

Sugarcane Technologies

CoLk 94184, an early maturing sugarcane variety

The Institute developed a high sugar yielding cane variety, CoLk 94184 (Birendra) which has been released for commercial cultivation in North Central Zone of the country (eastern U.P. and Bihar). CoLk 94184 is a rare combination of two desirable attributes i.e., early maturity and good ratooning ability. This variety will help in addressing the problem of low sugar and poor ratooning ability of the existing sugarcane varieties in the region. CoLk 94184 variety can withstand both moisture stress and waterlogging, hence, it is capable of providing a boost to sugar recovery and cane production in U. P. and Bihar. On an average farmers can harvest 76 tonnes of cane per hectare.



Spaced transplanting technique (STP)

A spaced transplanting (STP) technique has been developed for synchronisation of tillering and quick seed multiplication of sugarcane. It increases seed multiplication ratio from 1:10 to 1:40. It has become popular even in the neighbouring countries. It has contributed in fast spreading of newly evolved varieties at several places.



Three-tier seed programme

This programme provides disease-free healthy seed to growers. It has become popular all over the country. Moist-hot-air equipment, designed and developed at this Institute have been installed in a number of sugar factories. It has proved its usefulness in sustaining sugarcane production.



Technology package for intercropping in sugarcane

Sugarcane + Potato

- Seed rate: Sugarcane- 60 q/ha, Potato-25 q/ha
- 1:2 row ratio, sugarcane planted at 90 cm and two rows of potato are accommodated at 30 cm spacing
- Weed control through Simazine @ 1 kg a.i./ha as pre-emergence followed by hoeing and earthing up at 30 and 50 DAP respectively
- Apply N:P:K fertilizers for Sugarcane @ 150:60:60, for Potato @ 120px:80:100.
- System yields: Potato-272 q/ha and Sugarcane-90.6 t/ha with a profit margin of Rs.1, 06,736 /ha



Sugarcane + Rajmash

- Seed rate: Sugarcane- 60 q/ha, Rajmash- 80 kg/ha
- 1:2 row ratio, sugarcane planted at 90 cm accommodating two rows of rajmash at 30 cm spacing
- Apply N:P:K fertilizers for Sugarcane @ 150:60:60, for Rajmash @ 80:40:30.
- Control weeds through Pendimethalin as pre-emergence @ 2 kg a.i./ha followed by 2 to 3 hoeing after harvest of rajmash
- System yields : Sugarcane-86.8 t/ha, Rajmash grain-17.5 q/ha with profit margin of Rs.89, 884/ha



Sugarcane + Mustard

- Seed rate :Sugarcane: 60 q/ha, Mustard: 5 kg /ha
- 1:2 row ratio, sugarcane planted at 90 cm and two rows of mustard accommodated at 30 cm spacing
- Apply N:P:K fertilizers for Sugarcane @ 150:60:60, for Mustard @ 30:20:0.
- Control weeds through Pendimethalin @ 2 kg a.i./ha as preemergence followed by two hoeing at 30 and 60 days after harvest of mustard
- System yield : Sugarcane-86.8 t/ha, Mustard-17.5 q/ha with a profit margin of Rs.89, 884/ha



Sugarcane + Wheat

- Seed rate: Sugarcane: 60 q/ha, Wheat: 75 kg /ha
- 1:3 row ratio, sugarcane planted at 90 cm and three rows of wheat accommodated at 20 cm spacing through IISR Planter cum Seeder under FIRB system
- Apply N:P:K fertilizers for Sugarcane @ 150:60:60, for Wheat @ 90:45:45.
- Control weeds through Pendimethalin @ 2 kg a.i./ha as pre-emergence followed by two hoeing at 30 and 60 days after harvest of wheat
- System yield : Sugarcane-74.5 t/ha, Wheat-39.4 q/ha with a profit margin of Rs.56329 /ha.



Technology package for modified planting methods in sugarcane

Ring-Pit method

- Mother shoot technology or no tiller technology
- Specifications:
 - Pit diameter : 75 cm
 - Depth : 30 cm
 - Centre to centre : 105 cm
 - No. of pits/ha : 9000
- Suitable for drought prone areas, undulating topography, light textured soils, saline - sodic soils, multiple ratooning and high yielding, tall and thick cane varieties



Trench method

- Trench specifications : 30 cm wide and deep
: Centre to centre 120px cm (30: 90 cm)
- Mechanized operation
- Less labour requirement
- Enhanced water use efficiency



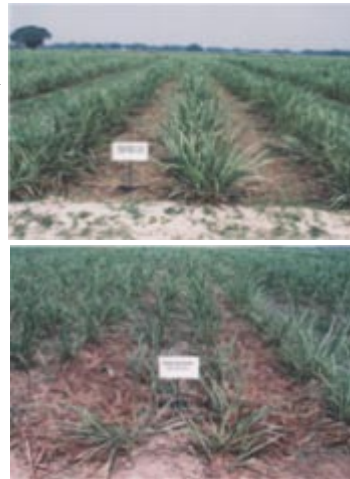
FIRB method of planting

- Appropriate FIRB configuration (50-30-50 cm)
- Sowing of wheat on ridges (2-3 lines) in November
- Manual planting of sugarcane in irrigation ditches in Feb. - March
- Raising sugarcane through spaced transplanting technique and poly bag system.
- Enhances 30% yield of sugarcane as compared to sequential with full yield of wheat



Sugarcane Ratoon Management

- At initiation dismantling of ridges, stubble shaving and off-barring is recommended for good ratoon yield.
- Gap filling with slip setts/pregerminated setts/polybag raised settlings is a must if gaps exceed 15% of normal crop stand. More than 45 cm distance between subsequent clumps is taken as gap.
- Paired row system of planting (120px:30) reduces gaps and optimizes plant population in subsequent ratoon. Thus it produces higher yields compared to sole planting at 90 cm.
- Trash mulching (10 cm thick) in alternate rows for conserving soil moisture, minimizing weed infestation and maintaining soil organic carbon.
- Application of potassium (80 kg K₂O/ha) with irrigation water in standing plant cane one month prior to harvesting improves bud sprouting, number of millable canes and yield of succeeding ratoon crop.



Skip furrow method of irrigation-a Water saving sugarcane production technology

After germination of sugarcane (35-40 days after planting), 45 cm wide and 15 cm deep furrows are made in alternate rows. It saves irrigation water by 36.5% and improves water use efficiency by 64%.



Source: IISR (ICAR), Lucknow

