

# ALL INDIA CO-ORDINATED RESEARCH PROJECT ON SUGARCANE

## CROP IMPROVEMENT

### Technical programme for the year 2018-19

#### East Coast Zone

#### B II - ZONAL VARIETAL TRIALS

**Centres (5):** Anakapalle, Cuddalore, Nayagarh, Nellikuppam and Vuyyuru

#### 1. Initial Varietal Trial (Early)

Entries (4)	:	CoA 16321, CoC 16336, CoC 16337, CoV 16356
Standards (3)	:	CoA 92081, CoC 01061, CoOr03151
Design	:	Randomized Block Design
Replications	:	Three
Plot size	:	Gross : 6.0 m x 6r x 0.90 m Net : 5.0 m x 4r x 0.90 m
Seed rate	:	12 buds per meter
Date of planting	:	1 <sup>st</sup> fortnight of January
Crop duration	:	10 months
Data to be recorded	:	As per Annexure - I

#### 2. Advanced Varietal Trial (Early) I Plant

Entries (3)	:	CoC 15336, CoC 15338 and CoV15356
Standards (3)	:	CoA 92081, CoC 01061 and CoOr 03151
Design	:	Randomized Block Design
Replications	:	Four
Plot size	:	Gross : 6.0 m x 8r x 0.9 m Net : 5.0 m x 6r x 0.9 m
Seed rate	:	12 buds per meter
Date of planting	:	1 <sup>st</sup> fortnight of January
Crop duration	:	10 months
Data to be recorded	:	As per Annexure - I

### **3. Advanced Varietal Trial (Early) – II Plant**

Entries (3)	:	Co 13023, CoA 14321, CoC 14336
Standards (3)	:	CoA 92081, CoC 01061, CoOr 03151
Design	:	Randomized Block Design
Replications	:	Four
Plot size	:	Gross : 6.0 m x 8r x 0.9 m Net : 5.0 m x 6r x 0.9 m
Seed rate	:	12 buds per meter
Date of planting	:	1st fortnight of January
Crop duration	:	10 months
Data to be recorded	:	As per Annexure - I

### **4. Advanced Varietal Trial (Early) – Ratoon**

Entries (3)	:	Co 13023, CoA 14321, CoC 14336
Standards (3)	:	CoA 92081, CoC 01061, CoOr 03151
Design	:	Randomized Block Design
Replications	:	Four
Plot size	:	Gross : 6.0 m x 8r x 0.9 m Net : 5.0 m x 6r x 0.9m
Date of ratooning	:	After harvest of the crop
Crop duration	:	9 months
Data to be recorded	:	As per Annexure - II

## 5. Initial Varietal Trial (Midlate)

Entries (4)*	CoA 16322, CoC 16338, CoC 16339, CoV 16357
Standards (3)	CoV 92102 ,Co 86249and Co 06030
Design	Randomized Block Design
Replications	Three
Plot size	Gross : 6.0 m x 6r x 0.9 m Net : 5.0 m x 4r x 0.9 m
Seed rate	12 buds per meter
Dateof planting	2 <sup>nd</sup> fortnight of November to end of December
Crop Duration	12 months
Data to be recorded	: As per Annexure - III

\*Natural incidence of red rot in the entry PI 16376 was reported by Nellikuppam centre and as per the decision taken in the Zonal Breeders Meet conducted at Lucknow on 19.01.18, this entry is excluded from the trial

## 6. Advanced Varietal Trial (Midlate) – II plant

Entries (6)	: Co 13028, Co 13029, Co 13031, CoA 14323, CoC 14337 and PI 14377
Standards (3)	: CoV 92102, Co 86249 and Co 06030
Design	: Randomized Block Design
Replications	: Three
Plot size	: Gross : 6.0 m x 8r x 0.9 m Net : 5.0 m x 6r x 0.9 m
Seed rate	: 12 buds per meter
Date of planting	: 2 <sup>nd</sup> fortnight of November to end of December
Crop duration	: 12 months
Data to be recorded	: As per Annexure - III

## 7. Advanced Varietal Trial (Midlate) – Ratoon

Entries (6)	:	Co 13028, Co 13029, Co 13031, CoA 14323, CoC 14337 and PI 14377
Standards (3)	:	CoV 92102, Co 86249 and Co 06030
Design	:	Randomized Block Design
Replications	:	Three
Plot size	:	Gross : 6.0 m x 8r x 0.9 m Net : 5.0 m x 6r x 0.9 m
Seed rate	:	12 buds per meter
Date of ratooning	:	After harvest of the crop
Crop duration	:	11 months
Data to be recorded	:	As per Annexure - IV

### Seed multiplication of new entries

The following entries were accepted during the group meeting of AICRP(S) held at TNAU, Coimbatore in 2017. The concerned breeders are requested to supply seed material to all the centres of the zone for one-year multiplication. Breeders of all the centres of the zone may please ensure that seed material of new entries is received well in time for planting.

**Early (4)** : CoA 17321, CoA 17322, CoA 17323, CoC 17336

**Midlate (5)**: CoA 17324, CoC 17337, CoOr 17346, PI 17376, PI 17377

### Seed multiplication of IVT (ML) entries:

In the Zonal Breeders Meet conducted on 19.01.18 at ICAR - IISR, Lucknow two entries viz., CoC 15339 and CoOr 15346 were selected from IVT (ML) for promoting to AVT (ML) I Plant. Since only two entries are available for conducting the trial, these entries will be multiplied during 2018-19 and will be included in the AVT (ML) I Plant to be conducted during the year 2019-20.

