

## **8. Spinach Cultivation**

### **1. Introduction**

Spinach (*Spinacia oleracea*) is a leafy vegetable rich in vitamins and iron. It is a fast-growing crop, widely grown in India for its culinary and nutritional value.

### **2. Climate and Soil Requirements**

- Temperature: Prefers cool weather; grows best at 15–25°C.
- Rainfall: Requires moderate irrigation; too much rainfall can lead to diseases.
- Soil:
  - Well-drained sandy loam or loamy soil.
  - Soil pH: 6.0–7.5.

### **3. Seed Selection and Preparation**

- Varieties:
  - All Green: High-yielding and disease-resistant.
  - Pusa Bharti: Suitable for various climates.
- Seed Rate: 15–20 kg per hectare.
- Seed Treatment: Soak seeds in warm water for 12 hours before sowing to enhance germination.

### **4. Sowing Techniques**

- Time of Sowing:
  - Rabi: October–February.
  - Zaid: February–March.
- Method: Direct sowing in rows or broadcasting.
- Spacing: 20–30 cm between rows.

### **5. Fertilizer Management**

- Base Fertilizers:
  - Nitrogen (N): 50 kg/ha.
  - Phosphorus (P): 30 kg/ha.
  - Potassium (K): 20 kg/ha.
- Application: Apply all P and K at sowing and N in two split doses during growth.

## **6. Irrigation Management**

- Regular irrigation every 7–10 days is essential; avoid water stagnation to prevent root diseases.

## **7. Pest and Disease Management**

- Pests:
  - Leaf Miner: Spray Neem oil or Dimethoate (0.03%).
- Diseases:
  - Downy Mildew: Apply Copper oxychloride (0.25%).

## **8. Weed Control**

- Use mulching or manual weeding at 15–20 days after sowing.

## **9. Harvesting and Post-Harvest Management**

- Harvesting: Harvest leaves 25–30 days after sowing when fully grown but tender.
- Post-Harvest: Store leaves in cool, humid conditions to retain freshness.

## **10. Yield and Economics**

- Yield: 15–20 tons per hectare.
- Cost of Cultivation: ₹35,000–₹50,000 per hectare.
- Market Price: ₹10–₹30 per kg depending on the region.