

Assessment Schedule – 2014**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 explaining how the production process meets specific market requirements for a New Zealand primary product(s).	“Demonstrate in-depth understanding” involves explaining, in detail, how the production process meets specific market requirements for a New Zealand primary product(s).	“Demonstrate comprehensive understanding” involves using detailed explanations to justify how the production process used meets specific market requirements for a New Zealand primary product(s).

Question One: Timing requirements

N0	No response; no relevant evidence.
N1	Has no useful information about timing requirements; has a partial explanation of a management practice, but it is not linked to timing.
N2	Some information about timing requirements; a partial explanation of the effect of a management practice on timing.
A3	Timing requirement of the market is described in general terms; basic (poorly linked) explanation of the effect of a management practice on timing.
A4	Timing requirement of the market is described in detailed terms; adequate explanation of the effect of a management practice on timing.
M5	Timing requirement of the market is described, using specific details/data; sound and thorough (use of data <i>OR</i> well-linked) explanation of the effect of ONE management practice on timing.
M6	Timing requirement of the market is described, using specific details/data; sound and thorough (use of data <i>AND</i> well-linked) explanation of the effect of TWO management practices on timing.
E7	A partial justification of a specific manipulation, but lacking detail/data <i>OR</i> no comparative manipulation.
E8	A full and comprehensive justification of a specific manipulation, with relevant detail/data <i>OR</i> comparative manipulation.

Q1	Expected coverage
(a)	The timing requirement for the selected product is clearly described. The requirement may be market-driven (eg lamb for the UK Christmas market) or where the product is simply supplied when the producer chooses (eg coarse wool to auction).
(b)	<p>A sound and thorough (use of data <i>OR</i> well-linked) explanation of how a management practice results in the product meeting the described timing requirement.</p> <p><i>Example:</i></p> <p>Different feijoa varieties ripen at different times. Selection of early maturing varieties such as Unique, along with later maturing varieties like Apollo, within the same orchard allows growers to maximise duration of supply to the market, and supply for up to 3 months of the year (March–May for a Northland grower).</p>
(c)	<p>A complete and comprehensive justification of a specific manipulation of the management practice includes relevant detail / data <i>AND</i> why another management practice / manipulation is not as effective in meeting the timing requirements of the selected market.</p> <p><i>Example – Feijoas for the local NZ market:</i></p> <p>Selection of early maturing varieties such as Unique, along with later maturing varieties like Apollo, within the same orchard allows growers to maximise duration of supply to the market and maintain supply for the entire March–late May / early June period. A single variety often has fruit ready for harvest for just a 2–3 week window. Feijoas have a storage life of 4–6 weeks at best, and once picking is over, supply to the market will soon cease.</p> <p>While manipulations of the growing environment such as the use of shelter and pruning (to create a very open canopy to ensure maximum light penetration) can have a minor influence on when the fruit are ripe and ready to touch-pick, the reality is the grower has limited ability to extend the harvest season, and hence supply the local market for the full March–June period, apart from using a range of varieties.</p>

Question Two: Consistency and uniformity requirements

N0	No response; no relevant evidence.
N1	Minimal information about a specific consistency and uniformity requirement of the market; a basic (lacking detail) explanation of the effect of ONE management practice on consistency and uniformity.
N2	Relevant information about a specific consistency and uniformity requirement of the market; a basic (accurate, but limited detail) explanation of the effect of ONE management practice on consistency and uniformity.
A3	Consistency and uniformity requirement of the market is described in general terms; a basic (accurate, detailed) explanation of the effect of ONE management practice on consistency and uniformity.
A4	Consistency and uniformity requirement of the market is described in general terms; a basic (accurate, detailed) explanation of the effect of TWO management practices on consistency and uniformity.
M5	Consistency and uniformity requirement of the market is described, using specific detail / data; sound and thorough (use of data <i>OR</i> well-linked) explanation of the effect of ONE management practice on consistency and uniformity.
M6	Consistency and uniformity requirement of the market is explained, using specific detail / data; sound and thorough (use of data <i>OR</i> well-linked) explanation of the effect of TWO management practices on consistency and uniformity.
E7	A partial justification of a specific management practice, but lacking detail / data <i>OR</i> no comparative management practice.
E8	A full and comprehensive justification of a specific management practice, with relevant detail / data <i>OR</i> comparative management practice.

