

## 5.6 Pest Control Methods

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Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

Total: 9 marks

**KEY WORDS** pesticides 农药 • pesticide resistance 抗药性  
• integrated pest management 综合虫害管理 • crop rotation 轮作

### Objective

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Build the skills to answer exam questions on **pest control methods**.

**You must be able to:**

- describe chemical **pesticides** 农药 and their problems
- explain **pesticide resistance** 抗药性 and the “pesticide treadmill”
- describe biological control

### 1 Worked examples

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Study these first. Each one shows the method for a question type used later — follow the steps and you can do the Practice and Exam-style questions yourself.

#### ■ Chemical pesticides

**Pesticides** kill pests and raise yields, but they also **harm non-target species** (bees, birds), **pollute water**, and can **bioaccumulate** in food chains.

#### ■ Pesticide resistance

Using a pesticide **selects** for the few resistant pests, which survive and reproduce. Over time the pest population becomes **resistant**, so the pesticide stops working.

#### ■ The pesticide treadmill

As resistance grows, farmers apply **more** or **stronger** pesticides for the same effect — the “**pesticide treadmill**” — raising costs and pollution.

#### ■ Biological control

**Biological control** uses a pest’s natural **predators** or parasites instead of chemicals — targeted and less polluting, but must be managed to avoid introducing a new problem species.

## 2 Practice

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Now apply the methods above.

**2.1** State one problem caused by chemical pesticides. [1]

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**2.2** How does pesticide resistance develop? [1]

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**2.3** What is biological pest control? [1]

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## 3 Exam-style questions

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**3.1** Repeated pesticide use leads to resistance because it [1]

|   |   |
|---|---|
| A | B |
| C | D |

**A** kills all pests equally

**B** selects for pests that survive

**C** creates new genes

**D** helps predators

**3.2** A farmer sprays the same pesticide every year and finds it works less well over time.

(a) Explain why, using natural selection. [2]

(b) State one alternative to chemical pesticides. [1]

**3.3** Explain one advantage and one risk of biological pest control. [2]