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NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

Level 1 Agricultural and Horticultural Science, 2014

90921 Demonstrate knowledge of livestock management practices

9.30 am Tuesday 11 November 2014
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 24

QUESTION ONE: SHEEP

Vaccinating is a management practice that is used to help maintain healthy sheep.

In the table below, describe THREE actions that are taken when vaccinating a sheep. Explain why each action should be carried out in the way you have described.

Description of the action	Reason for the action
Action (1) Make sure needles are clean & sharp. (sterile) Make sure equipment works correctly (correct dose) springs back etc	Less chance of infection with clean gear. Appropriate dose rates are given each time, so vacine is effective
Action (2) Weigh animals. Go by the weight of the heaviest animal in the mob/flock.	Correct dose should be given or vacine will not be effective.
Action (3) Have animals tight in the race (jammed up) as this will decrease chance of inj	This will decrease the chance of injury to animals or to you as you move through

Explain how vaccinating improves production.

Vaccinating improves production by eliminating the risk of stock falling ill with diseases eg (black leg). Without vaccination a farmer will/may loose animals each year to certain sicknesses or animals will just perform (grow) slowly. Sick animals have decreased production levels. Some die.
Vaccinating against these will improve production.

Facial eczema is a disease that affects sheep in warm, moist conditions from January to April.

Facial eczema on sheep

Source: http://www.teara.govt.nz/en/photograph/
19678/facial-eczema

Two management practices that can reduce the occurrence of facial eczema in sheep are:
- the selection of eczema-resistant rams for breeding
- treatment with zinc.

Select the better management practice to reduce facial eczema. Justify your choice by comparing and contrasting it to the other practice.

Selected management practice: the selection of eczema-resistant rams.

In your answer, you could consider both the short-term and long-term effects of the practice.

Treatment with zinc is an effective short term measure to combat facial eczema. However, it is expensive and will need to be done every year. I have chosen to select eczema-resistant rams. This is an effective long term measure. Using these rams over my breeding ewes will mean that their progeny will be resistant to facial eczema. I will keep these to breed from in the future. It might take a few years before all my sheep have the resistant gene. So in truth I (as well) would continue to use zinc in the short term as I would hate to see the sheep suffer with eczema. Using the resistant rams is deffinately the way to go to reduce facial eczema long term though. I'll start this year!

QUESTION TWO: DEER

NAIT (National Animal Identification Tracing) ear tags are an electronic tagging system that is required for beef cattle and deer.

NAIT tagging in deer

In the table below, describe the information tracked by the NAIT ear tag system, and explain how the farmer uses this information to improve production.

Information/data tracked by the NAIT ear tag	How the information improves production
Growth rates of each individual animal	Farmers can track growth rates according to season, or to a drenching regeime, or type of food. This helps choose the best way to raise deer.
Tracking of progeny of a breeding stag.	Farmers can follow the production, growth rates performance + health of a 'line' of stock from breeding stags. This helps with breeding selection & improves it.
Carcus information for each animal at slaughter time.	The weights and exact money earnt from each animal can be tracked. Letting farmer choose better feeding, breeding Programs.

Describe ONE other system that farmers have previously used to identify animals for tracking before NAIT became available.

The old ear tag method was used. However the electronically scanned NAIT tags (on farm, sales, works) are so much easier to use and to track. Means a lot less paper and trouble (less men/women to do the job).

Deer mate in autumn, and their fawns are born in late spring or early summer.

Supply and demand for deer pasture
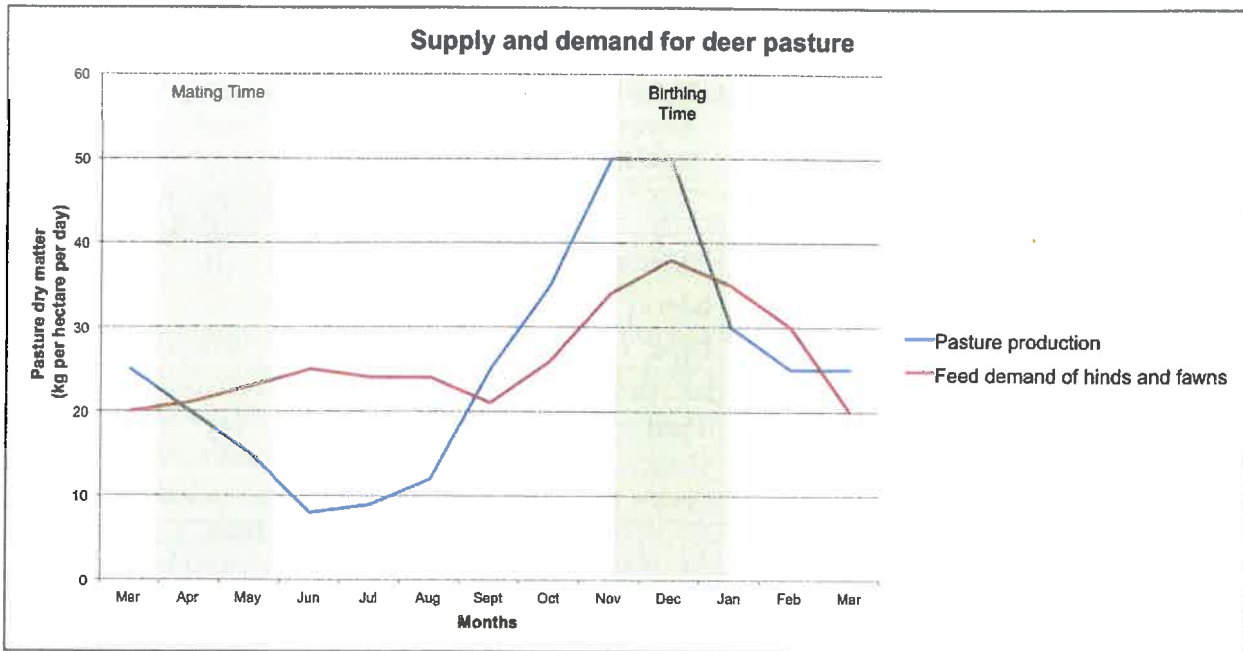
Using the information in the graph above, justify when and why a farmer would give deer supplementary feed.

