

## Assessment Schedule – 2018

### Agricultural and Horticultural Science: Demonstrate understanding of how the production process meets market requirements for a New Zealand primary product(s) (91531)

#### Evidence Statement

Achievement	Achievement with Merit	Achievement with Excellence
“Demonstrate understanding” involves <b>explaining</b> how the production process meets specific market requirements for a New Zealand primary product(s).	“Demonstrate in-depth understanding” involves <b>explaining, in detail</b> , how the production process meets specific market requirements for a New Zealand primary product(s).	“Demonstrate comprehensive understanding” involves <b>using detailed explanations to justify</b> how the production process meets specific market requirements for a New Zealand primary product(s).

N1	N2	A3	A4	M5	M6	E7	E8
<p>A partial explanation of the effect of a relevant management practice that has an impact on the <b>market returns</b> from a product for ONE phase:</p> <ul style="list-style-type: none"> <li>• Establishment</li> <li>• Growth</li> <li>• Harvest.</li> </ul>	<p>An explanation of the effect of a relevant management practice that has an impact on the <b>market returns</b> from a product for ONE phase, with an <b>attempt</b> at another:</p> <ul style="list-style-type: none"> <li>• Establishment</li> <li>• Growth</li> <li>• Harvest.</li> </ul> <p><i>Note: Market returns are considered a market requirement.</i></p>	<p>An explanation of the effect of a relevant management practice that has an impact on the <b>market returns</b> from a product for TWO phases:</p> <ul style="list-style-type: none"> <li>• Establishment</li> <li>• Growth</li> <li>• Harvest</li> </ul> <p>but lacking detail / data for both phases.</p>	<p>Adequate explanation of the effect of a relevant management practice that has an impact on the <b>market returns</b> from a product for TWO phases:</p> <ul style="list-style-type: none"> <li>• Establishment</li> <li>• Growth</li> <li>• Harvest</li> </ul> <p>but lacking detail / data for both phases.</p>	<p>A sound and thorough (use of data <i>OR</i> well-linked) explanation of at least TWO of the three relevant management practices that have an impact on the <b>market returns</b> from a product for TWO different phases:</p> <ul style="list-style-type: none"> <li>• Establishment</li> <li>• Growth</li> <li>• Harvest.</li> </ul>	<p>A sound and thorough (use of data <i>AND</i> well-linked) explanation of THREE different relevant management practices that have an impact on the <b>market returns</b> from a product for TWO different phases:</p> <ul style="list-style-type: none"> <li>• Establishment</li> <li>• Growth</li> <li>• Harvest</li> </ul> <p>with <b>some explanation</b> for a <b>third</b> practice and / or period.</p>	<p>A sound and thorough (use of data <i>AND</i> well-linked) explanation of THREE different relevant management practices that have an impact on the <b>market returns</b> from a product for ALL THREE different phases:</p> <ul style="list-style-type: none"> <li>• Establishment</li> <li>• Growth</li> <li>• Harvest.</li> </ul> <p><i>AND</i></p> <p>Partial justification of a specific manipulation that has the greatest potential to increase <b>market returns</b> from a specified product, but lacking detail / data in some areas.</p> <p>ONE specific market requirement is discussed.</p>	<p>A sound and thorough (use of data <i>AND</i> well-linked) explanation of THREE different relevant management practices that have an impact on the <b>market returns</b> from a product for ALL THREE different phases:</p> <ul style="list-style-type: none"> <li>• Establishment</li> <li>• Growth</li> <li>• Harvest.</li> </ul> <p><i>AND</i></p> <p>Full and comprehensive justification of a specific manipulation that has the greatest potential to increase <b>market returns</b> for a specified product, with relevant detail / data. Market requirements are included in the analysis.</p>
<p><b>N0</b> = No response; no relevant evidence.</p>							

