breeding. Describe how a farmer would detect that a doe is "on heat".

A farmer can detect that a doe is on 'heat' when they may start to attempt to ride other doe's within that particular herd.

A gene controls the tenderness of venison meat.

Explain how identifying young deer with the tenderness gene (T) can improve the quality of production. You may use the Punnett square below to illustrate your answer.



A gene is a section of DNA that codes for a particular trait / characteristic. These are determined by proteins (A.T.C.C) & amino acids. In this case there is a code / gene for the tenderness of the venison meat. If you were to mate two hinds together and one carried the dominant (homozygous) gene (TT) and the other was recessive (tt) (heterozygous) then the offspring produced has a 100% chance of carrying the recessive tenderness gene (T). This is going to

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muchly improve offspring and give you a high production of tenderness venison meat. //

Breeders can either buy in stags from commercial breeders or use a stag they have bred themselves.

Justify why a deer breeder would buy stags from a specialist stud farm rather than use stags they have bred on their own farm.

In your answer, you could consider:

- aspects of genetics
- production outcome.

A deer breeder would rather buy stags from a specialist stud farm rather than use stags they have bred on their own farm due to genetic reasons. If your herd requires a certain characteristic / trait to be better / stronger or be completely newly brought in then you will need to read about particular stags and allow that specific trait to be bred into your herd for example stronger / better hoofs may be something your deer require & therefore buying a commercial stag that has this genetically strong feature will be a wise way of bringing ~~it~~ it into your genetics / ^{breeding} on your farm. This particular trait can allow for a large change in the production outcome, if that particular trait improves the tenderness of the venison meat then your herd will slowly become more valuable as the quality of the meat is increased, allowing for more financial income. Venison is at it's best stage between 1-2 yrs of age. However if you are to just use a stag you have bred your self this option of quality genetics becomes a harder and it may be impossible to bring in the different / better gene you are requiring, therefore you will decrease the value of your herd * decrease your // production income //