

- 5 The photograph below shows seed pods of a Canola plant (*Brassica napus*). Canola is a plant grown as a crop because the seeds are rich in oil. The extracted oil is used in cooking and as a sustainable fuel.



Magnification  $\times 0.1$

- (a) Suggest why the production of oil from Canola seeds can be described as **sustainable**.

(2)

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- (b) Farmers provide the plants with fertiliser containing nitrate ions.

Explain the importance of nitrate ions for the growth of plants.

(2)

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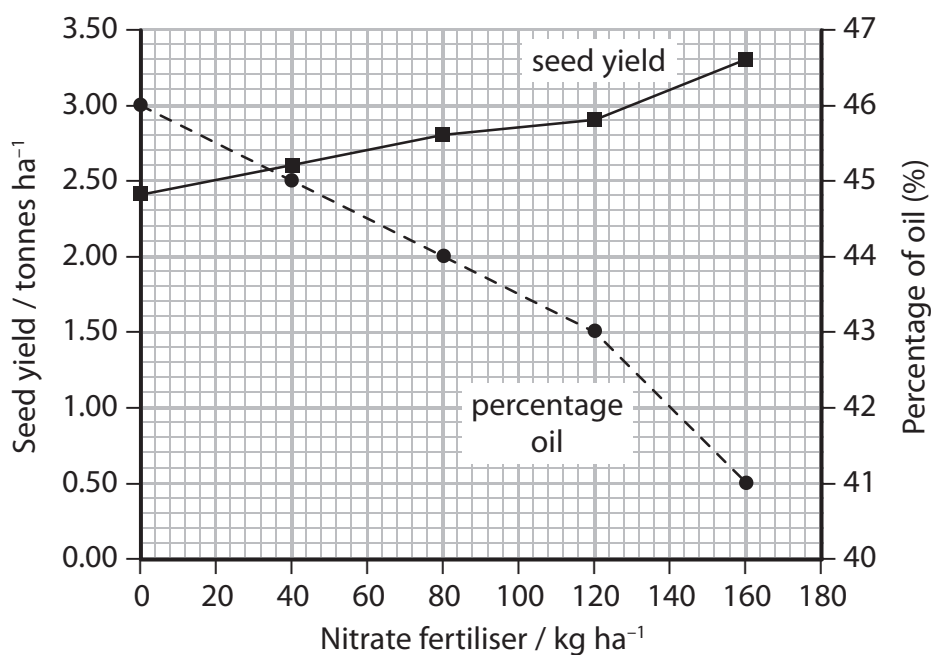
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(c) Scientists carried out an investigation into the effect of nitrate fertiliser on the yield.

The graph below shows the results of this investigation.



- (i) Place a cross ✕ in the box next to the correct word or words to complete the following statement.

The mass of nitrate fertiliser added and the percentage of oil produced show

(1)

- ☐ **A** a negative correlation
- ☐ **B** no relationship
- ☐ **C** a positive correlation
- ☐ **D** a proportional relationship



- (ii) Using information in the graph, calculate the percentage change in seed yield when the level of nitrate fertiliser is increased from 0 to 160 kg ha<sup>-1</sup>.

Show your working.

(3)

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- (iii) Suggest how the scientist could have ensured that this investigation was valid.

(4)

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(Total for Question 5 = 12 marks)

