

SUGARCANE

VARIETIES

A. EARLY MATURING : 83 A 30, 84 A 125, 85 A261, CO 8014, 81 A 99, 87 A 298, 86 V 96, 97 A 85, 2000 V 59, 91 V 83 2003 V 46, 93 A 145, 2001 A 63, 2000 A 213 AND 83 R 23.



93 A 145

B. MID-LATE MATURING : CO T 8201, CO A 7602, CO 7805, 83 V 15, 86 A 146, 88 A 162, 96 A 3, 2000 A 225, 98 A163 AND 99 A 5



CO A 7602

C. LATE MATURING: CO 8011, CO 7219, CO 7706, 87 A 380 AND CO R 8001.

D. MOISTURE STRESS: CO 6907, 84 A 125, 81 A 99, 83 A 30, 87 A 298, 83 R 23 CO T 8201, 90 A 272, 97 A 85, CO 7219 AND CO A 7602.



90 A 272

E. SWAMP CONDITIONS: 96 A 3, 99 A 5, 97 A 85, 2003V46, 84 A 125, CO 6907, CO T 8201, CO 7219, 85 A 261, 83 V 15, CO 7706, CO A 7602, 93 A 145 AND CO R 8001.

F. SALINE – ALKALINE SOILS: CO T 8201 , 81 A 99, 93 A 145, 97 A 85,99V30 AND CO 7219.

LAND PRERARATION:Soils to be worked to fine tilth to a depth of 20-25 cm. Open trenches of 30 cm width, 20 cm depth and 50 cm ridges have to be formed by manual labour or iron plough or ridgemar.

SEED RATE AND SETT TREATMENT

40,000 three budded setts per hectare. Dipping of setts in Carbendazim (0.05%) and Malathion (0.1%) for a period of 20 to 30 minutes to eliminate pineapple disease and scale insect.

Sett treatment of Imidacloprid (Gaucha) 600 FS @ 1ml/L for a period of 5 minutes (as against 20



to 30 minutes). Hot water treatment at 52° C for 30 minutes

Rainfed sugarcane

Soaking setts in 10% lime solution for a period of 60 minutes is beneficial for better seedling establishment and growth under limited irrigation sources.

Planting with cut off dates

Early varieties December – January

Mid varieties February

Late varieties March

MANURES AND FERTILIZERS INCLUDING BIO-FERTILIZERS, MICRO NUTRIENTS ETC;

Farm yard manure @ 25 tones per hectare or press mud cake @ 12 tones per hectare in the last ploughing.

Nitrogen (pocket application) has to be applied in two equal split doses at 45 and 90 days after planting.

For NC zone, 112 kg N/ha

For Godavari, Krishna zone 168 kg N/ha.

For Rayalaseema zone 224 kg N/ha

For Telangana zone 250 kg N/ha (Medak 112 kg/ha).

Phosphorous @ 100 kg P₂O₅ and Potassium @ 120 kg K₂O per hectare as basal application. Zinc sulphate (2 gm/lt) and Ferrous sulphate (10-20 gm/lt) as foliar spray at 45-60 days after planting where zinc and iron deficiencies are observed.

WEED MANAGEMENT AND INTER CULTIVATION

Application of Atrazine @ 5 kg/ha in 1125 lts of water to be sprayed on the third or fourth days after planting, depending on soil moisture. At 20 and 60 days of plantingspraying of 2,4-D (4 ½ kg) + Gramoxone (2.5 lts) in 1125 lts/ha is recommended.

At tillering stage of sugarcane (45 to 120 DAP) the spacing between two cane rows has to be ploughed either with cattle pair or with machine based on availability and spacing of the crop.

INTER CULTURE: Earthing up at about four months after planting, propping the crop by trash twist, twice or thrice, depending on crop growth.

IRRIGATION

Once in six days during summer and once in 15-21 days from November to harvest. During grand growth period, irrigation is to be provided when dry spell exceeds 15 days. Trash mulching has to be done three days after planting @ 3 t/ha. Sugarcane with drip irrigation improves cane yield to an extent of 20% and savings of irrigation water upto 25%.

Management of sugarcane under moisture stress:

- Protective skip furrow/alternate furrow irrigation
- 2.5% equal mixture of Urea and potassium spray during the stress period
- Appropriate post-stress crop management involving fertilizer application

INTER CROPPING

Sugarcane inter cropping particularly with pulses (black gram, green gram, soya bean, ground nut) bush bean, cucumber, cabbage and



cauliflower are highly remunerative to the farmer as an additional income from unit area.

HARVESTING

Crop has to be harvested at peak maturity depending upon variety, date of planting and juice quality.

