Package of Practices (POP) Sugarcane Varieties Co 0238

Introduction:

Package of practices for the Co 0238 sugarcane variety Co 0238 is a high-yielding, high-sugar content sugarcane variety, developed for commercial cultivation in the North-West Zone of India, including Uttar Pradesh, Haryana, Punjab, Rajasthan, and Uttarakhand. It is an early-maturing variety with moderate resistance to red rot disease.

Land preparation

Soil and Climate: Co 0238 grows well in various soil types, from sandy loam to clay loam, with a well-drained profile at least 40–60 cm deep. ugarcane thrives in a hot, humid climate (21–27°C) with a long warm period for sucrose buildup and a cool, dry phase for ripening. It needs 75–150 cm annual rainfall; assured irrigation is essential in low-rainfall regions.

Tillage: Perform 3–4 deep ploughings followed by planking to achieve a fine, well-aerated soil structure.

Planting

Timing: Optimal planting times in North India are October (autumn planting) and February–March (spring planting).

Seed material: Use the upper, healthy portion of the cane for planting. Seed cane should be from a disease-free nursery.

Seed treatment:

Soak two- or three-budded setts in a 0.2% Carbendazim solution for 5–10 minutes to protect against seed-borne diseases like smut.

Alternatively, treat the setts with hot water at 52°C for two hours or moist hot air at 54°C for 2.5 hours with 95–99% humidity.

Treat with the bio-fertilizer Gluconacetobacter diazotrophicus (2 kg/ha) mixed in 250 liters of water just before planting.

Planting methods:

Trench method: This method offers a higher yield, especially in loamy soils. Trenches are dug 90–120 cm apart and 20–25 cm deep.

or

Flat planting method: A simpler, less expensive method suitable for low-rainfall areas. Furrows 8–10 cm deep are made 75–90 cm apart, and the setts are planted end-to-end.

or

Spacing and seed rate: Maintain a distance of 60 cm to 90 cm between rows, depending on the planting method. A typical seed rate is 50–60 quintals of cane setts per hectare, ensuring 10–12 buds per running meter.

or

Pest protection at planting: Immediately after placing setts in the furrow, apply an insecticide like Chlorpyriphos 20 EC (5 litres/ha) or Fipronil 0.3% GR (20 kg/ha) to control termites and shoot borers. Cover the setts with a shallow layer of soil.

Nutrient management

Fertilizer: Based on soil testing, apply 180–200 kg N, 60–80 kg P, and 40–60 kg K per hectare.

Basal dose: Apply the entire dose of phosphorus and potash, along with one-third of the nitrogen, at the time of planting.

Top dressing: Apply the remaining nitrogen in two equal splits during the tillering phase, ideally before June.

Bio-fertilizers: For soil application, use 10–12 kg/ha of bio-fertilizers such as Gluconacetobacter diazotrophicus or Phosphobacteria, applied in three splits at 30, 60, and 90 days after planting.

Irrigation

Irrigation schedule:

Germination phase (1–35 days): Irrigate every 7 days.

Tillering phase (36–100 days): Irrigate every 10 days.

Grand growth phase (101–270 days): Irrigate every 7 days.

Water-saving methods: In water-scarce areas, use alternate furrow irrigation, drip irrigation, or trash mulching.

Weed control

Pre-emergence: Within 3–4 days after planting, spray Atrazine @ 2.5 kg/ha to control weeds before they emerge.

Post-emergence: For broadleaf weeds, spray 2-4-D @ 2.5 kg/ha after emergence. Use hand weeding for grassy weeds.

Mulching: Spread a thick layer of dry sugarcane leaves (8–10 cm) between rows to conserve moisture and suppress weeds.

Pest and disease management

Major pests: Termites and shoot borers are common pests in the early stages.

Management: Apply Chlorpyriphos or Fipronil at planting. Remove and destroy affected plants (dead hearts) and egg masses.

Major diseases: Red rot, smut, and grassy shoot disease can affect Co 0238, though it has moderate resistance to red rot.

Management: Use disease-free seed, follow crop rotation, and rogue affected clumps. For red rot management, apply Trichoderma culture @ 10 kg/ha mixed with compost.
Harvesting and ratoon management

Maturity: Co 0238 is an early-maturing variety. Harvesting should be timed to maximize sugar recovery.

Harvesting: Cut the cane as close to the soil surface as possible for better ratoon management.
Timing: As an early-maturing variety, Co 0238 can be harvested in December for optimal sugar recovery.
Process: Harvest the canes 2–3 cm below ground level for the best yield and to prepare for the ratoon crop.

Yield:

Yield potential: Approximately 81 tonnes per hectare, though some farmers have seen yields as high as 125–150 t/ha.
Best suited for: The North-West Zone (NWZ) of India, which includes Haryana, Punjab, Western and Central Uttar Pradesh, Uttarakhand, and Rajasthan.
Key characteristics: High sugar content, high yield, and good tolerance to drought, waterlogging, and saline soil conditions. However, its susceptibility to Red Rot disease has increased over time, leading to a decline in its adoption in recent years.

Fair and remunerative price (FRP) of sugarcane

The FRP is the minimum price that sugar mills are legally required to pay sugarcane farmers. It is fixed by the central government based on recommendations from the Commission for Agricultural Costs and Prices (CACP).

2025–26 sugar season: The FRP for the 2025–26 season (starting October 2025) has been set at ₹355 per quintal, based on a sugar recovery rate of 10.25%.
A premium of ₹3.46 per quintal is provided for every 0.1% increase in recovery above 10.25%.
For mills with a recovery below 9.5%, the price is fixed at ₹329.05 per quintal, ensuring farmers a minimum price.

2024–25 sugar season: The FRP for the 2024–25 season was ₹340 per quintal at a basic recovery rate of 10.25%.

State Advised Price (SAP): Key sugarcane-producing states like Uttar Pradesh, Punjab, Haryana, and Uttarakhand often declare a higher State Advised Price (SAP), which is the rate mills in those states must pay. For the 2024–25 season, Uttar Pradesh's SAP was ₹370 per quintal for early varieties.

Ratoon management:

Stubble shaving: Shave the stubbles with sharp spades to a depth of 8–10 cm.

Gap filling: Fill any gaps within 30 days of stubble shaving using sprouted cane stubbles from the same field.

Fertilizer: Apply 25% more nitrogen than the plant crop dose after ratooning.

Tillage: Plough along the ridges to break up compacted soil.

Irrigation: Irrigate the field within 24 hours of harvesting the main crop to support ratoon growth.