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Draw a cross through the box (☒) if you have NOT written in this booklet

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Mana Tohu Mātauranga o Aotearoa  
New Zealand Qualifications Authority

# Level 1 Agricultural and Horticultural Science 2025

## 91930 Demonstrate understanding of how soil properties are managed in a primary production system

Credits: Five

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of how soil properties are managed in a primary production system.	Explain how soil properties are managed in a primary production system.	Evaluate how soil properties are managed in a primary production system.

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 2–12 in the correct order and that none of these pages is blank.

Do not write in the margins (// // // //). This area will be cut off when the booklet is marked.

**YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.**

**INSTRUCTIONS**

Read **ALL** instructions before answering.

You must answer **ALL** parts of this assessment.

Ensure reference to a **relevant** Māori concept or value, related to soil management, is included in your responses. One or more concepts may be appropriate.

**Note:** 'soil properties' refer to physical, chemical, and biological properties of soil.

**QUESTION ONE: Fertiliser application**

Name a primary production system of your choice.

Primary production system: \_\_\_\_\_

(a) How is fertiliser applied in your named primary production system?

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(b) Explain how fertiliser impacts soil properties.

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(c) Justify why soil tests should be carried out before applying fertiliser.

In your answer consider:

- chemical and biological soil properties
- how applying fertiliser after a soil test can improve plant growth.

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Ensure reference to a **relevant** Māori concept or value, related to soil management, is included in your responses. One or more concepts may be appropriate.

**Note:** 'soil properties' refer to physical, chemical, and biological properties of soil.

## QUESTION TWO: Compost

A vegetable grower has sandy soil and is using compost to improve their soil.

(a) Describe how compost is made.

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(b) How can adding compost increase nutrient levels in the soil?

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(c) Evaluate the application of compost, compared to irrigation and fertiliser application.

- the long-term effects on the soil
- vegetable growth.



Ensure reference to a **relevant** Māori concept or value, related to soil management, is included in your responses. One or more concepts may be appropriate.

**Note:** ‘soil properties’ refer to physical, chemical, and biological properties of soil.

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**Note:** ‘soil properties’ refer to physical, chemical, and biological properties of soil.

### QUESTION THREE: Soil structure and water

Name a primary production system.

Primary production system: \_\_\_\_\_

For your primary production system, choose a management practice from the list below that may help to improve drainage of the soil.

- Installing a drainage system
- Cultivation
- Application of lime
- Application of effluent
- Using a multi-species sward

Chosen management practice: \_\_\_\_\_

- (a) With reference to your chosen primary production system, describe how this management practice is carried out.



- (b) How does this management practice improve one physical and one biological property of soil?

**Physical property:** \_\_\_\_\_

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**Biological property:** \_\_\_\_\_

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Choose a second management practice from the list on page 8.

Second management practice: \_\_\_\_\_

- (c) For your chosen primary production system, which of your two management practices is more effective in improving soil structure and drainage?

Justify why the grower should use this management practice with reference to plant growth.



Extra space if required.  
Write the question number(s) if applicable.

QUESTION  
NUMBER

91930