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Mana Tohu Mātauranga o Aotearoa  
New Zealand Qualifications Authority

## Level 2 Agricultural and Horticultural Science 2023

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

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 2–12 in the correct order and that none of these pages is blank.

Do not write in any cross-hatched area (DO NOT WRITE). This area will be cut off when the booklet is marked.

**YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.**

Merit

TOTAL 17

**INSTRUCTIONS**

You are required to discuss **THREE** livestock species of **your choice**.

**BEFORE** choosing livestock, carefully read **ALL** the questions to ensure your selections will allow you to meet all the requirements.

### QUESTION ONE: Livestock development and feeding

Throughout their life stages, livestock require different types of feed as they grow and develop.

Select your livestock for this question. The livestock you select for this question must be different to those you select for questions Two and Three.

Livestock for Question One: cattle

- (a) How do the growth and development of your chosen livestock change from birth through to the harvest of products? Provide details of the main factors that drive these changes.

When a cow is first born they will first develop their bones and organs and then slowly develop their muscles. From birth to the harvest of products has different stages the first being when they have just been born and are developing their bones and organs so their first energy is needed to develop and grow so they drink their mother's milk until they have developed their organs and to a certain point where they don't need milk anymore and can consume grass and other types of feed. Once they have developed and grown their bones and organs, they then start to develop and grow their muscles and size. Once that is done they start to increase with their size with fat. But when it's time to harvest the product you need to find the best time in their growth where they have the right amount of fat on their body.

Please turn over ►



- (b) Evaluate how growers adapt their practices to match seasonal changes in feed supply to ensure growth and development are not compromised.

In your answer consider the impact on the economics of production and timing.

Farmers change cattle feed to match the seasonal changes, so that the animals get <sup>the same</sup> more energy. During winter farmers will feed cattle bails to ensure that the animals get more energy so that they continue to grow and aren't using all of their energy to stay warm and stop shivering, so farmers increase their feed which increases their energy so they can stay warm but also continue to grow and develop. And in summer farmers give cattle just grass and water just the right amount of feed so they can still grow and develop without over feeding the animals. During the different seasons the farmer will give the cattle different feed so the cattle can continue to grow and develop. In winter farmer also might break feed which restricts how much the cattle eat so that all the feed last all through winter.

**QUESTION TWO: Livestock health**

To ensure that livestock are able to reach their potential for growth and development, producers must carry out animal health practices throughout the life of the livestock.

Select your livestock for this question. The livestock you select for this question must be different to those you select for questions One and Three.

Livestock for Question Two: sheep

Select your health practice for your chosen livestock.

Health practice: Drenching

- (a) How does this animal health practice have a positive impact on the growth and development of your chosen livestock?

Drenching has a positive impact on growth and development because it gets rid of internal parasites which take the nutrients out of the food the animal eats. Internal parasites attach themselves to the animal's small intestines and eat all of the good nutrients out of the animal's food that it digests. Drenching can prevent these internal parasites from taking all of those nutrients by getting rid of them. ~~though~~ Because the internal parasites take all of the good nutrients the animal will not grow or develop because it hasn't got any energy from the nutrients. And internal parasites could make the animal feel sick and not want to eat. And if the animal has no energy it will move less to get food to eat so it won't develop or grow. So drenching has a positive impact on growth and development.



- (b) Evaluate the effectiveness of this health practice by explaining how the improvements in growth and development impact the quality of the products and the economics of production.

Drenching is a ~~effective~~ health practice because if you didn't drench your sheep would be small and skinny because they aren't growing and developing so, because the internal parasites are taking the all of the sheep's nutrients so it hasn't got any energy to grow and develop. When a sheep has been drenched it will start to grow and develop faster than a sheep ~~which~~ which hasn't been drenched, because the sheep which has been drenched is getting nutrients which helps it to grow and develop which impacts the quality of the product because it will go to get slaughtered fast in its life cycle and it ~~will~~ will have more meat/muscle and will have fat. The sheep that hasn't been drenched will take a longer time to get slaughtered as it hasn't grown any meat/muscle and fat so it would be a waste of money sending it to the get slaughtered because it hasn't ~~get~~ get any ~~meat~~ meat/muscle on it so it hasn't developed or grown to its full potential.

### QUESTION THREE: Breeding practices

The breeding practices chosen by livestock producers can have an important impact on the growth and development of the resulting offspring.

Select your livestock for this question. The livestock you select for this question must be different to those you select for questions One and Two.

Livestock for Question Three: Horse

Select a breeding practice for your chosen livestock.

Breeding practice: Artificial insemination

- (a) How does this breeding practice impact the growth and development of the offspring that result from this practice?

Artificial insemination in horses ~~can~~ impact the growth and development of the offspring. A farmer or breeder will use artificial insemination because they want to improve certain characteristics of the offspring. The horse that is being bred might be a Thoroughbred which are used for racing. The Thoroughbred horse is used for racing so they have to be fed well to help the horse develop its muscles ~~best~~ ~~been~~ because the horse has to carry a jock while sprinting the whole race. Artificial insemination is used to make the offspring have better characteristics than the mother so it will be faster and stronger.

Please turn over ➤



- In your answer discuss the impacts on the quality and quantity of livestock produced from these practices.



## Merit

**Subject:** Agricultural and Horticultural Science

**Standard:** 91294

**Total score:** 17

Q	Grade score	Marker commentary
One	M6	The candidate explained details of the body systems that develop through the livestock's lifecycle and articulated the change of feed with seasonal variations in some detail.
Two	M6	The candidate established a clear link between the actions of the parasites and the impact this has on growth and development.
Three	M5	The candidate explained what characteristics would be selected for artificial insemination with links to the growth and development of horses.