



ORGANIC SUGARCANE



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Organic Sugarcane: An Introduction

Scientific name of Sugarcane is *Saccharum officinarum*. Sugarcane is a native to India. It is also grown in Brazil, Cuba, Pakistan, Thailand, Philippines, Argentina, Columbia, Indonesia and South Africa. Sugarcane is mainly used for the production of white sugar and jaggery. Molasses, a by-product of sugar production, is used in the production of alcohol

Growing Sugarcane: Climate and Soil

Sugarcane is a nutrient and water demanding crop. It is not suitable to high temperature zones. For optimal productivity, it requires 750-1200 mm of rainfall during its growth period. Well drained, alluvial to medium black cotton soils are best suited for sugarcane cultivation. Cultivation in sandy loam soils under irrigated conditions also have shown some results.

Growing Sugarcane: Varieties

Some of the recommended varieties for organic sugarcane production are:

- Co 8021
- Co 86032
- CoG 94077
- Co 86249



Field Preparation

Deep ploughing with disc plough followed by shallow ploughing 3-4 times using cultivar, is recommended. A minimum row spacing of 90 cm to maximum of 150 cm can be followed. Furrow must be prepared at 20-30 cm depth. Farm yard manure or compost must be applied at the rate of 80 t/ha before ploughing or planting.

Planting

Setts from 6-8 month old disease-free nursery crop has to be selected. Always go for organically grown crop if possible. Dip the setts in suspension of 2kg of azotobacter+2kg azospirillum+2kg PSB biofertilizer in 200 liters of beejamrut, for 30 minutes before planting. A spacing of 90 cm allows 75,000 setts to be planted in one hectare of land

Green Manuring

Green manure crops like sun hemp, dhaincha can be sown, 3-4 days after planting. The green crops have to be incorporated into the soil, 45 days after its sowing. Cowpea, coriander, green gram, groundnut, Bengal gram are commonly used as intercrops for sugarcane.

Crop Rotation

It is generally used in a 2-3 year crop rotation with cotton, paddy, sorghum, maize, potato, pea, wheat etc. Some of the most popular rotations are:

- Maize-potato-sugarcane
- Cotton-sugarcane-chickpea
- Rice-groundnut-sorghum-ragi-sugarcane
- Maize-wheat-sugarcane-sugarcane ratoon
- Rice-sugarcane-wheat



The cultivation of legume crops prior to sugarcane is proven beneficial to the sugarcane crop

Weed Management

A weed removal schedule of hand hoeing and weeding at 30, 60 and 90 days after planting is to be scheduled. Avoid chemical weed control practices.

Application of Biofertilizers

At 30 and 60 days after planting, apply 5 kg each of Azospirillum and Phosphobacteria respectively. Mix the biofertilizers with 500 kg/ha farmyard manure and apply to soil. Irrigation should follow immediately

Mulching

Mulching is an important practice in sugar cane cultivation. Dried and old leaves are to be removed at the 5th and 7th months of planting the crop. These leaves may be used for mulching. Mulching should be done in alternate furrows

Pest Management: Early Shoot Borer

Trash mulching, frequent irrigation, light earthing up at every 35th day will reduce the incidence of this pest. In case of severe occurrence, release 125 fertilized female *Sturmioopsis* parasite/ha at 45-60 days of planting. Release of *Trichogramma chilonis* (50,000/ha) 45 days after planting helps in controlling the pest.

Pest Management: Inter-Node Stem Borers

Major control measures are:

- Use of resistant varieties like CO 975, CO 7304, COJ 46
- Phyto-sanitation
- Collection and destruction of borer eggs
- Use of pheromone traps
- Release of *Trichogramma chilonis* (2.5 ml/ha) six times from the 4th month of planting at fortnightly interval
- Use of larval parasitoids *Stenobracon deesae*, *Xanthopimpla nursei*, *Apanteles flavipes*
- Release of pupal parasitoids *Tetrastichus ayyari*, *Trichopilus diatraeae*, *Xanthopimpla stemmato*

Common Pest Management Strategies for Organic Sugar Cane

The following methods have been found to be effectively against white flies, thrips, mealy bugs and mites:

- Spray 1:15 liters of milk-water solution, boiled and cooled
- Foliar spray of 5 days fermented whey (in copper vessel)
- Spray fermented cow urine (5 days old in copper vessel)

Disease Management: Red Rot

Major control measures for Red rot disease are:

- Selection of resistant varieties
- Sanitation of field and incineration of diseased clumps
- Block irrigation water from infested area reaching healthy areas
- Crop rotation with rice

Disease Management: Smut Disease

Major control measures for Smut disease are:

- Use of disease free stocks for setts
- Sanitation of field
- Use of resistant varieties

Disease Management: Grassy Shoot Disease

Major control measures for Grassy shoot disease are:

- Steam therapy of setts to 500C an hour
- Use of disease free source for setts

Harvesting and Yield

The harvest of the crop should be done when the sugar content reaches to 16% and juice purity more than 85%. The crop generally matures within a year of cropping. The canes have to be harvested 2-3 cm above the ground level. Topping should be done at the point of break.

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