

Assessment Schedule – 2025

Agricultural and Horticultural Science: Demonstrate understanding of how NZ commercial management practices influence livestock growth and development (91294)

Assessment Criteria

Achievement	Achievement with Merit	Achievement with Excellence
Describes how management practices influence growth and development in commercial livestock production in New Zealand.	Explains how management practices influence growth and development in commercial livestock production in New Zealand.	Evaluates how management practices influence growth and development in commercial livestock production in New Zealand. This may involve justifying, comparing and contrasting, or analysing the use of the techniques.

Evidence

Question ONE	Sample evidence	Achievement	Achievement with Merit	Achievement with Excellence
(a)	<p><i>Explain how the specific health issue impacts growth and development of your chosen livestock.</i></p> <p>Example: BVD in cattle</p> <ul style="list-style-type: none"> • Bovine viral diarrhoea has a significant impact on the growth and development of cattle due to the symptom of diarrhoea resulting in reduced nutrient absorption and dehydration, which results in weakness and reduced feed intake. • Cattle infected with BVD have a weakened immune system, meaning they use more energy to fight the virus through the production of white blood cells, antibodies, and inflammatory responses. This energy is therefore not used for the growth of the animal resulting in lower or loss weight gains. 	<p>Describes a specific health issue that impacts livestock growth and development.</p> <p>Basic facts are given.</p>	<p>Explains a specific health issue that impacts livestock growth and development.</p> <p>Specifics are given. Makes some links.</p>	
(b)	<p><i>Evaluate an effective management practice that could be used to prevent or control the chosen health issue in terms of quantity and economics of production.</i></p> <p>Example: Vaccinating for BVD</p> <ul style="list-style-type: none"> • Vaccinating is an effective way of preventing cattle from getting the BVD virus. • Vaccinating mature cattle once a year before mating to ensure that they are protected and have the antibodies to be passed onto their offspring, via colostrum, ensures calves are protected as well. • It is also best practice for calves to be vaccinated between 3 and 6 months old at weaning as well. Preventing cattle from getting BVD in the first instance ensures that potential growth gains are maintained throughout a calf's crucial time of growth. 	<p>Describes a management practice that could prevent or control the health issue.</p> <p>Basic facts are given.</p>	<p>Explains a management practice that could prevent or control the health issue.</p> <p>Provides an example to support answer.</p>	<p>Evaluates an effective management practice that could prevent or control the health issue.</p> <p>Provides example to support answer and links it to quantity and timing.</p>

<p><i>Quantity</i></p> <p>A decrease in growth rate results in a smaller overall carcass weight. The ideal carcass weight of cattle at slaughter is around 270–280 kg, which is achieved through a live weight of 500–540 kg. Cattle need a growth rate of around 750 g/day to achieve this when they are growing. Vaccinating to prevent disease ensures that cattle remain on track to reaching the desired weight. BVD can also result in reproductive loss and fertility issues which would decrease the overall quantity of livestock produced on farm.</p> <p><i>Economics of production</i></p> <p>The cost of BVD has been calculated at \$35–\$90/cow in infected herds due to the loss in production. Any loss in growth rates results in less economic gain by the farmer. The cost per dose to treat livestock against getting BVD is around \$4–5/dose, which becomes cost effective when animals remain productive and increasing growth gains.</p>		<p>Comprehensive answer given.</p>
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N1	N2	A3	A4	M5	M6	E7	E8
<p>Some writing but does not describe a prevention or control method.</p>	<p>Partial or insufficient description of a prevention or control method.</p>	<p>Explains a management practice that prevents or controls.</p>	<p>Explains a management practice that prevents or controls, with reference to growth and development.</p>	<p>Explains in detail a management practice that prevents or controls to enhance growth and development.</p> <p>OR</p> <p>Explains in detail how a specific health issue impacts growth and development.</p>	<p>Explains in detail a management practice that prevents or controls to enhance growth and development by linking to the effectiveness.</p> <p>AND</p> <p>Explains in detail how a specific health issue impacts growth and development.</p>	<p>Evaluates the effectiveness of a prevention or control method to enhance growth and development.</p> <p>Considers quantity or economics of production.</p>	<p>Evaluates the effectiveness of a prevention or control method to enhance growth and development.</p> <p>Considers quantity and economics of production.</p>

N0 = No response; no relevant evidence.