POST HARVEST TECHNOLOGY

Sugarcane harvested in a field should be free from root material, soil etc., The immature top portion should be cut to the first visible top internode. Such dressed cane should be crushed within 24 hours (billet harvesting with in 12 hours of harvesting) either in a sugar factory or jaggery crusher to avoid loss in the weight of cane and recovery of end product.

MANAGEMENT FOR SUGARCANE RATOON:

STUBBLE SHAVING AND INTERCULTURE

Plant crop has to be harvested to the ground level or just below ground level. Stubble shaving has to be done with spades without disturbing the stools. The interspaces have to be ploughed to 12 to 15 cm depth to break the crust and improve aeration for better ratooning.

TRASH MULCHING

Trash mulching @ 3 t/ha at 3-5 days after ratooning ensures conservation of soil moisture and suppression of early shoot borer and weed growth.

MANURES AND FERTILIZERS INCLUDING BIO FERTILIZERS, MICRO NUTRIENTS ETC.,

224 kg N/ha has to be applied in two split doses at ratooning and 45 days later. P_2O_5 @ 100 kg / ha and K_2O @ 120 kg / ha are to be applied at the time of ratooning. If deficiency of iron is noticed Ferrous sulphate (2%) is to be sprayed on foliage immediately. Double dose of plant crop N to be applied in two splits half at immediately after stubble shaving and half at 45 days after ratoon initiation.

GAP FILLING

Gap filling has to be done with seedlings raised in polythene bags or in nursery from single budded setts within two weeks after ratooning.

WEED MANAGEMENT

Weeding and hoeing at 1st, 4th and 7th weeks after ratooning or spraying Atrazine @ 2.0 kg / acre immediately after ratooning followed by one hand weeding at 45 days after ratooning or metribuzin @ 600 g/acre in 450 lit. of water within three days after ratooning followed by one hand weeding at 45 days after ratooning.

HARVESTING

Ratooning crop matures earlier than plant crop. Therefore crop has to be harvested earlier than plant crop at peak maturity.

PESTS AND DISEASES OF SUGARCANE – MANAGEMENT

Early shoot borer:

- Planting of setts in deep furrows.
- Application of Phorate 10 G granules @ 15 kg/ha at the time of planting.

- Trash mulching @ 3 t/ha at 3 days after planting in plant crop and immediately after stubble shaving in ratoon crop. ● Irrigation at frequent intervals during summer.
- Spraying Endosulfan 0.07% or Chlorpyrifos 0.05% at 4, 6 and 9 weeks after planting in 450, 675 and 900 lts of water, respectively.
- Early ratooning in the months of November and December coupled with closer irrigations in the formative phase of the crop.
- Use of synthetic pheromones in water traps @ 5 /acre commencing from 35 days after ratooning.
- Field release of egg parasitoid, *Trichogramma chilonis* @ 50,000/ha at 30 days after ratooning and subsequent releases should be made at fortnightly intervals for four times.

Internode borer

- Control of early shoot borer in early stages of the crop growth.
- Detrashing of the crop with a view of destroying the larvae and pupae attached with the leaf sheaths.
- Removal of water shoots at eighth/ ninth months. Avoid high dose of nitrogen
- Draining off water in low-lying areas.
- Use of synthetic pheromones in water traps @ 5 /acre commencing from the internode formation stage of the crop.
- Field release of egg parasitoid, *Trichogramma chilonis* @ 50,000/ha at fortnightly intervals from 120 days after planting until a month before harvest.
- Spray endosulfan @ 0.07% twice at 15 days interval during June-July months.

Scale insect

- Dipping three budded setts in Malathion 0.1% or Dimethoate 0.05% for 15 minutes before planting.



- Detrashing the cane in the first weeks of July, August and September months followed by spraying with dimethoate 0.05% or malathion 0.15%.
- Dimethoate is preferred for spraying during heavy rains.
- Plant crop once met with heavy infestation should not be ratooned.

White fly

- Providing of adequate drainage facilities
- Heavy rainfall washes out the pest.



- Application of 'N' fertilisers at recommended dose at stipulated time.
- Ratooning is to be avoided in low lying areas prone for water logging.

- Spraying with endosulfan 0.07% or malathion 0.1% or chlorpyrifos 0.05% using foot sprayer with long lance.

Termites

- Systematic digging of termite mounds and destruction of queens. Application of lindane dust @ 200g/ mound followed by proper levelling.
- Application of Lindane 1.2% Dust in the furrows @ 25 kg/ha.
- On standing crop, spray chlorpyrifos 20 EC @ 5ml/lit. on internodes.

Woolly aphid

- Harvesting of affected matured crop on priority basis.
- Avoidance of transportation of infested leaves.



