

5.5 Irrigation Methods

Name: _____ Class: _____ Date: _____

Total: 10 marks**KEY WORDS** drip 滴灌 • salinization 盐碱化 • waterlogging 涝渍 • irrigation 灌溉

Objective

Build the skills to answer exam questions on **irrigation methods**.

You must be able to:

- compare **flood/furrow**, **spray**, and **drip** 滴灌 irrigation for efficiency
- explain **waterlogging** 涝渍 and **salinization** 盐碱化
- link method to water loss

1 Worked examples

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.

■ Irrigation methods

- **Flood/furrow** — floods the field; cheap but wasteful (much evaporation and runoff).
- **Spray (sprinkler)** — sprays water; moderate efficiency, some evaporation loss.
- **Drip** — delivers water slowly to roots; **most efficient**, least evaporation, but costly to install.

■ Waterlogging

Over-watering can saturate soil (**waterlogging**), starving roots of oxygen.

■ Salinization

As irrigation water evaporates, it leaves **salts** behind. Over time salts build up in the soil (**salinization**), reducing fertility — a major problem in dry regions.

■ A worked comparison

Drip irrigation delivers water straight to the roots with little evaporation, so it uses far less water than flooding a field.

2 Practice

Now apply the methods above.

2.1 Which irrigation method is the most water-efficient? [1]

2.2 What is salinization? [1]

2.3 What causes waterlogging? [1]

3 Exam-style questions

3.1 The most water-efficient irrigation method is [1]

A	B
C	D

- A** flood irrigation
- B** furrow irrigation
- C** drip irrigation
- D** spray irrigation

3.2 A dry-region farm uses flood irrigation for years.

(a) Explain how this leads to salinization. [2]

(b) Suggest a more efficient method and why. [2]

3.3 Explain why waterlogging harms crops. [2]