


## 8. Technology developed:

### 8.1 Sugarcane breeding


8.1.1 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, Project Coordinator (Sugarcane))

#### 8.1.1.1 CoN 05071 (Gujarat Sugarcane – 5): 2012


 <p><b>CoN 05071</b> (Gujarat Sugarcane – 5) Year of release : 2012</p>	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

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


#### 8.1.2.1 CoN 04131 (Gujarat Sugarcane – 7): 2011

Particulars	Characteristics	 <p><b>CoN 04131</b> (Gujarat Sugarcane – 7) Year of release : 2011</p>
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	


### 8.1.2.2 CoN 07072 (Gujarat Navsari Sugarcane – 8): 2013

 <p style="text-align: center;"><b>CoN 07072</b> (Gujarat Sugarcane – 8) Year of release: 2013</p>	Particulars	Characteristics
	Parents	Co S 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

### 8.1.2.3 CoN 09072 (Gujarat Navsari Sugarcane – 9): 2015

 <p style="text-align: center;"><b>CoN 09072</b> (Gujarat Sugarcane – 9) Year of release: 2015</p>	Particulars	Characteristics
	Parents	Co 0217 GC
	Cane Yield (t/ha)	129.05
	Sugar yield (t/ha)	18.15
	Sucrose % Juice	12.84
	Disease reaction	Red rot : MR Wilt : MR Smut : R

### 8.1.2.4 CoN 13073 (Gujarat Navsari Sugarcane – 10): 2016

 <p style="text-align: center;"><b>CoN 13073</b> (Gujarat Navsari Sugarcane – 10) Year of release: 2016</p>	Particulars	Characteristics
	Parents	CoN 91132 X CoC 671
	Cane Yield (t/ha)	138.85
	Sugar yield (t/ha)	16.15
	Sucrose % Juice	18.53
	Disease reaction	Red rot : MR Wilt : MR Smut : R

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

CoN 91132	CoN 85134	CoN 95132	CoN 07072	CoN 09072
CoN 03131	CoN 03132	CoN 05071	CoN 13073	CoN 10071
CoN 05072	CoN 98133	CoN 97132	CoN 13074	

#### 8.1.5 Centre contributed 19 sugarcane clones for zonal testing in AICRP (S) from 2009-10 to 2017-18

Year Variety	2010	2011	2012	2013	2014	2015	2016	2017
Early	CoN 10071	CoN 11071	CoN 12071	CoN 13071	CoN 14071	CoN 15071	CoN 16071	CoN 17071
	CoN 10072	CoN 11072	CoN 12072	CoN 13072	CoN 14072	CoN 15072		CoN 17072
Mid late	CoN 10073	CoN 11073	CoN 12073	CoN 13073	CoN 14073			
	--	CoN 11074	CoN 12074	CoN 13074	CoN 14074			

#### 8.1.6 Breeder Seed distributed for further multiplication

Year	Seed produced (tones)
2009-2010	396.816
2010-2011	193.127
2011-2012	286.017
2012-2013	332.733
2013-2014	202.500

#### 8.1.7 Tissue culture plantlets produced and supply on no lose no profit basis

Year	Plantlet produced
2009-2010	65,407
2010-2011	66,113
2011-2012	1,39,435
2012-2013	3,34,400
2013-2014	1,31,575

### 8. Production technology developed

Production technologies developed and recommended for farmers (2009-2010 to 2013-2014)

#### 8.1 Agronomy

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

#### Recommendation for farmer's community:

1. AS 60 Studies on seed cane economy in sugarcane cultivation

Sugarcane growers of South Gujarat heavy rainfall zone, agro ecological situation – III are advised to plant sugarcane crop with two bud sett and 100 per cent (50000 two eye bud) of recommended seed rate for getting higher cane yield and net return.

2. AS 61 Optimizing irrigation schedule in sugarcane under different planting methods (For tropical region)

Sugarcane growers of South Gujarat heavy rainfall zone (AES-III) are advised to plant sugarcane crop with paired cum trench planting (at 30:150 cm row spacing) and to irrigate the crop at 0.9 IW/CPE ratio with 15 irrigations each of 8 cm depth. The first irrigation should be given at the time of planting and rests at 19-20 days interval during winter season and 13-14 days interval during summer season, for getting higher cane yield and net return.

3. AS 63 Plant geometry in relation to mechanization in sugarcane

Sugarcane growers of South Gujarat heavy rainfall zone (AES III) are advised to plant sugarcane setts at 120 cm normal row spacing with variety CoN 05071 for higher remunerative production and mechanization in sugarcane cultivation.

## 8.2 Entomology

#### Recommendation for scientific community

1. Sugarcane genotypes viz., CoSnk 05104, CoVSI 05122, CoN 05071, 2004 N 492, CoVSI 05123 and Co 05001 were found less susceptible against early shoot borer and top borer under natural condition.
2. Sugarcane genotypes viz., 2004 N 492 was found less susceptible against scale insect where as, Sugarcane genotypes viz., 2004 N 492 and CoSnk 05101 was found moderately susceptible against mealy bugs under natural condition
3. Sugarcane genotypes Viz., Co 08008, Co 08020, Co 08001 and 2007 N 469 were found less susceptible against early shoot borer.
4. Sugarcane genotypes Viz., Co 08008, 2007 N 535, 2007 N 469, CoSnk 08101, Co 08016 and VSI 08122 were found less susceptible against scale insect.

## 8.3 Plant pathology

#### Recommendation for scientific community

1. Sugarcane varieties Co 05001, CoSnk 03754, Co 0416, 2004 N 596 and 2004 N 663 showed moderately resistant reaction to wilt disease.

2. Sugarcane varieties Viz., Co 05001, CoVSI 05121, CoVSI 05123, 2004 N 596 and 2004 N 663 was found to be moderately resistant to red rot in plug and nodal method.
3. Sugarcane varieties Co 07008 and Co 07009 showed resistant reaction. While, Co 07012, PI 07131 and Co 07010 exhibited moderately resistant reaction against smut disease.
4. Sugarcane Varieties Co 07008 and Co 07009 showed resistant reaction. While, Co 07012, PI 07131 and Co 07010 exhibited moderately resistant reaction against smut disease.