- Avoidance of ratooning, if the plant crop is heavily infested with woolly aphid.
- Adoption of paired/wider row planting.
- Removal and burning of affected leaves.
- Wrapping and propping of canes.
- Judicious use of nitrogenous fertilisers and irrigation water.
- Providing proper drainage.
- Collection and release of predators like *Chrysoperla carnea* @ 5000-7500 eggs/ha Syrphid fly, Brown lace wing, *Micromus timidis* (Ord.Neuroptera) and *Dipha*

aphidivora (Ord. Lepidoptera) in infested patches.

- Monitoring of the pest through yellow traps
- Thorough spraying with malathion 50 EC @ 2ml/lit. or endosulfan 35 EC @ 2ml/lit or monocrotophos @ 1.6 ml/lit or dimethoate 30 EC @ 1.7ml/lit or chlorpyrifos 20EC @ 2.5 ml/lit or methyl demeton @ 2ml/lit. or Acephate @ 1g/lit.

Root grub

- Damage due to root grub appears to be severe in light soils.
- Application of phorate 10 G granules @ 15 kg/ha to soil at planting reduces the damage.
- In standing crop, flooding of fields for 2-3 days is effective in reducing the severity.

DISEASES

Smut

- Systematic eradication of smutted clumps.
- Avoidance of second ratoon if incidence is severe.
- Treating three budded setts in hot water at 52° C for 30 minutes or aerated steam at 51° C for two hours followed by dipping setts in



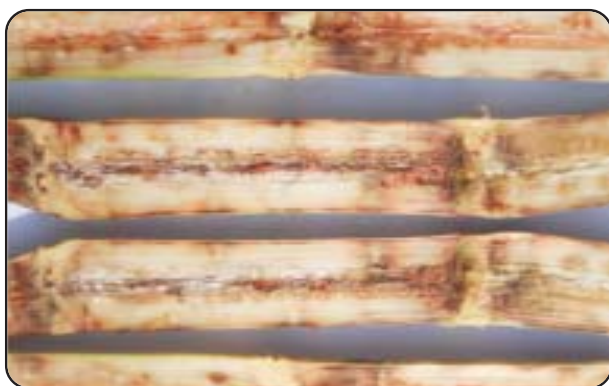
Carbendazim and raise special seed nurseries.-

Selecting seed material from disease free areas atleast 40 mt away from affected fields. Sett treatment with propiconazole (1 ml/lt) for 15 minutes before planting in susceptible varieties

- Spray propiconazole (0.5 ml/lt) twice, one at 35 days after ratooning and 30 days later if infection persists.

Red rot

- Selection of healthy seed material from disease free localities.
- Systematic eradication of affected clumps.
- Uproot and destroy un-germinated setts of plant crop and un-sprouted clumps of ratoon crop
- Affected plant crop should not be ratooned.-
Proper drainage should be maintained to avoid stagnation.
- After harvesting affected plots, all stubbles and debris should be burnt and further cane



planting should not be taken up to four months.

- Diseased canes are to be harvested as early as possible and crop residues should be burnt.
- Keep the crop erect without lodging by

propping with bamboos or trash twist propping.

- Growing resistant varieties like Co 7706, Co A 7602, Co 8021,97 A 85, Co T 8201, Co R 8001, 85 A 261, 83 A 30, 87 A 298, 86 V 96, 83 V 15, 83 R 23, 90 A 272 and Co 7219.

Grassy shoot disease

- Uproot and destroy affected clumps.
- Severely affected plots should not be ratooned.
- Select seed material from disease free plots.



- Treat setts in hot water at 52° C for 30 minutes of aerated steam at 50° C for one hour and raise special seed nursery.
- Spray malathion (2 ml/ lt) or dimethoate (2 ml/lt) to check vector population.

Pineapple disease:-

- The disease can be avoided by dipping the setts in 0.05 percent solution of carbendazim (150 g of carbendazim in 300 litres of water for 40,000 three budded setts sufficient to plant in one hectare).

- Fungicidal sett drip treatment is essential for heat treated setts

Yellow Leaf Disease (YLD)-

- A new emerging disease causing major damage to cane yield and recovery.
- Mid rib yellowing and drying of leaves (tip downwards) are the conspicuous symptoms.
- The disease can be avoided by using healthy seed material, vector control, crop rotation and adopting good recommended agronomic management practices.

Wilt:-

- Frequent irrigations during summer-
Avoid water logging
- Use of disease free seed material
- Effective control of diseases and pests-
Application of recommended dose of nitrogen

Top rot:-

- Two sprays of mancozeb (3 g/lit) at 2-3 weeks interval

Ring spot:-

Spray either carbendazim (0.1 5) or mancozeb (0.3 %) or copper oxychloride (0.04 %) twice or thrice at three weeks interval starting from the first appearance of disease.



Rust:-

Spray tridemorph 1 ml / lt. or mancozeb 3 g/ lt. bi-weekly intervals.

