

## Sample Assessment Schedule – 2025

### Agricultural and Horticultural Science: Demonstrate understanding of environmental sustainability in primary production management practices (91931)

#### Assessment Criteria

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of environmental sustainability in primary production management practices.	Explain of environmental sustainability in primary production management practices.	Evaluate environmental sustainability in primary production management practices.

Question ONE	Sample evidence	Achievement	Achievement with Merit	Achievement with Excellence
(a)	<p>Frequent use of heavy machinery leads to soil compaction, which can reduce soil drainage and lead to waterlogging. Waterlogged soils have lower numbers of micro / macro-organisms, as it is harder for them to respire.</p> <p>Overuse of sprays can be toxic to soil organisms, decreasing the number that are in the soil and are available to breakdown organic matter.</p> <p>Over-cultivating can damage soil structure, which will increase topsoil erosion via wind / water run-off and cause a loss of soil fertility.</p>	<p>Names a relevant primary production system.</p> <p>Describes a management practice that has a negative impact on soil sustainability.</p>	<p>Explains how the management practice has a negative impact on soil sustainability.</p>	
(b)	<p>Biological control of pests and diseases is using a pest's natural predator, rather than chemical sprays to decrease pest numbers. This will improve soil sustainability by decreasing the risk of sprays entering soils and becoming toxic to micro / macro-organisms, allowing them to survive in the soil and recycle organic matter, improving soil fertility. An example is using cinnabar moth to decrease ragwort on farms.</p> <p>Use direct drilling or minimum tillage in place of traditional cultivation to maintain soil structure. Soil with a good structure can better maintain good levels of air and water. As a result, soil is less likely to erode with topsoil lost or compacted.</p>	<p>Describes a management practice that can be used to improve soil sustainability.</p>	<p>Explains how the management practice improves soil sustainability.</p>	

<p>(c)</p>	<p>Management practice: Direct Drilling</p> <p>Note: Candidates are recommended to write their answers in an essay / paragraph format for E7 / E8.</p> <p>Strengths:</p> <ul style="list-style-type: none"> <li>• Saves farmers spending money / time on traditional cultivation by providing an alternative method to sow / plant crops.</li> <li>• Soils with poor structure are more easily compacted / waterlogged.</li> </ul> <p>Weaknesses:</p> <ul style="list-style-type: none"> <li>• May increase need for chemical sprays (herbicides) which could have a negative impact on micro / macro-organisms over time.</li> </ul> <p>Short-term:</p> <ul style="list-style-type: none"> <li>• New knowledge may be needed by farmers around how to direct drill.</li> </ul> <p>Long-term:</p> <ul style="list-style-type: none"> <li>• Reduces damage to soil structure, which will have a flow on effect of reducing erosion of topsoil, helping farmers to maintain soil fertility over time.</li> </ul>	<p>Describes a strength and / or weakness of a management practice.</p> <p>Identifies the impact(s) of the management practice.</p>	<p>Explains strengths and weaknesses of a management practice, with reference to sustainability.</p> <p>Explains impacts of the management practice on soil sustainability.</p>	<p>Justifies why a producer should use the management practice to ensure soil sustainability by comparing strengths and weaknesses.</p> <p>Includes explanation of the short- and long-term consequences of the management practice on soil sustainability.</p> <p><b>Note:</b> For E7 / E8 candidates' responses should include an explanation of why the strengths of the management practice outweigh the weaknesses.</p>
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N1	N2	A3	A4	M5	M6	E7	E8
Shows minimal understanding of soil sustainability or any relevant Māori value.	Shows limited understanding of soil sustainability but no relevant Māori value.	Describes positive and negative impacts of management practices on soil sustainability.	Describes in detail positive and negative impacts of management practices on soil sustainability.	Explains in some detail how management practices positively and negatively affect soil sustainability, along with a relevant Māori value.	Thoroughly explains in detail how management practices positively and negatively impact soil sustainability, along with a relevant Māori value.	Justifies the use of a management practice used to positively affect soil sustainability with a relevant Māori value.	Justifies the use of a management practice used to positively and negatively affect soil sustainability with detailed reasons, along with a relevant Māori value.

**N0** = No response; no relevant evidence.

### Cut Scores

Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
0–xx	xx–xx	xx–xx	xx–24