

# **In-Depth Guide on Sugarcane Cultivation**

## **1.Introduction**

Sugarcane (*Saccharum officinarum*) is a tropical cash crop grown primarily in Uttar Pradesh, Maharashtra, Karnataka, and Tamil Nadu. It is a major source of sugar, jaggery, and ethanol.

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

- Temperature: 20–38°C; requires warm weather for growth.
- Rainfall: 75–150 cm; supplementary irrigation needed in low-rainfall areas.
- Soil:
  - Fertile, well-drained loamy soils.
  - pH: 6.5–8.0.

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

- Varieties: Co 86032, Co 0238, BO 91.
- Seed Rate: 5–7 tons of seed cane per hectare.
- Seed Treatment: Treat with fungicides like Carbendazim (0.1%) to prevent seed-borne diseases.

## **4.Sowing Techniques**

Time of Sowing: October–March (autumn and spring seasons).

Methods: Trench or ridge and furrow planting.

Spacing: 90–120 cm between rows.

## **5.Fertilizer Management**

- Base Fertilizers:
  - Nitrogen (150–200 kg/ha), Phosphorus (60–80 kg/ha), Potassium (100–120 kg/ha).
- Application: Split doses of Nitrogen at planting, tillering, and early growth stages.

## **6.Irrigation Management**

- Critical Stages: Germination, tillering, and grand growth stages.
- Regular irrigation every 7–12 days, avoiding waterlogging.

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

- Pests:
  - Shoot Borer: Apply Chlorpyrifos (0.05%).
  - Termites: Use Chlorpyrifos during land preparation.
- Diseases:
  - Red Rot: Remove infected plants; use resistant varieties.
  - Smut: Treat seed cane with hot water (50°C) before planting.

## **8. Weed Control**

- Use pre-emergence herbicides like Atrazine (1.5 kg/ha).
- Manual weeding 30–60 days after sowing.

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

- Harvesting: When the sugar content peaks (10–12 months after planting).
- Post-Harvest: Process canes within 24 hours to minimize sugar losses.

## **10. Yield and Economics**

- Yield: 70–100 tons per hectare.
- Cost of Cultivation: ₹70,000–₹1,00,000 per hectare.
- Market Price: ₹3,000–₹4,000 per ton.