

# ALL INDIA CO-ORDINATED RESEARCH PROJECT ON SUGARCANE CROP IMPROVEMENT

## Technical Programme for the year 2018-19 North West Zone

### B. II - Zonal Varietal Trial

**Centres (10) :** Faridkot, Karnal, Kota, Lucknow, Kapurthala, Muzaffarnagar, Pantnagar, Shahjahanpur, Sriganagar and Uchani

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

Entries (9)\* : Co 15023, Co 15024, Co 15027, CoLk 15201, CoLk 15203, CoLk 15204, CoLk 15205, CoPb 15211 and CoPb 15212

Standard (3) : CoJ 64, Co 0238 and Co 05009

Design : Randomized Block Design

Replications : Three

Plot size : Gross 6m x 6r x 0.90m  
Net : 5m x 4r x 0.90m

Seed rate : 12 buds per meter

Date of planting : February- March

Time of Harvest : 2<sup>nd</sup> fortnight of January

Data to be recorded : As per Annexure I

As per the decision taken in the Zonal Breeders Meet conducted at Lucknow on 19.01.18, the entry CoLk 15202 will be multiplied along with the 2017 series entries

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

Entries (4) : Co 14034, CoLk 14201, CoPb 14181, CoPb 14211

Standard (3) : CoJ 64, Co 0238 and Co 05009

Design : Randomized Block Design

Replications : Three

Plot size : Gross : 6m x 8r x 0.90m  
Net : 5m x 6r x 0.90m

Seed rate : 12 buds per meter

Date of planting : February- March

Time of Harvest : 2<sup>nd</sup> fortnight of January

Data to be recorded : As per Annexure I

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

Entries (3)	:	Co 13034, CoPb 13181 and CoS 13231
Standard (3)	:	CoJ 64, Co 0238 and Co 05009
Design	:	Randomized Block Design
Replications	:	Four
Plot size	:	Gross : 6m x 8r x 0.90m Net : 5m x 6r x 0.90m
Seed rate	:	12 buds per meter
Date of planting	:	February- March
Time of Harvest	:	2 <sup>nd</sup> fortnight of January
Data to be recorded	:	As per Annexure I

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

Entries (3)	:	Co 13034, CoPb 13181 and CoS 13231
Standard (3)	:	CoJ 64, Co 0238 and Co 05009
Design	:	Randomized Block Design
Replications	:	Four
Plot size	:	Gross : 6m x 8r x 0.90m Net : 5m x 6r x 0.90m
Date of ratooning	:	After harvest of plant crop
Time of Harvest	:	2 <sup>nd</sup> fortnight of December
Data to be recorded	:	As per Annexure II

## **5. Initial Varietal Trial (Midlate)**

Entries (11)	: Co 15026, CoLk 15206, CoLk 15207, CoLk 15208, CoLk 15209, CoPb 15213, CoPb 15214, CoS 15231, CoS 15232, CoS 15233, CoS 15234
Standard (3)	: CoS 767, CoPant 97222, Co 05011
Design	: Randomized Block Design
Replications	: Two
Plot size	: Gross : 6m x 6r x 0.90m Net : 5m x 4r x 0.90m
Seed rate	: 12 buds per meter
Date of planting	: February- March
Time of Harvest	: 2 <sup>nd</sup> fortnight of March
Data to be recorded	: As per Annexure III

## **6. Advanced Varietal Trial (Midlate) – I Plant**

Entries (7)	: Co 14035, CoH 14261, CoLk 14203, CoLk 14204, CoPb 14184, CoPb 14185, CoS 14233
Standard (3)	: CoS 767, CoPant 97222 and Co 05011
Design	: Randomized Block Design
Replications	: Three
Plot size	: Gross : 6m x 8r x 0.90m Net : 5m x 6r x 0.90m
Seed rate	: 12 buds per meter
Date of planting	: February- March
Time of Harvest	: 2 <sup>nd</sup> fortnight of March
Data to be recorded	: As per Annexure III

## **7. Advanced Varietal Trial (Midlate) – II Plant**

Entries (5)	:	Co 13035, CoH 13263, CoPant 13224, CoPb 13182, CoLk 13204
Standard (4)	:	CoS 767, CoS 8436, CoPant 97222, Co 05011
Design	:	Randomized Block Design
Replications	:	Three
Plot size	:	Gross : 6m x 8r x 0.90m Net : 5m x 6r x 0.90m
Seed rate	:	12 buds per meter
Date of planting	:	February- March
Time of Harvest	:	2 <sup>nd</sup> fortnight of March
Data to be recorded	:	As per Annexure III