Q2	Expected coverage
(a)	<p>A consistency and uniformity requirement of the market is described in detail /using specific data.</p> <p><i>Examples – Coarse wool for carpet production:</i></p> <ul style="list-style-type: none"> • This typically has a fibre diameter of 30–38 μ to ensure that the wool fibres have the strength and durability that is required by carpet manufacturers. • Icebreaker – the minimum strength requirement for merino wool is 35 Nk / Tex. <p><i>Example for livestock</i></p> <ul style="list-style-type: none"> • Slaughter weights within the range 14–23 kg are required for spring lambs in 2014.
(b)	<p>The impact/ effect that each management practice has on the consistency and uniformity requirement is explained in detail.</p> <p><i>Example – Coarse wool for carpet production (choice of breed: Romney)</i></p> <p>A number of popular sheep breeds farmed in New Zealand produce wool suitable for carpet production. Breeds such as Romney have an advantage over other meat-focused breeds like Suffolk, and they produce wool within the required fibre diameter range for wool carpet production.</p> <p><i>Example: Merino wool</i></p> <p>Pre-lamb shearing of merinos ensures that any break caused after lambing is at the tips rather than centre of staple, so that farmers can meet the requirements of strength and maintain a 75 mm staple length for processing.</p>
(c)	<p>A complete and comprehensive justification of a specific manipulation of the management practice includes relevant detail / data <i>AND</i> why another management practice / manipulation is not as effective in meeting the consistency and uniformity requirement of the selected market.</p> <p><i>Example: Lamb weight</i></p> <p>A key consistency and uniformity measure by which farmers are paid and lambs graded is carcass weight. By feeding ewes and lambs high-quality / high-energy feed (11–12 MJME / kg DM) after lambing, lambs will be able to reach slaughter weight earlier than from the main supply, or achieve heavier weights: 18–20 kg vs 14–16 kg.</p> <p>This manipulation is more significant than the time of mating / tupping.</p> <p>Even heavier sheep breeds such as Texel and Suffolk require high levels of feeding if lambs are to reach weights that will allow early season premiums to be taken advantage of. While they can reach higher carcass weights than other breeds, this is still dependent on high levels of nutrition – not just lambing early in the season (ie July).</p>

Question Three: Quantity requirements

N0	No response; no relevant evidence.
N1	Has no useful information about quantity supplied to the market; includes a basic (lacking detail or poorly linked) explanation of the effect of ONE management practice on quantity.
N2	Some information about quantity supplied to the market is described in general terms; a basic (lacking detail or poorly linked) explanation of the effect of ONE management practice on quantity.
A3	Quantity supplied to the market is described in general terms; a basic (lacking detail or poorly linked) description of the effect of ONE management practice on quantity.
A4	Quantity supplied to the market is described in general terms; a basic (lacking detail or poorly linked) explanation of the effect of ONE management practice on quantity.
M5	Quantity supplied to the market is described, using specific detail/ data; sound and thorough (use of data <i>OR</i> well-linked) explanation of the effect of ONE management practice on quantity.
M6	Quantity supplied to the market is described, using specific detail/ data; sound and thorough (use of data <i>OR</i> well-linked) explanation of the effect of TWO management practices on quantity.
E7	A partial justification of a specific management practice, but lacking detail/ data <i>OR</i> no comparative management practice.
E8	A full and comprehensive justification of a specific manipulation, with relevant detail/ data <i>OR</i> comparative management practice.

Q3	Expected coverage
(a)	The quantity supplied to the selected market is described using specific detail /data /units.
(b)	<p>The impact /effect each management practice has on the quantity supplied to the market is explained in detail.</p> <p><i>Example: Lamb</i></p> <p>A management practice affecting the lambing percentage (and hence quantity of lamb produced) is flushing ewes for the 35 days leading into tugging. This involves giving the ewes increased levels of high-quality (12+ MJME / kg DM) feed, to gain bodyweight and raise their ovulation rates prior to the ram being put out. This raises the number of multiple births and the overall lambing by around 10% (typical response).</p>
(c)	<p>A complete and comprehensive justification of a specific manipulation of the management practice includes relevant detail /data <i>AND</i> why another management practice /manipulation is not as effective in maximising the quantity of produce that can be supplied to the market.</p> <p><i>Example: Potatoes – cultivar selection vs irrigation</i></p> <p>Growers choose cultivars based on a number of criteria, one of which is yield. However, the local fresh market requires potatoes that are between 6–12 cm diameter. Some cultivars tend to produce bigger /smaller tubers (eg Agria – large tubers, Cliffs Kidney – smaller tubers). This has a major impact on the final quantity supplied to the market, as only those tubers that meet this size requirement get bagged.</p> <p>Irrigation also has a significant impact on the size, and hence final quantity supplied to the local market. Potatoes require approx 450 mm rainfall during the bulking-up phase of growth if the majority of the tubers that have been set are to reach the required size. In a dry area or in a drought, most of this water will have to come from irrigation. In these situations, regular irrigation of the crop with 10–30 mm water every 3–4 days (depending on soil type, wind, temperatures, etc) will have a greater impact on the quantity supplied to the market than cultivar selection.</p>

Cut Scores

	Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
Score range	0 – 7	8 – 13	14 – 18	19 – 24