Question TWO	Sample evidence	Achievement	Achievement with Merit	Achievement with Excellence
(a)	<p><i>Explain how the management practice would reduce stress in your chosen livestock to benefit growth and development.</i></p> <p>Example: Shelter</p> <ul style="list-style-type: none"> • Providing shelter to sheep is done by providing a paddock with natural contouring of the land or hedge lines that shelter from exposure to environmental conditions as they must be able to maintain their body temperature within a 'comfort zone' or 'thermoneutral range', which for sheep sits between 5–25°C. • When sheep are not within this range, they use extra energy shivering or panting and this puts the animal under stress. This means less energy is allocated to growth of muscle. They may not reach their desired target weight if these conditions are prolonged. 	<p>Describes a management practice to reduce stress in livestock.</p> <p>Basic facts are given.</p>	<p>Explains a management practice that reduces stress in livestock.</p> <p>Specifics are given.</p> <p>Makes some links.</p>	
(b)	<p><i>Justify the effectiveness of the management practice to improve quality and economics of production.</i></p> <p>Using the natural contouring in a paddock is an effective way to shelter sheep.</p> <ul style="list-style-type: none"> • Sheep are often found in large, exposed paddocks. Allowing sheep to shelter from wind and rain behind a hill allows the sheep to better regulate their temperature compared to be exposed directly to the conditions. • When sheep are exposed to harsh weather conditions it can cause stress, which may lead to decreased feeding and lowered growth rates. <p><i>Quality</i></p> <ul style="list-style-type: none"> • Stress at slaughter impacts on meat quality. When a sheep becomes stressed, it causes an increase in lactic acid, which raises the pH of the meat. This results in the meat becoming darker and tougher (less tender). <p><i>Economics of production</i></p> <ul style="list-style-type: none"> • Natural contouring is a cost-effective way of ensuring shelter for sheep. It is naturally occurring so only involves the farmer monitoring weather conditions to ensure the sheep have access to the required slope aspect when harsh weather is expected. 	<p>Describes the effectiveness of a management practice in general terms.</p> <p>Basic facts are given.</p>	<p>Explains the effectiveness of a management practice with some evidence.</p> <p>Specifics are given.</p> <p>Makes some links.</p>	<p>Justifies the effectiveness of a management practice with reference to quality and economics of production.</p>

N1	N2	A3	A4	M5	M6	E7	E8
Some writing but does not describe a management practice.	Partial or insufficient description of a management practice.	Describes a management practice to reduce stress.	Describes a management practice to reduce stress, with reference to growth rates.	Explains a management practice to reduce stress to benefit growth and development.	Explains in detail a management practice to reduce stress to benefit growth and development.	Justifies the effectiveness of a management practice to reduce stress, with reference to quality or economics of production.	Justifies the effectiveness of a management practice to reduce stress, with reference to quality and economics of production.

N0 = No response; no relevant evidence.

Question THREE	Sample evidence	Achievement	Achievement with Merit	Achievement with Excellence
(a)	<p><i>Explain how farmers carry out the breeding management practice for growth and development of their livestock.</i></p> <p>Example: Chickens</p> <ul style="list-style-type: none"> Farmers would select a broiler breed, such as the Cobb, due to its fast growth rates, excellent feed conversion ratio (FCR) and high breast-meat yield. This has been achieved through crossbreeding for hybrid vigour in offspring. The farmer selects this breed from hatcheries and get the chicks as one-day-olds and grows them on to target weight. 	Describes how a management practice for breeding and indicates its impact on growth and development.	Explains a management practice with links to growth and development.	
(b)	<p><i>Evaluate the effectiveness of this management practice to increase quantity and the timing of production.</i></p> <ul style="list-style-type: none"> Selecting a breed such as a Cobb is a highly effective way of both increasing the quantity of meat and completing the growth phase in a very short time frame. Through improved genetics over time, farmers have achieved a breed that has very good feed conversion and growth rates to by getting the chicken to around 2–2.5 kg within 5–6 weeks. This rapid growth cycle allows for multiple flocks per year, increasing the total volume of chicken meat produced annually per farm. 	Describes the effectiveness of the management practice in general terms.	Explains the effectiveness of the management practice with some evidence.	Evaluates the effectiveness of the management practice to increase quantity and timing of production.

N1	N2	A3	A4	M5	M6	E7	E8
Some writing but does not describe a management practice for breeding.	Partial or insufficient description of management practice for breeding.	Describes a management practice for breeding.	Describes a management practice for breeding. References growth.	Explains a management practice for breeding. Makes links to growth.	Explains in detail a management practice for breeding. Makes links to growth.	Evaluates how effective the management practice is for improving growth and development. Considers quantity or timing.	Evaluates how effective the management practice is for improving growth and development. Considers quantity and timing.

N0 = No response; no relevant evidence.

Cut Scores

Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
0–6	7–12	13–18	19–24