

Carrot:

1. Climate & Soil Requirements

Climate

- Cool season crop; ideal temperature: **15–25°C**.
- High temperatures cause short, rough, and pale roots.

Soil

- **Deep, loose, sandy loam soil** is best.
- pH: **6.0–7.0**
- Avoid heavy clay soils → roots become malformed.

2. Field Preparation

Land Preparation

- Deep ploughing + 2–3 cultivations.
- Remove stones & hard clods → helps straight roots.
- Prepare **raised beds** or **ridges** 1 m wide.

Organic Matter

- Add **20–25 tons/acre** well-decomposed FYM (farmyard manure)
Do not use fresh manure → root forking occurs.

3. Seed Rate & Sowing

Seed Rate

- **2–2.5 kg/acre** (hybrid types may need 3 kg/acre).

Seed Treatment

- Fungicide:
 - Carbendazim or Captan **@ 2 g/kg seed**
- Bio-treatment:
 - Trichoderma **@ 4 g/kg seed**

Sowing Method

- **Direct sowing** in the field.

- Line spacing: **30 cm**
- Plant spacing: **5–7 cm**
- Sowing depth: **1–1.5 cm**

Season of Sowing

- **North India:** September–November
- **South/Coastal:** August–January

4. Manure & Fertilizer Requirement (per acre)

Basal Dose (before sowing)

- **N – 20 kg**
- **P₂O₅ – 24 kg**
- **K₂O – 20 kg**

Top Dressing

- Remaining **20 kg N** at **30–35 days** after sowing.

Micronutrients

- **Boron (Borax) – 4–5 kg/acre** → prevents cavity spot & cracking.
- **Zinc sulphate – 8–10 kg/acre** on deficient soils.

5. Irrigation Management

- Give **light irrigation immediately after sowing**.
- Next irrigation after **5–6 days** for germination.
- Later irrigation interval: **8–10 days** depending on soil.
- Avoid waterlogging → causes disease & deformed roots.
- **Drip irrigation** gives best uniformity.

6. Intercultural Operations

Thinning

- At **15–20 days** to maintain 5–7 cm spacing.

Weed Control

- Manual weeding at **20–25 days**.

- Herbicide option:
 - **Pendimethalin @ 1 L/acre** pre-emergence.

Earthing Up

- Light earthing up at **30–35 days** helps straight roots.

7. Pest & Disease Management

Major Pests

1. Carrot Fly / Root Fly

- Damage: larvae bore into roots.
- Control:**
- Soil drench with **Chlorpyrifos 2 ml/L** or
- Neem cake 100 kg/acre.

2. Aphids

- Suck sap; reduce growth.
- Control:**
- Imidacloprid 0.3 ml/L
- Neem oil 3 ml/L (organic option).

Major Diseases:

1. Alternaria Leaf Blight

- Symptoms: black spots, leaf drying.
- Control:**
- Mancozeb 2 g/L spray every 12 days.

2. Powdery Mildew

- White powder on leaves.
- Control:**
- Wettable Sulphur 2 g/L spray.

3. Root Knot Nematode

- Gall formation.
- Control:**
- Neem cake 100–150 kg/acre

- Solarization 30 days before sowing.

. Harvesting

Maturity

- Harvest **90–120 days** after sowing (variety dependent).
- Ideal root size: **16–20 cm**.

Harvesting Method

- Light irrigation before harvesting → easy pulling.
- Pull plants gently or use small digging tools.

9. Yield

- **200–250 quintal per acre** (improved varieties)
- Hybrids: **250–300 quintal per acre**