

90919



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SUPERVISOR'S USE ONLY

## Level 1 Agricultural and Horticultural Science, 2019

### 90919 Demonstrate knowledge of soil management practices

9.30 a.m. Thursday 28 November 2019  
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate knowledge of soil management practices.	Demonstrate in-depth knowledge of soil management practices.	Demonstrate comprehensive knowledge of soil management practices.

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.

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

TOTAL

ASSESSOR'S USE ONLY

**QUESTION ONE: DAIRY FARMING**

Dairy farmers require high pasture growth rates and therefore the soil must have high fertility. This can be achieved by applying lime and effluent.



Cattle grazing

(a) Describe how lime is applied to a paddock.

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(b) Explain how lime affects soil pH and nutrient availability.

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**QUESTION TWO: SOIL TYPES**

- (a) Identify the particle and pore sizes of the soil types below, and explain how these affect the soil's water holding capacity.

Soil type	Particle size	Pore size	Effect on water holding capacity
Sand			
Silt loam			
Clay			

- (b) Describe how irrigation could be applied to a sandy soil, and explain how water affects the properties of soil.

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**QUESTION THREE: CROPPING**ASSESSOR'S  
USE ONLY

- (a) Describe what crop rotation is, and explain how it affects the biological properties of soil and plant growth.

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Both Seaweed and Blood and Bone can be used as an organic fertiliser. They also increase the organic matter in soil.



- (b) Explain how organic matter affects the biological and physical properties of soil, and how this improves plant growth.

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

QUESTION  
NUMBER


90919

**Acknowledgements**

Material from the following sources has been adapted for use in this examination:

**Page 2**  
Image: <https://www.dairyflo.co.nz/wp-content/uploads/2015/11/future-of-dairy.jpg>

**Page 8**  
Image: [https://images-na.ssl-images-amazon.com/images/I/81lcH0xTmQL.\\_SX425\\_.jpg](https://images-na.ssl-images-amazon.com/images/I/81lcH0xTmQL._SX425_.jpg)  
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