Part	Possible answers in abbreviated form														
A	<p data-bbox="219 225 913 252"><u>Lamb management practices for increasing market returns</u></p> <p data-bbox="219 292 2145 387">In breeding for optimum lamb growth, most genetic improvement comes from the selection of rams used. Some breeds will result in faster-growing, earlier-maturing lambs, while other breeds will be more suited to growing lambs that will achieve heavier carcass weights without the risk of becoming over-fat. Increases in carcass weight of up to 30% can be achieved by using specialist sires, etc.</p> <p data-bbox="219 427 573 454"><u>Heavy Lamb – Early Contract</u></p> <table data-bbox="230 467 1451 1050"> <tr> <td data-bbox="230 467 488 502">1. Age</td> <td data-bbox="499 467 797 502">New season's lamb only.</td> </tr> <tr> <td data-bbox="230 523 488 558">2. Price</td> <td data-bbox="499 523 987 558">\$5.90 per kg (<math>\\$5.90 \times 23.0 \text{ kg} = \\$135.70</math>).</td> </tr> <tr> <td data-bbox="230 592 488 627">3. Weight range</td> <td data-bbox="499 592 801 627">20–25 kg carcass weight.</td> </tr> <tr> <td data-bbox="230 660 488 695">4. Timing</td> <td data-bbox="499 660 719 695">December to May.</td> </tr> <tr> <td data-bbox="230 745 488 780">5. Numbers</td> <td data-bbox="499 745 994 841">Minimum 50 per line. Must be separate from others on that day. May be restrictions in any one month.</td> </tr> <tr> <td data-bbox="230 858 488 893">6. Grading</td> <td data-bbox="499 858 763 922">All grades acceptable. Maximum 5% fat.</td> </tr> <tr> <td data-bbox="230 987 488 1023">7. Penalties</td> <td data-bbox="499 987 1451 1051">10 cents per kg penalty for every 10% reduction in the number per line that meet all the conditions (including weight and contracted total).</td> </tr> </table> <p data-bbox="499 1086 1095 1114"><b>N.B. These penalties will be strictly adhered to.</b></p> <p data-bbox="219 1177 1057 1204">Source (adapted): <a href="http://bluesky.co.nz/Supply/Supplier/Heavy-Lamb-Contract-Conditions">http://bluesky.co.nz/Supply/Supplier/Heavy-Lamb-Contract-Conditions</a></p>	1. Age	New season's lamb only.	2. Price	\$5.90 per kg ( $\$5.90 \times 23.0 \text{ kg} = \$135.70$ ).	3. Weight range	20–25 kg carcass weight.	4. Timing	December to May.	5. Numbers	Minimum 50 per line. Must be separate from others on that day. May be restrictions in any one month.	6. Grading	All grades acceptable. Maximum 5% fat.	7. Penalties	10 cents per kg penalty for every 10% reduction in the number per line that meet all the conditions (including weight and contracted total).
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	<p><u>Feijoa management practices for increasing market returns</u></p> <p><i>Pruning</i></p> <p>Growers aim to achieve a compact, single-stemmed, multi-branched, round tree. Pruning may be required in many instances in order to achieve this, especially with certain cultivars or growing conditions. Most pruning is done in winter straight after harvesting, but a summer prune once flowering is finished will improve access at harvest and promote growth in the centre of the tree. Trees are limited to 2 m to allow for hand-harvesting without the need for ladders. Branch thinning is required in order to enhance pollination and light penetration, thus increasing the flowering on the centre, showing shoots, etc.</p> <p><u>Broiler chicken management practices for increasing market returns</u></p> <p><i>Feeding</i></p> <p>Regulating growth by feed can be done by adjusting feed quality in terms of nutritional value, the physical presentation of feed pellet v mash or the quantity the birds are allowed to eat. Cereals provide energy, and soybean meal, blood and bone meal, or fishmeal act as protein sources. Two amino acids, lysine and methionine, are added because they are deficient in these protein sources. The nature of the fat in the diet is monitored, otherwise fat deposits in the body can become more liquid than usual, producing “oily bird” syndrome. Protein sources are expensive, and in order to be cost-efficient, computerised programming of feed is essential. Some animal health products are also added, e.g. Coccidiostat is a chemical that suppresses protozoa, which cause an infection called coccidiosis. If this infection is left uncontrolled, the birds develop a bloody diarrhoea and can die. Coccidiostat should not be present in the meat, so growers stop feeding the chemical three days before slaughter. Pelleted feed ... etc.</p> <p><i>Temperature and ventilation</i></p> <p>Air temperature is critical to bird performance in the early stages of growth. Like most warm-blooded animals, chicks are sensitive to cold and infection, so for the first two weeks of life they are placed under heat lamps. Initially, the temperature should be 30°C, but after the heat lamps are turned off, the birds should be able to adjust to normal changes in temperature. The ideal temperature is 22°C. Chicks will huddle together and become stressed if cold, or spread out from the lamps if it is too hot. Both factors divert feed energy to temperature regulation rather than meat production, etc.</p> <p><b>Note:</b> A sound and thorough (use of data AND well-linked) explanation of THREE different relevant production processes that have an impact on the <b>market returns</b> from a product for THREE different phases: establishment, growth, and harvest.</p>
<p><b>B</b></p>	<p>ALL factors, including breed, stocking density, water management, temperature, ventilation, and feeding contribute to <b>market returns</b>, including costs, timing, and yield, as well as meeting the attributes desired by consumers of broiler chickens at harvest.</p> <p>However, the most important factor, I believe, is disease control – both for <b>market returns</b>, including costs, timing, and yield, and for <b>meeting the attributes</b> desired by consumers of broiler chickens. This is because, regardless of the environment in which the birds are grown (indoor, free-range), disease control influences both the growth rate and quality of meat for sale more than other factors. Without correct disease control, etc ... disease can spread quickly in a broiler environment. Diseased animals have no commercial value, etc.</p> <p>Even though temperature is a key factor in the first two weeks of life, chicks can still maintain good growth rates if they are healthy. Further, the health of the animal ensures that a quality, disease-free product is available for sale, etc.</p> <p>While ventilation ... (a <b>clearly written</b> comparative manipulation.)</p> <p>Therefore, I believe ... for the following reasons ... (production practice for increasing market returns.)</p> <p><b>Note:</b> Response should provide justification of a specific manipulation that has the greatest effect on <b>market returns</b>.</p>

**Cut Scores**

<b>Not Achieved</b>	<b>Achievement</b>	<b>Achievement with Merit</b>	<b>Achievement with Excellence</b>
0 – 2	3 – 4	5 – 6	7 – 8