

1. Technology developed

1.1 Sugarcane breeding

1.1.1 Sugarcane early maturing clone was identified for release in Peninsular Zone of the country. (Ref.F.No.31-5/12-PCS of Dr. O. K. Sinha, PC, Sugarcane).

CoN 05071 (Gujarat Sugarcane – 5) (2012)

Particulars	Characteristics	
Parents	CoJn 86310 x Co 86249	
Cane Yield (t/ha)	142.78	
Sugar yield (t/ha)	18.86	
Sucrose % Juice	18.67	
Disease reaction	Red rot : MR Wilt : MR Smut : R	

1.1.2 Sugarcane Variety Released for general cultivation for Farmers' of Gujarat (Released through State Seed Sub Committee)

1) CoN 03131 (Gujarat Sugarcane – 4) (2005)

	Particulars	Characteristics
	Parents	Bo 108 x CoS 510
	Cane Yield (t/ha)	145.74
	Sugar yield (t/ha)	18.98
	Sucrose % Juice	18.55
	Disease reaction	Red rot : MR Wilt : MR

2) CoN 05071 (Gujarat Sugarcane – 5) (2007)

Particulars	Characteristics	
Parents	CoJn 86310 x Co 86249	
Cane Yield (t/ha)	142.78	
Sugar yield (t/ha)	18.86	
Sucrose % Juice	18.67	
Disease reaction	Red rot : MR Wilt : MR Smut : R	

3) CoN 05072 (Gujarat Sugarcane – 6) (2007)

	Particulars	Characteristics
	Parents	Co 8213 X BO 91
	Cane Yield (t/ha)	134.89
	Sugar yield (t/ha)	16.88
	Sucrose % Juice	17.68
	Disease reaction	Red rot : R Wilt : R Smut : R

4) CoN 04131 (Gujarat Navsari Sugarcane – 7) (2011)

Particulars	Characteristics	
Parents	Co 95021 X Co 8347	
Cane Yield (t/ha)	134.74	
Sugar yield (t/ha)	17.06	
Sucrose % Juice	18.13	
Disease reaction	Red rot : MR Wilt : MR Smut : R	

5) CoN 07072 (Gujarat Navsari Sugarcane – 8) (2013)

	Particulars	Characteristics
	Parents	CoS 8436 x Co 86002
	Cane Yield (t/ha)	136.06
	Sugar yield (t/ha)	17.89
	Sucrose % Juice	18.50
	Disease reaction	Red rot : MR Wilt : MR Smut : R

6) CoN 09072 (Gujarat Navsari Sugarcane – 9) (2015)

Particulars	Characteristics	
Parents	Co 0217 G.C.	
Cane Yield (t/ha)	129.05	
Sugar yield (t/ha)	16.15	
Sucrose % Juice	18.00	
Disease reaction	Red rot : MR Wilt : MR Smut : R	

7) CoN 13073 (Gujarat Navsari Sugarcane – 10) (2017)

	Particulars	Characteristics
	Parents	CoN 91132 x CoC 671
	Cane Yield (t/ha)	138.85
	Sugar yield (t/ha)	18.03
	Sucrose % Juice	18.53
	Disease reaction	Red rot : MR Wilt : MR Smut : R

8) CoN 13072 (Gujarat Navsari Sugarcane – 11) (2018) (Navya)

Particulars	Characteristics	
Parents	Co 86032 G.C.	
Cane Yield (t/ha)	132.53	
Sugar yield (t/ha)	17.86	
Sucrose % Juice	19.11	
Disease reaction	Red rot : MR Wilt : MR Smut : R	

9) CoN 15071 (Gujarat Navsari Sugarcane – 12) (2021) (Divyashi)

	Particulars	Characteristics
	Parents	CoM 0265 X CoN 85134
	Cane Yield (t/ha)	129.34
	Sugar yield (t/ha)	16.38
	Sucrose % Juice	17.27
	Disease reaction	Red rot : MR Wilt : MR Smut : R

10) CoN 18071 (Gujarat Navsari Sugarcane – 13) (Madhuri) (2024)

	Particulars	Characteristics
	Parents	Co 85002 G.C.
	Cane Yield (t/ha)	130.47
	Sugar yield (t/ha)	14.40
	Sucrose % Juice	18.33
	Disease reaction	Red rot: MR Wilt: MR Smut: R

1.2 Clones of the Centre included in National hybridization Garden, SBI Coimbatore

CoN 91132	CoN 05071	*CoN 13072	*CoN 18071
CoN 05072	CoN 95132	*CoN 13073	
CoN 07072		*CoN 15071	

1.3 Centre contributed sugarcane clones for zonal testing in AICRP (S)

Year Variety	2020	2021	2022	2023	2024
Sugarcane	CoN 20071	CoN 21071	22071	23071	24071
	CoN 20072	CoN 21072	-	23072	24072
	-	-	-	-	24073

1.4 Breeder Seed distributed for further multiplication

Year	Sugarcane Seed (t/ha)
2020-21	475
2021-22	488
2022-23	362
2023-24	388
2024-25	375
2020-21	475
2021-22	488

1.5 Tissue culture plantlets and single eye bud production

Year	Tissue culture plantlets	Single eye bud plantlets
2020-21	5015	61355
2021-22	6250	124514
2022-23	8630	274300
2023-24	5360	318035
2024-25	5850	248480

2. Production and Protection technology developed (2021 to 2025)

2.1 Agronomy

Two sugarcane production technologies were developed and recommended to farmers of South Gujarat heavy rainfall zone AES-III.

2.1.1 Recommendation for farmer's community

1. Assessment of planting geometry for single eye budded settling on sugarcane under south Gujarat condition (2022-23).

The farmers of south Gujarat planting sugarcane through single eye bud settling are recommended to plant the settling at 120 cm row spacing or with pair row of 60-120-60 cm. Further, it is also recommended to keep plant to plant distance 45 cm for getting higher yield and net return.

2. Effect of nutrient management on sugarcane planted through single eye budded settling under south Gujarat condition (2023-24).

The farmers of south Gujarat planting sugarcane crop through single eye bud settling are recommended to apply FYM 25 t/ha or bio compost 15 t/ha and to fertilize the crop with 188-94-94 kg N-P₂O₅-K₂O/ha (Nitrogen in four splits @ 15 % at basal, 30 % at 1.5 month after planting, 20 % at 3 month after planting and 35 % at 5 month after planting) along with bio fertilizer application (Acetobacter + Phosphate solubilizing bacteria (PSB) + Potash mobilizing bacteria (KMB) applied two times as basal and before final earthing up @ 2.5 l/ha each both time) for saving 25 % fertilizer dose.

2.2 Plant pathology

2.2.1. Recommendation for scientific community 2020-21

1. Sugarcane varieties viz., Co 13003, Co 13004, CoN 13072, CoSnk 13101, MS 13081, Co 13006, Co 13009, Co 13013, CoN 13073 and CoSnk 13103 were found moderately resistant against red rot disease.
2. Sugarcane varieties viz., Co 13002, Co 13003, MS 13081, Co 13008, Co 13009, Co 13013, Co 13018 and CoN 13073 were found resistant whereas Co 13004, CoN 13072 and Co 13020 were exhibited moderately resistant whip smut disease.