## **8. Advanced Varietal Trial (Midlate) – Ratoon**

Entries (6)	:	Co 13035, CoH 13263, CoPant 13224, CoPb 13182, CoLk 13204
Standard (3)	:	CoS 767, CoS 8436, CoPant 97222 and Co 05011
Design	:	Randomized Block Design
Replications	:	Three
Plot size	:	Gross : 6m x 8r x 0.90m Net : 5m x 6r x 0.90m
Date of ratooning	:	After harvest of plant crop
Time of Harvest	:	2 <sup>nd</sup> fortnight of February
Data to be recorded	:	As per Annexure IV

## **9. SEED MULTIPLICATION**

### **(i) Multiplication of pre-zonal entries for seed lifting**

The following entries accepted during the biennial workshop of AICRP(S) held at the VSI, Pune in 2016 are under multiplication at ICAR-SBI Regional Centre, Karnal. On prior intimation, the coordinating centres should depute their staff to the Karnal Centre and lift the seed material for one year multiplication at their centres :

**Early (9)** :CoLk 16201, CoLk 16202, CoPb 16211, CoPb 16181, CoPant 16221, CoPant 16222, CoS 16231, Co 15025 and Co 16029

**Midlate (6)\*** :CoLK 16203, CoLk 16204, CoPb 16212, CoPant 16223, CoS 16232, Co 16030

\*As per the decision taken in the AICPR(S) group meeting conducted at Coimbatore during 2017, the midlate entry CoS 16233 will be multiplied along with the 2017 series entries at Karnal

### **10. Seed multiplication of new entries**

The following entries were accepted during the group meeting of AICRP(S) held at the TNAU, Coimbatore in 2017. The concerned breeders are requested to supply seed material of their entries for one year multiplication at ICAR-SBIRC, Karnal multiplication centre.

**Early (9)** : CoLk 15202, CoLk 17201, CoLk 17202, CoLk 17203, CoPb 17211, CoPb 17212, CoPant 17221, CoS 17231, CoS 17232

**Midlate (16)** : CoS 16233, CoLk 17204, CoLk 17205, CoPb 17213, CoPb 17214, CoPb 17215, CoPant 17223, CoPant 17224, CoS 17233, CoS 17234, CoS 17235, CoS 17236, CoS 17237, CoH 17261, CoH 17262, Co 17018

### **B.III - Evaluation and identification of climate resilient ISH and IGH genetic stocks**

The following 30 entries of ISH and IGH Clones will be multiplied at three centres for evaluating the drought (Lucknow and Karnal) and waterlogging (Pantnagar) tolerance

ISH 501, ISH 502, ISH 512, ISH 513, ISH 516, ISH 519, ISH 524, ISH 526, ISH 528, ISH 534, ISH 535, ISH 536, ISH 542, ISH 545, ISH 548, ISH 554, ISH 558, ISH 564, ISH 567, ISH 584, ISH 585, ISH 587, ISH 590, ISH 594, IGH 806, IGH 816, IGH 823, IGH 829, IGH 833, IGH 834

**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 %, Sucrose %, Purity % and CCS % - 2<sup>nd</sup> fortnight of November and January
10. CCS t/ha after 10 months at harvest
11. Extraction % after 10 months at harvest
12. Fibre % after 10 months at harvest
13. Pol % cane after 10 months at harvest
14. Jaggery quality after 10 months at harvest (if facility available)
15. 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 crop)**

- 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 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 %, Sucrose %, Purity % and CCS % - 2<sup>nd</sup> fortnight of December
  9. CCS t/ha after 270 days at harvest
  10. Extraction % after 270 days at harvest
  11. Fibre % after 270 days at harvest
  12. Pol % cane after 270 days at harvest
  13. Jaggery quality after 270 days at harvest (if facility available)
  14. 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 Initial Varietal Trial (IVT)  
and Advance Varietal Trial (AVT) in Midlate (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 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 %, Sucrose %, Purity % and CCS % - 2<sup>nd</sup> fortnight January and March
10. CCS t/ha after 12 months at harvest
11. Extraction % after 12 months at harvest
12. Fibre % after 12 months at harvest
13. Pol % cane after 12 months at harvest
14. Jaggery quality after 12 months at harvest (if facility available)
15. 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 crop)**

- 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 %, Sucrose %, Purity % and CCS % - 2<sup>nd</sup> fortnight of February
  9. CCS (t/ha) after 330 days at harvest
  10. Extraction % after 330 days at harvest
  11. Fibre % after 330 days at harvest
  12. Pol % cane after 330 days at harvest
  13. Jaggery quality after 330 days at harvest (if facility available)
  14. Jaggery yield (t/ha) after 330 days at harvest (if facility available)