**ALL INDIA COORDINATED RESEARCH PROJECT ON SUGARCANE**

**Characters on which data to be recorded in Initial Varietal Trial (IVT)  
and Advance Varietal Trial (AVT) in Early(Plant crop)**

1. Germination % at 30 days for tropics and 45 days for sub-tropics
2. No. of tillers (thousand/ha) at 120 days
3. No. of shoots (thousand/ha) at 240 days
4. Cane yield (t/ha) after 10 months at harvest
5. Number of millable canes (thousand/ha) after 10 months at harvest
6. Stalk length (cm) after 10 months at harvest
7. Stalk diameter (cm) after 10 months at harvest
8. Single cane weight (kg) after 10 months at harvest
9. Brix % at 8 and 10 months
10. Sucrose % in juice at 8 and 10 months
11. Purity % at 8 and 10 months
12. CCS % at 8 and 10 months
13. CCS t/ha after 10 months at harvest
14. Extraction % after 10 months at harvest
15. Fibre % after 10 months at harvest
16. Pol % cane after 10 months at harvest
17. Jaggery quality after 10 months at harvest (if facility available)
18. Jaggery yield (t/ha) after 10 months at harvest (if facility available)

***Morphological characters***

1. Lodging : Erect, lodging, snapping, heavy lodging
2. Leaf sheath spines : Absent (A), present (P), medium (M), heavy (H)
3. Flowering : Absent (A), present (P)
4. Canopy structure and colour : Green, light green, yellowish green, dark green
5. Bud size : Big (B), small (S), medium (M)
6. Pithiness : Absent (A), present (P), less (L), heavy (H)
7. Internode splits : Absent (A), present (P), low (L), moderate (M), heavy (H)
8. Natural incidence of diseases and pests

**ALL INDIA COORDINATED RESEARCH PROJECT ON SUGARCANE**

**Characters on which data to be recorded in AVT (Early – Ratoon)**

- Note :**
1. No gap filling should be done.
  2. Ratooning operation should be completed within 15 days after harvesting plant crop.
1. Number of tillers (thousand/ha) before giving full earthing up (90 days)
  2. Number of cane formed tillers (thousand/ha) after 180 days
  3. Number of millable canes (thousand/ha) after 270 days at harvest
  4. Cane yield (t/ha) after 270 days at harvest
  5. Stalk length (cm) after 270 days at harvest
  6. Stalk diameter (cm) after 270 days at harvest
  7. Single cane weight (kg) after 270 days at harvest
  8. Brix % after 270 days at harvest
  9. Sucrose % in juice after 270 days at harvest
  10. Purity % after 270 days at harvest
  11. CCS % after 270 days at harvest
  12. CCS t/ha after 270 days at harvest
  13. Extraction % after 270 days at harvest
  14. Fibre % after 270 days at harvest
  15. Pol % cane after 270 days at harvest
  16. Jaggery quality after 270 days at harvest (if facility available)
  17. Jaggery yield (t/ha) after 270 days at harvest (if facility available)

**ALL INDIA COORDINATED RESEARCH PROJECT ON SUGARCANE**

**Characters on which data to be recorded in IVT and AVT (Midlate –Plant crops)**

1. Germination % at 30 days for tropics and 45 days for sub-tropics
2. No. of tillers (thousand/ha) at 120 days
3. No. of shoots (thousand/ha) at 240 days
4. Cane yield (t/ha) after 12 months at harvest
5. Number of millable canes (thousand/ha) after 12 months at harvest
6. Stalk length (cm) after 12 months at harvest
7. Stalk diameter (cm) after 12 months at harvest
8. Single cane weight (kg) after 12 months at harvest
9. Brix % at 10 and 12 months
10. Sucrose % in juice at 10 and 12 months
11. Purity % at 10 and 12 months
12. CCS % at 10 and 12 months
13. CCS t/ha after 12 months at harvest
14. Extraction % after 12 months at harvest
15. Fibre % after 12 months at harvest
16. Pol % cane after 12 months at harvest
17. Jaggery quality after 12 months at harvest (if facility available)
18. Jaggery yield (t/ha) after 12 months at harvest (if facility available)

***Morphological characters***

1. Lodging : Erect, lodging, snapping, heavy lodging
2. Leaf sheath spines : Absent (A), present (P), medium (M), heavy (H)
3. Flowering : Absent (A), present (P)
4. Canopy structure and colour : Green, light green, yellowish green, dark green
5. Bud size : Big (B), small (S), medium (M)
6. Pithiness : Absent (A), present (P), less (L), heavy (H)
7. Internode splits : Absent (A), present (P), low (L), moderate (M), heavy (H)
8. Natural incidence of diseases and pests

**ALL INDIA COORDINATED RESEARCH PROJECT ON SUGARCANE**

**Characters on which data to be recorded in AVT (Midlate – Ratoon)**

- Note :**
1. No gap filling should be done.
  2. Ratooning operation should be completed within 15 days after harvesting plant crop.
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1. Number of tillers (thousand/ha) before giving full earthing up (90 days)
  2. Number of cane formed tillers (thousand/ha) after 180 days
  3. Number of millable canes (thousand/ha) after 330 days at harvest
  4. Cane yield (t/ha) after 330 days at harvest
  5. Stalk length (cm) after 330 days at harvest
  6. Stalk diameter (cm) after 330 days at harvest
  7. Single cane weight (kg) after 330 days at harvest
  8. Brix % after 330 days at harvest
  9. Sucrose % in juice after 330 days at harvest
  10. Purity % after 330 days at harvest
  11. CCS % after 330 days at harvest
  12. CCS (t/ha) after 330 days at harvest
  13. Extraction % after 330 days at harvest
  14. Fibre % after 330 days at harvest
  15. Pol % cane after 330 days at harvest
  16. Jaggery quality after 330 days at harvest (if facility available)
  17. Jaggery yield (t/ha) after 330 days at harvest (if facility available)