

## Frequently Asked Questions (FAQs) by the farmers and others on Sugarcane

### 1. Varieties and Seed Material

- Q What are recommended sugarcane varieties under different maturity groups?
- A Early Maturing - CoS 8436, CoS 88230, CoS 95255, CoS 96258, CoS 96268, CoSe95436
- Mid – late Maturing - CoS 8432, CoS 94257, CoS 95222, CoPant 84212, CoSe 92423, CoSe95422
- Q What are most suitable sugarcane varieties under different stress conditions?
- A Drought - CoPant90223, Co87268, CoSe96234
- Waterlogging - UP9529, UP9530, CoSe96436
- Q What are improved sugarcane varieties for Good Ratooning?
- A Varieties for good ratooning are – CoS 8436, CoS 88230, CoS 95255, CoS 96268, CoSe95436, CoSe98231, CoJ64, CoS767, CoS8432, CoS88216, CoS91230, CoSe92423, CoS95222, CoSe95422
- Q How many months old crop and which portion of cane should be harvested for seed Purpose?
- A 8-10 months old crop of healthy sugarcane and 1/3<sup>rd</sup> to 2/3<sup>rd</sup> top portion of harvested cane should be utilized as cane seed.

### 2. Planting of Sugarcane

- Q Which are improved methods of sugarcane planting?
- A Different improved methods of sugarcane planting are:  
Ridge-furrow, flat, trench, double row, ring pit, Spaced Transplanting (STP), Poly bag
- Q What is technology detail of ring-pit method?
- A About 7600 pits/ha of 90/75 cm diameter and 45 cm deep are made by tractor mounted pit-digger machine. Twenty 2 budded treated setts are arranged horizontally in cyclic manner in each pit partially filled with mixture of 5 kg FYM, 45 gm DAP, 45 gm Urea and some part of soil, then followed by spray of chlorpyrifos 20% EC @ 5 liters/ha on setts, soil cover up to 2.5 cm above setts and light irrigation. Half of the excavated out soil with 25 gm urea is filled back in each pit in the month of March/April, remaining half of the soil is placed in pit with 25 gm urea and 4.5 gm Phorate 10 G by the end of June.
- Q Which method of planting is suitable for late conditions?
- A Under late planting condition 25000-30000 STP raised settlings are transplanted in one hectare land maintaining 75 cm row spacing and 60 cm plant to plant spacing leaving 5 cm of shoot above ground level followed by irrigation.

### 3. Fertilizer/Nutrient Management

Q What is balanced fertilizer use in plant crop of sugarcane?

A Application of 50, 60 and 60 kgs of N,P and K, respectively as basal dose at the time of planting and 50 kg of N each at first irrigation and second/third irrigation as top dressing ( complete dose of N should be applied within 90 days of planting) is advised for good plant crop.

Q What is recommended dose of bio-fertilizer use in sugarcane.

A *Acetobacter* culture @ 12 kg/ha mixed with 125 kg FYM is applied over setts in furrows at the time of planting.

Q Recommended dose and method of Press-mud application.

A Sulphinated Press-Mud Cake (SPMC) @ 10 t/ha is evenly spread in the field and mixed with soil at last ploughing before sugarcane planting.

Q Please inform about the symptoms of zinc deficiency in sugarcane and measures for its amelioration.

A Leaves of the middle portion of the cane become yellow in case of zinc deficiency. Yellowing starts from the tips of the leaves and proceeds towards the base of the leaves. In acute deficiency the leaves dry up. Zinc Sulphate (0.5%) + Urea (2.5%) or Zinc Sulphate (0.5%) + lime water are sprayed for its amelioration.

### 4. Irrigation in sugarcane

Q How many pre-monsoon and post monsoon irrigations are required for sugarcane?

A For good crop of sugarcane 6-8 pre-monsoon and 2 post-monsoon irrigations in autumn cane and 4-5 pre-monsoon and 1-2 post-monsoon irrigations in spring cane are required.

Q What is minimum number of irrigations required and when it should be given to minimize yield loss as well as to economize water use?

