

91294



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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

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SUPERVISOR'S USE ONLY

Level 2 Agricultural and Horticultural Science, 2015

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

2.00 p.m. Monday 23 November 2015
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 2–8 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.

TOTAL

ASSESSOR'S USE ONLY

QUESTION ONE: CALF REARING

When rearing calves, the farmer aims for the calves to gain liveweight quickly, and convert them from a milk diet to being able to consume pasture.

Calves feeding at a milk dispenser



- (a) Describe how ensuring calves get milk containing colostrum in their first six hours of life increases their growth and development.

- (b) Explain how providing calves with good-quality nutrition through their milk and feed, such as meal, increases their liveweight.

QUESTION THREE: SUPPLEMENTARY FEEDING FOR LIVESTOCK

In New Zealand, the majority of farms are pasture-based, with livestock being fed a supplementary crop during the winter months.

- (a) Explain how supplementary feed impacts on livestock growth and development during the winter months.

A farmer has decided to grow **fodder beet** instead of swedes or kale as their winter supplementary crop to feed to their beef cows.

Features	Fodder Beet	Swedes	Kale
Average yield (kg DM/ha)	18 000–22 000	10 000–12 000	10 000–12 000
Metabolisable energy (MJ/kg DM)	12	13	12
Disease tolerance	Very good	Variable	Very good
Insect tolerance	Very good	Moderate	Moderate
Cost to establish (\$/ha)	2 000–2 200	800–1 000	800–1 200

- (b) Using the table above, justify the decision to plant fodder beet to maintain or improve the beef cows' liveweight, and the impacts that this has on the quality of the cows and economics of production.

In your answer:

- describe how the farmer would use metabolisable energy and dry matter (DM) values to determine what energy requirements are needed for their beef cows
- explain how fodder beet could maintain or increase the beef cows' liveweight
- justify the decision to plant fodder beet by explaining how maintaining or increasing the beef cows' liveweight improves both the quality of the cows coming out of winter and the economics of production.