In your answer, you could consider:

- the feed requirements of hinds throughout the year
- the nutritional value of supplementary feed.

In March deer hinds are on maintainance feeding. During mating time however hinds require a little more food and the pasture production has slowed (dropping to between 10-20% dry matter) So a hinds requirements are more than pasture production, this is when and why a farmer would start giving supplementary feed (ie grains) A supplimentry feed is high in energy - a concentrated food. More feed needs to be given during June, July & August as pasture production slows right down during winter, whereas the hinds needs are increasing with the fawns growing inside them.
The farmer will not need to feed suppliments during spring and early summer (Sept - early Dec) but will need to again as pastures dry out in late Summer as hinds are lactating (feeding fawns).

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QUESTION THREE: CATTLE

Artificial insemination is used on dairy farms.

In the table below, describe THREE steps that are taken during the artificial insemination process, and explain why each of these steps is carried out. Refer to parts of the female reproductive system in your answer.

Description of the step	Reason for the step *(To use for A·I)*
Step (1) Semen is collected from desired bull and stored	Semen is collected from bull using a warm rubber sieve type contraption. Sperm is tested for disease and stored. It can be used fresh but most is frozen in straws in liquid nitrogen. Blue friesian and pink jersey. Each straw is labled - identified
Step (2) Cows are monitored for ostrus (being on heat)	*Cows are held back at shed* A cow an only be inseminated if she is on heat. This means that an egg has been released from the ovary. A cow will only be on heat for 12 - 18 hours. (Standing heat)
Step (3) Cows are artificially inseminated	Using a pistolett the straw containing semin is inserted into the cows vagina - guided by a gloved hand (up anus) through cervex into uterus. Here the semen is released to fertiuse the waiting egg.

Describe the effect that internal parasites have on cattle. Refer to parts of the animal in your answer.

Internal parasites will cause harm to an animal. They live off the animal or the things it eats. Fluke worms *& damage.* for example will live in an animals liver causing lesions. Tape worms live in intestines, using animals energy needs. Cattle will 'lack luster', give less milk, have slower growth rates, may be anemic (pale skin/gums), their coat will not be glossy and they will have runny dung + smelly (well, a different smelly).

A farmer is breeding cattle for the beef meat market, and is looking to purchase a new bull to mate with the herd.

Statistics for the offspring of two different bulls

Sire	Birth weight (kg)	Post-weaning growth (kg/day)	Resistance to internal parasites	18-month weight (kg)
A	88	1.5	Low	720
B	92	1.3	High	650

Using the information in the table above, select the better sire (bull) to be mated with the cows, and justify your selection by comparing with the other bull.

Selected sire: A

A lower birth weight is important to me. Smaller calves means it is easier on the cows to give birth. Loosing just one cow can cost thousands. Bull B's calves are too big. I want them born small but after that I want the calves to grow quick! Bull A's calves grow faster per day than Bull B's.

Sadly Bull A's calves have low resistance to internal parasites. But I can combat this with drench, it'll be a bit more expensive than Bull B's progeny but I'll make up for it at slaughter time at around 18 months as Bull A's progeny are 70kg heavier than Bull B's.

This will make a big difference at the works and make up for drench costs. I can also get them off the place quicker leaving room for other animals.

That's why I'm going for Bull A.

E8

QUESTION
NUMBER

Extra space if required.
Write the question number(s) if applicable.

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Excellence exemplar for 90921 2014			Total score	24
Q	**Grade score**	**Annotation**		
1	E8	Three good descriptions given for vaccinating and two good reasons given. A good justification for the use of eczema-resistant rams given.		
2	E8	Good explanations given for the tracking. A good, concise explanation of graph given.		
3	E8	Good reasons given for the steps carried out when doing AI. Good justification for the use of Sire A. A very good argument made in a concise manner.		