

Sugarcane Cultivation Guide

I. Introduction

Sugarcane (*Saccharum officinarum*) is a tropical and subtropical crop widely grown in India for sugar production and related industries. It requires a long growing season of 10-18 months and thrives in warm, humid conditions.

II. Growth Requirements

Requirement	Optimal Range	Notes
Temperature	25°C to 32°C	Frost-free growing season is essential
Rainfall	1500-2500 mm	Well-distributed rainfall or supplemented by irrigation
Soil pH	6.0 to 7.5	Well-drained, fertile loamy or sandy loam soils preferred

III. Recommended NPK Fertilization (kg/ha)

Nutrient	Recommended Dosage	Purpose
Nitrogen (N)	180-225	Promotes tillering and cane growth
Phosphorus (P)	60-80	Supports root development and early establishment
Potassium (K)	100-150	Crucial for cane weight, sugar content, and disease resistance

Micronutrients such as Zinc and Boron, and organic manures such as farmyard manure (FYM) are also recommended for better yield and soil health.

IV. Best Cultivation Practices

- **Land Preparation:** Deep ploughing, harrowing, and leveling to create a fine seedbed. Subsoiling is recommended for moisture retention.
- **Planting Methods:** Commonly flat planting or furrow method with setts planted end-to-end at 75-90 cm spacing. Optimum planting time varies by region:
 - North India: October-November (autumn) and February-March (spring)
 - South India: December-February
- **Irrigation:** Frequent shallow irrigation during early growth stages, reducing frequency with crop maturity. Critical stages include tillering and grand growth phases.
- **Weed Management:** Early and periodic inter-cultivation or herbicide use to reduce weed competition.
- **Ratoon Cropping:** Allows for multiple harvests from a single planting.

V. Common Diseases and Pest Management

Disease	Symptoms/Effects	Control Measures
Red Rot	Cane rot, wilting, red lesions	Resistant varieties, fungicides
Wilt	Yellowing and drying of leaves	Crop rotation, resistant varieties
Smut	Black whip-like growth on buds	Fungicide application, resistant varieties
Leaf Scald	White streaks on leaves	Removal of diseased leaves, fungicides
Pests (borers, aphids, whiteflies)	Leaf damage, reduced growth	Use of insecticides, IPM

VI. Types of Sugarcane in India

- **Co 0238 (Karan 4):** Early maturing, high yield, and good sugar recovery variety popular in North India.
- **Other Varieties:** Co 98014, Co 99004, and regional hybrids suited to various agro-climatic zones.

NPK Fertilization for Sugarcane