A To minimize yield loss irrigations at critical growth stages like; germination, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> tillering stages must be given. It also economizes water use.

Q Improved sugarcane irrigation methods for water scarcity conditions.

A Under water scarcity condition application of irrigation water through drip system in paired row planting is advisable.

### 5. Weed control and intercultural operations

Q What is recommended dose, time and methods of herbicides use in sugarcane?

A Recommended method of herbicides use in sugarcane are as follows:

Pre-emergence- Atrazine @ 2 Kg a.i./ha, Metribuzine @ 1.5 Kg a.i./ha, Ametryne @ 2 Kg a.i. /ha

Post emergence- Ametryne @ 2 Kg a.i. /ha, Glyphosate @ 1.50 Kg a.i. /ha

Q What is integrated approach of weed management?

A One hoeing after first irrigation and application of atrazine @2 Kg a.i./ha in moist soil after second irrigation is integrated method of weed management.

Q How many and when hoeings should be done?

A Three hoeings at 30, 60 and 90 days after planting is recommended for sugarcane.

Q When earthing up and tying are done in sugarcane?

A Earthing up in sugarcane is done in last week of June/first week of July. To prevent cane lodging first tying of cane is done in the August month of individual clumps & second tying can be done in the month of September to tie the opposite clumps of two immediate consecutive rows.

## 6. Plant Protection

Q What are symptoms and recommended control measures for major insect-pests such as termite, borers (top borer, stalk borer and internode borer), *pyrilla*, black bug etc.?

A Symptoms and control measures of major sugarcane insect-pests are as follows:

S. No.	Insect-pest	Symptom	Time of infestation	Control (Dose/ha)
	Termite	Gappy germination, drying of shoots, yellowing and drying of clumps, shoots can be pulled easily, setts damage ( entry of termite from cut end and soft tissue of cane replaced with soil), bud damage, presence of termite	Planting, tillering to harvest	Chlorpyriphos 20 EC @ 5.0 liters/ha in 1600 liters of water with rose cane on cut setts in furrows
2	Top borer	Red streak on mid rib of leaf, shot holes on newly open leaves, dead heart, emergence of side shoots	Feb. to November	Furadan 3G @ 33 Kg/ha. Release of <i>trichograma japonicum</i> @ 50,000 adults/ha thrice per brood
3	Internode borer	Single hole with spiral cut near root primordial region or in the centre of nod, on slight jerk cane can breaks into 2 parts easily, emergence of side shoots	July to November	Monochrotophos @ 750 gm a.i. per ha (36% SL 2 liter/ha) in 800-1000 liters of water spray after removing dry leaves
4	Stalk borer	Makes very small holes (more than 1), frash hanging from the hole, single larva may damagae more than one internode	July to November	<i>Trichograma chilonis</i> @ 50000 adults/ha at 10 days interval from July-October. Release of <i>Cotesia flavips</i> @ 500 gravid females/ha at weekly interval from July to November.
5	Pyrilla	Yelloing of crops, blackening growth on upper surface of leaves	May-June	Collection and redistribution of

				<i>epiricania melanoleuca</i> @ 4000-5000 cacoons and 4-5 lakhs eggs/ha
6	Black bug	Appear in summer only, yellowing of crops and stunting growth, appearance of eye shaped red spots on leaves	Summer	Monochrotophos @ 200 gm a.i. per ha in 800-1000 liters of water spray

Q How to identify and prevent appearance/spread of major diseases in sugarcane?

A The symptoms and preventive measures for major diseases are as follows:

