

Plant Disease Defences

GCSE Biology · Written to the shared content for AQA, Edexcel and OCR

Name _____ Class _____ Date _____

1. Worked example

Give four signs that a plant may be diseased. (4 marks)

Step 1 · Growth

Stunted growth.

Step 2 · Leaves

Spots on leaves; discolouration.

Step 3 · Tissues

Areas of decay (rotting); growths; malformed stems or leaves.

Step 4 · Pests

The presence of pests such

Answer: Any four: stunted growth, spots, decay, growths, malformation, discolouration, pests

Check: These are signs, not a diagnosis — the cause must then be identified.

2. Now try one with the steps

Explain why a plant short of magnesium ions has yellow leaves. (3 marks)

Step 1 · Use of magnesium

Step 2 · Effect

Step 3 · Consequence

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. Name a viral disease of plants. [1]

2. Name a fungal disease of plants. [1]

3. Name an insect pest of plants. [1]

4. Give one physical defence of plants. [1]

5. Give one mechanical adaptation that protects plants from animals. [1]

6. State the symptom of nitrate deficiency and explain it. [2]

7. Explain how aphids damage plants. [2]

8. Explain how a waxy cuticle helps protect a plant against pathogens. [1]

9. Of 400 roses, 56 have black spot. Calculate the percentage affected. [1]

10. An aphid population doubles every 4 days. Starting with 50 aphids, how many after 20 days? [2]

11. Explain why ladybirds can be used to control aphids. [2]

12. Explain why some plants produce poisons. [1]

13. Suggest why plants with a magnesium deficiency grow more slowly. [3]

14. Evaluate the use of chemical pesticides compared with biological control for aphids in a greenhouse. [4]

4. Before you hand it in

"Yellow leaves mean the plant has a fungal infection."

Yellowing (chlorosis) is often caused by magnesium deficiency. Identify the cause with tests or reference guides.

"Nitrate is needed for chlorophyll."

Nitrate → proteins (deficiency: stunted growth). Magnesium → chlorophyll (deficiency: chlorosis).

"Thorns are a chemical defence."

Thorns, hairs and drooping leaves are MECHANICAL adaptations; poisons and antibacterials are CHEMICAL.