

No part of the candidate evidence in this exemplar material may be presented in an external assessment for the purpose of gaining credits towards an NCEA qualification.

2

91294



912940



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

SUPERVISOR'S USE ONLY

Level 2 Agricultural and Horticultural Science, 2018

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

9.30 a.m. Wednesday 28 November 2018
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.

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

Merit

TOTAL

14

ASSESSOR'S USE ONLY

This examination requires you to discuss THREE different livestock of your choice, such as sheep, salmon, cattle, deer, pigs, poultry, insects, horses, or alpacas. **Before** selecting your livestock, carefully read ALL the questions to ensure that your selection will allow you to meet ALL the requirements.

ASSESSOR'S
USE ONLY

QUESTION ONE: PRODUCTION MONITORING AND TIMING

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

Selected livestock: Cows

Feed utilisation in livestock can be monitored using practices such as weighing, measuring, or condition scoring. The results of this can be used by the farmer to make management decisions that have an effect on the growth and development of the livestock.

Measuring



Source: <https://caseagrants.ucsd.edu/sites/default/files/Coho%20Smolt.JPG>.

Condition scoring



Source: <https://www.agric.wa.gov.au/sites/gateway/files/Fat%20Cow.JPG>.

- (a) Describe how farmers monitor the growth and development of your chosen livestock.

Farmers will firstly weigh stock as they arrive and record the results. From here they will send the cows out to graze and bringing them in every ¹⁻² ~~1-2~~ months depending on when they are wanting to either sell or ~~sell~~ the stock. send the stock to the works to be processed for meat.

- (b) Explain how this management practice can be used to improve the growth and development of your livestock.

ASSESSOR'S
USE ONLY

This management practice is
very good for allowing the farmer to
follow the development of the cows.
It will allow ~~the~~ the farmer to gain
feedback on the cows performance as they
will record the results on a spreadsheet
that will allow the farmer to see either
an increase or decrease in weight.
Bringing the cows in for weighing also
allows the farmer an up close view of the
animals and whether any have any
injuries etc that he needs to address.

- (c) Justify the use of this management practice by discussing the economic impact and the effect on production timing.

Weighing is an ~~an~~ economically efficient
method as the farmer only needs scales
and a set of yards. The farmer may
record the results electronically. However
this is an ~~an~~ unnecessary
cost as the farmer will still be
able to work out average weekly
weight gains. The ~~know~~ knowledge of
weekly weight gains will allow the farmer
to know whether he is on track to
his projected "ideal" weight or.

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

Whether he may need to introduce supplements to help with the growth of the animals. //

Knowledge of the average weekly weight gains will also allow the farmer to plan when the animals will be leaving the farm and how much feed he may or may not have remaining. ~~and~~ Knowing how much feed the farmer will need is crucial as they will need to decide how many ~~and~~ winter and summer feed paddocks they ~~are~~ are needing to plant. They will also be able to know the right time to send the stock away before they become overweight and decrease in value which would cost the farmer ~~sub~~ economically as he would ~~to~~ have wasted feed on an animal too big to meet the demand of ~~the~~ consumers. //

A3

QUESTION TWO: BREEDING

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

Selected livestock: _____

~~Sheep~~ Deer

Selective breeding management practices are used to improve the characteristics of livestock, so that the product produced fully meets the demands of the buyer. For example, thoroughbred sires are chosen for traits that enable their offspring to run fast.

Racehorse



<https://www.nzracing.co.nz/OnHorseFiles/News%20Images/Burgundy.jpg>

Breeding bull



http://www.silverstreamcharolais.co.nz/wordpress/wp-content/uploads/2015/09/IMG_6181-e1448096026418.jpg

- (a) Describe how farmers/producers select the breeding stock for your chosen livestock.

Artificial Insemination, Farmers will be provided with the information of specific stags and be able to choose the desired traits for what they are wanting out of their deer.

- (b) Explain how farmers/producers use this selective breeding practice to improve the growth and development of your chosen livestock.

ASSESSOR'S
USE ONLY

Farmers would select ~~a animal~~
 A stag that has proven offspring
 that have achieved good growth
 and development. From here the farmers
 will know that this animal's genetics
 allow for good growth of
 offspring meaning the farmer
 will be able to get the best
 out of their stock. ~~a means~~
 This will mean the farmer deer
 will reach target weights quicker allowing
 the farmer a good source of ~~an~~ income.

- (c) Evaluate the effectiveness of this breeding programme by explaining how it would improve the quality and economics of production for your chosen livestock.

