

Full Higher Separate content. ★ = Higher Tier. ◆ = Separate Science only.

Q1. Describe the process of selective breeding.

[3 marks]

Q2. Evaluate selective breeding as a method of improving crop yields. Consider both advantages and disadvantages.

[4 marks]

Total: 7 marks

Q1 (3 marks)

Describe the process of selective breeding.

- Select individuals from the population with the most desirable characteristics [1]
- Breed these together; select offspring with best characteristics [1]
- Repeat over many generations until the desired characteristic is reliably produced [1]

Q2 (4 marks)

Evaluate selective breeding as a method of improving crop yields. Consider both advantages...

- Advantage: can dramatically improve yield, disease resistance or nutritional content [1]
- Advantage: well-established technique, does not require advanced technology [1]
- Disadvantage: reduces genetic diversity — narrows the gene pool [1]
- Disadvantage: inbreeding risk — increased prevalence of recessive disorders; population vulnerable to new diseases/pests [1]