

GREENHOUSE CULTIVATION OF CUCUMBER-I

(23)

Climate:

- Ideal temp 25⁰ C to 35⁰ C.
- Temp less than 18⁰ C fruit tend to be shorter.
- A day/night temperature difference is recommended for winter and early spring cultivation only. Growth performance depends on the 24-hour mean temperature during the long days and short nights of spring/summer.

Hybrid:

- Cucumber grown in greenhouses are long, seedless hybrid cultivars, often referred to as “European” or “Dutch” cucumbers.

Growing medium:

- Sandy loam soil and well decomposed FYM mixed in 1:1 proportion, is best suited.
- In heavier soil mixing with sand up to 25% is required to provide proper aeration in root zone.

Growing beds:

- Soil should be fine tilth
- Beds may be flat or raised, bed width 60-100 cm, depending on distance between rows and depth of 25-30 cm
- Raised beds suitable for early planting
- Mostly seeds are sown directly
- Cucumber transplants may be grown on their own rootstock
- Add 43 kg of FYM per m² of bed for first crop and mix thoroughly
- For subsequent crops add 20 kg of FYM/m² of bed
- For disinfecting beds, drench it with 4% formaldehyde solution and cover with black polyethylene sheet(400 gauge)
- Close all ventilation space
- 3 to 4 days after spraying remove polyethylene sheet and rake the bed repeatedly to remove the trapped formaldehyde fumes completely before transplanting.

- Disinfecting done once in a year.

Fertiliser Application:

- NPK dose is 50:50:50 kg/ha respectively to the growing beds before fumigation
- CAN-20g/m², SSP-30g/m², MOP-9g/m²
- Apply neem cake and Trichoderma formulation(200g/m²) just before planting but only after formaldehyde fumes are completely exhausted.

Laying of drip line:

- Placing one inline drip lateral at the centre of bed.
- Inline drip lateral should have an emitting point for every 30 cm interval with discharge of 2lt/hour.
- Before covering the polyethylene mulch, check the emitting point for uniform discharge of water.

Mulching:

- Use 100 micron thickness, opaque polyethylene mulch film(black/reflective mulches) of 1.2 mt width to cover the planting bed.
- Make holes of 5 cm size on mulch film as per recommended spacing
- Water the planting bed to field capacity and then cover the planting beds with mulch by securing edges of sheet with pegs or burying in soil.
- Spacing of 1-1.5 mt between rows and 40-45 cm plant to plant.

Trellis and Pruning:

- Cucumbers are trellised using a string or wire system.
- Generally for long-fruit cultivars, only one fruit per leaf axial should be allowed to develop, although with vigorous cultivars more than one fruit may sometimes mature at a node.
- Short, medium types can support several fruits per node and give good yields, with a minimum of three to four fruits harvested at each node.

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Irrigation:

- Drip irrigation given daily to replenish 50% of open pan evaporation.

Fertigation:

- Plants are fertigated with total 250:70:400 kg of NPK respectively using water soluble fertilisers(19:19:19 WSF)
- Start fertigation from 3rd week after transplanting.
- Fertigate crop twice a week for 18 weeks.
- Use 19:19:19 WSF at the rate of 3.7 g/m² for every fertigation.

Harvesting:

- starts approximately 30–45 days after transplanting with variations according to cultivar, climatic conditions and technology used.
- Cucumbers are harvested as immature fruit when full length has been reached.
- Over-mature cucumbers left on the vine inhibit new fruit-set, and production decreases if fruits are left on the plant for a long time.
- Harvest should take place at the coolest time of day, in order to avoid excess heating of the product.
- To minimize damage and disease spread, it is important to use a sharp clean tool to cut the fruit from the plant.

Storage:

- The optimum storage temperature for cucumbers is 10–12.5 °C at a relative humidity of 95%.
- Storage or transit temperatures below this range may result in chilling injury after 2–3 days.

Diseases:

1. Downy mildew
 - Fungal disease
 - Yellow spot on upper surface of leaf
 - Avoid over-watering and spray Dithane M-45 @0.3%
2. Powdery mildew
 - Spray Karathane
3. Anthracnose

Insect-pest:

1. Whitefly
2. Thrips
3. Caterpillar