

A Level Biology A
H420/02 Biological Diversity

Question Set 18

1 Plant cloning is often used by farmers to produce new plants.

A plant that is often cloned by taking cuttings is lavender, *Lavandula angustifolia*.

(a) A farmer had two fertiliser solutions, solution **A** and solution **B**, and wanted to investigate which one to use on lavender plants. In order to ensure the investigation would be valid, two cuttings were needed from the same parent plant.

(i) Describe how to clone a plant by taking a cutting. [4]

(ii)* The farmer grew one of the cuttings in soil fertilised with solution **A** and the other cutting in soil fertilised with solution **B**.

The farmer took several other precautions to increase the validity of the investigation, including:

- growing the plants in the same type of soil
- exposing the plants to the same light intensity.

After a set period of time the farmer measured the increase in height of the lavender plants. The farmer's results are shown in the table below.

| Fertiliser solution | Increase in height (cm) |
|---------------------|-------------------------|
| A | 20.3 |
| B | 15.4 |

The farmer concluded that solution **A** increased the height of lavender more. A student said that, even though the investigation was **valid**, the results did not give strong support to the farmer's conclusion.

Describe **and** explain how the investigation could be improved in order to have more confidence in any conclusions drawn from the results.

[6]

(b) Cloning plants is also known as vegetative propagation.

Identify **three** advantages of vegetative propagation in agriculture.

[3]

Total Marks for Question Set 18: 13

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