Artificial insemination is a very
 effective practice that allows the farmer
 to choose which ~~stag~~ ^{stag} they want to
 use to fertilise their hinds. This
 method allows the farmer the
 opportunity to see the traits of
 this animal and due to the
 nait system the farmer will
 be allowed to see the offspring
 the animal has produced. The
 farmer may choose traits such

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

As rapid growth or immunity to certain diseases. Rapid growth would mean the stock is on farm for less time meaning the animal is using less feed. This would mean better economic return as they are using less feed and reaching target weights sooner meaning a quick source of income for the farmer. Selecting a stag with an immunity trait would save the farmer thousands of dollars as they wouldn't have to drench or vaccinate as the ~~parent~~ offspring would also likely be immune. This would mean less money spent on the animal meaning larger profit margins for the farmer.

Over time the farmers deer may carry the desired traits he was after and may use ^{some} of the stags born as a result of the artificial insemination to service the herd. This would mean the farmer would have his desired traits without the cost of the artificial insemination process. He would now have ^{his own} ~~the~~ established breeding programme and this may eventually lead to some of his stags being used to artificially

QUESTION THREE: LIVESTOCK HEALTH

ASSESSOR'S
USE ONLY

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

Selected livestock: _____

Sheep

Ensuring that livestock receive necessary healthcare is important in order to maximise growth and development. For example, dairy goats need to have their feet trimmed frequently. This is partly due to our pastoral farms lacking the hard and stony ground of the environment they prefer.

Goat hoof-trimming



www.youtube.com.

Treatment of bees against mites



<http://scientificbeekeeping.com/the-learning-curve-part-3-the-natural-miticides/>.

- (a) Explain how a health management practice is carried out on your chosen livestock, and how it improves livestock growth and development.

// Sheep are regularly drenched on farms. This process involves drench being poured down the sheep throat via a drench gun. This drench will be a recommended dosage based on the average weight of the ~~am~~ animal. ~~but~~ ~~on~~ The recommended dosage is found on the drench container. The drench kills internal parasites which allows the animal to get maximum nutrients out of the food they digest ensuring good healthy growth //

- (b) Justify the use of this health management practice by discussing how it improves the quality, quantity, and economics of livestock production.

ASSESSOR'S
USE ONLY

Drenching kills internal parasites.
Internal parasites feed off the food the animal has swallowed in the gut. This means the animal is unable to get the maximum nutrients out of their feed which decreases the animal's growth. This means the animal takes longer to reach target weight and is consuming more feed. This means there is only small to no profit for the farmer as the animal is costly due to the ~~increased~~ decreased weight gain to feed ratio. This means less income for the farmer. //

Drenching ensures that the internal parasites are killed which allows the sheep to maximise the nutrient uptake from the feed they consume. This ensures that the sheep is able to maintain a steady weight gain every week ensuring maximum profit for the farmer meaning increased income. The animal will also be healthy meaning there is no energy being wasted on fighting diseases rather the energy will be used on breaking. //

M6

Extra space if required.

Write the question number(s) if applicable.

ASSESSOR'S
USE ONLYQUESTION
NUMBER

2 ② // inseminate other animals stock which would be a great source of income for the farmer. It will allow them to continue his breeding programme and also allow him to establish his stalls as stalls to fetch the best prices on the artificial insemination market. //

3 ③ // down breed ~~and~~ into protein etc used for their own growth and development. Animals that have been regularly drenched also fetch the best prices at market as consumers want good healthy stock. This will mean increased income for the farmer allowing them to get the best out of their animal. //

91294

Merit Exemplar 2018

Subject	Level 2 Agricultural and Horticultural Science		Standard	91294	Total score	14
Q	Grade score	Annotation				
1	A3	<p>The candidate describes how livestock measurement is carried out and what equipment is needed. They backed this up with an understanding of how the producer collects and stores the weight data over time to monitor changes in weight.</p> <p>The candidate could have improved their response by explaining that this would have enabled the producer to adjust the feed requirements of the lighter livestock to provide them with increased feed intake to increase their growth rate.</p>				
2	M5	<p>The candidate correctly describes that the farmer will use artificial insemination using a stag with proven offspring and links this to an increase in growth rate of the offspring.</p> <p>The candidate could have linked the better genetics of the offspring to an increase in feed utilisation and energy intake.</p>				
3	M6	<p>The candidate fully explains how the health management practice improves feed utilisation and improves available energy for growth.</p> <p>The candidate could have improved their response by explaining how the management practice improves the number of livestock that survive, e.g. the quantity of livestock produced.</p> <p>They could also have justified the costs involved with carrying out the practice and not just the income benefits.</p>				