S. No.	Diseases	Symptoms	Preventive measures
1	Red rot	Yellowing of top leaves and start drying from leaf blade, red spot on internodes, cutting cane vertically inner cane appears red with white mass of fungus and smell like vinegar.	<p>The preventive measures are as follows:</p> <ol style="list-style-type: none"> <li>1. Only resistant varieties should be planted.</li> <li>2. Before planting, cane seed should be treated with Moist Hot Air Treatment (MHAT).</li> <li>3. Regular monitoring of the occurrence of diseases has to be carried out regularly.</li> <li>4. Removal of diseased clumps soon after their appearance.</li> <li>5. Crop diversification.</li> <li>6. Restrict water flow from affected field to other fields.</li> </ol>
2	Smut (kandua)	Appearance of black color wet mass on cane top portion (April-June). Affected clumps produces thin stalks with larger internodes.	
3	Wilt	The diseased clumps show stunting, yellowing and drying of top leaves. On splitting open the canes, the pith of infected cane becomes dirty-brown and vascular bundles are dark red in color, but white patches like red rot are not formed.	
4	Grassy Shoot Disease	Profused tillering from the base of affected plants displaying grassy appearance. Leaves become thin, narrow, yellowish and millable cane may not form.	
5	Ratoon Stunting Disease	Diseased stool usually display stunted growth, reduced tillering, thin stalk with shortened internodes and yellowish foliage. Splitting open the canes longitudinally, orange, red and redish brown discoloration as dots, commas appear on nodes.	

## 7. Mechanization in Sugarcane

Q What are different machines/equipments available for sugarcane cultivation?

A The machines/equipments for sugarcane cultivation are:  
Cutter planter, stubble shaver, tractor operated cultivator, pit digger, engine operated weeder, raised bed maker –cum-seeder, ratoon management device (RMD).

Q What are prices of different sugarcane cultivation machines/equipments?

A The prices of IISR developed different sugarcane cultivation machines/equipments as fixed during 2006-07 are given in table below:

S.No.	Name of machines/equipments	Price in Rs.
1	Tractor operated two-row ratoon management device (RMD).	73,200
2	RMD without stubble shaving attachment	41,400
3	Tractor operated multi purpose equipment (3 rows)	43,100
4	Tractor operated pit digger	52,800
5	Tractor operated two row modified sugarcane cutter planter with seeder attachment (raised bed seeder planter)	37,600

## 8. Intercropping in Sugarcane

Q Please name the profitable intercrops with autumn and spring sugarcane.

A Profitable Inter crops with sugarcane are–  
With Autumn cane – potato, garlic, rajmah, lentil, mustard, maize, wheat, pea  
Spring cane –mung, maize, urd, lobia,

## 9. Ratoon Management

Q Is there any technology for improving sprouting in winter initiated ratoon?

A To improve sprouting in winter initiated ratoon potash at the rate of 80 kg/ha along with irrigation, one month prior to plant cane harvest is given. FYM based *Trichoderma* culture @ 20 kg/ha with PMC (10 t/ha) application helps in sprouting of winter initiated ratoon.

Q Which method is suitable for obtaining optimum number of millable cane from ratoon crop?

A Farmers can obtain higher ratoon yield when sugarcane is planted under paired row system (30: 120 cm) with 20% higher on normal seed rate and gap filling at 1<sup>st</sup> irrigation in ratoon crop. This also curtails the gap filling operation in ratoon crop.

Q Please tell the suitable gap filling material and when gap should be filled in ratoon crop?  
A 30-35 days old polythene bag/STP raised seedlings are suitable gap filling material. The gap appearing at above 60 cm should be filled within 30 days after ratoon initiation.

Q What is method of trash mulching and their advantages in ratoon crop.  
A Trashes collected after harvest of plant crop should be evenly spread in alternate rows, followed by light irrigation and spray of Chlorpyrifos 20 EC solution @ 5.0 liters/ha in 1600 liters of water to control termite and army-worm. Trash mulching in ratoon conserves moisture and thus, preserves ground water by saving irrigation water up to 30-40%. It also improves soil fertility and helps in weed check.

### 10. Gur Making

Q Please name the suitable varieties for gur production.  
A Suitable varieties for gur production are: CoSe 92423, CoS 767, CoS 88230, CoS 8432, Co 1148, BO 91, UP 39 etc.

Q What are locally available herbal based sugarcane juice clarificants?  
A Herbal based sugarcane juice clarificants are:

<u>Name of plant</u>	<u>Parts to be used</u>
Devla	stem and root
Bhindi	stem and root
Phalsa	green bark
Arandi	seed
Peanut	seed
Soyabin	seed