

**All India Coordinated Research Project on Sugarcane
CROP IMPROVEMENT**

**Technical Programme for the year 2019-20
Peninsular Zone**

B. II - Zonal Varietal Trial

Centres (19): Akola, Basmathnagar, Belagavi, Coimbatore, Kolhapur, Mandya, Navsari, Padegaon, Perumalapalle, Powarkheda, Pravaranagar, Pune, Pugalur, Kawardha (Raipur), Rudrur, Sameerwadi, Sankeshwar, Sirugamani and Thiruvalla.

1. Initial Varietal Trial

Entries (15)	:	Co 16006, Co 11015, Co 16009, Co 16010, Co 16017, Co 16018, CoVC 16061, CoVC 16062, CoN 16071, CoM 16081, CoM 16082, CoVSI 16121, PI 16131, CoR 16141, CoR 16142
Standards (3)	:	Co 86032, CoC 671, Co 09004
Design	:	Randomized Block Design
Replications	:	Three
Plot size	:	Gross: 6m x 6r x 1.2 m Net : 5m x 4r x 1.2 m
Seed rate	:	12 buds per metre
Planting date	:	II nd fortnight of December to I st fortnight of January
Crop duration	:	12 months
Data to be recorded	:	As per Annexure – I

2. Advanced Varietal Trial – I Plant

Entries(15)	:	Co 14002, Co 14004, Co 14012, Co 14016, Co 14027, Co 14030, Co 14032, CoN 14073, CoSnk 14102, CoSnk 14103, CoT 14367, CoTl 14111, CoVC 14062, MS 14081, MS 14082
Standards (3)	:	Co 86032, CoC 671 and CoSnk 05103
Design	:	Randomized Block Design
Replications	:	Three
Plot size	:	Gross: 6m x 8r x 1.2 m Net : 5m x 6r x 1.2 m
Seed rate	:	12 buds per metre
Planting date	:	II nd fortnight of December to I st fortnight of January
Crop duration	:	12 months
Data to be recorded	:	As per Annexure – I

3. Advanced Varietal Trial – II Plant

Entries (17)	:	Co 13002, Co 13003, Co 13004, CoN 13072, CoSnk 13101, MS 13081, Co 13006, Co 13008, Co 13009, Co 13013, Co 13014, Co 13018, Co 13020, CoN 13073, CoSnk 13103, CoSnk 13106 and PI 13132
Standards (3)	:	Co 86032, CoC 671 and CoSnk 05103
Design	:	Randomized Block Design
Replications	:	Three
Plot size	:	Gross: 6m x 8r x 1.2 m Net : 5m x 6r x 1.2 m
Seed rate	:	12 buds per metre
Planting date	:	II nd fortnight of December to I st fortnight of January
Crop duration	:	12 months
Data to be recorded	:	As per Annexure – I

4. Advanced Varietal Trial – Ratoon

Entries (17)	:	Co 13002, Co 13003, Co 13004, CoN 13072, CoSnk 13101, MS 13081, Co 13006, Co 13008, Co 13009, Co 13013, Co 13014, Co 13018, Co 13020, CoN 13073, CoSnk 13103, CoSnk 13106 and PI 13132
Standards (3)	:	Co 86032, CoC 671 and CoSnk 05103
Design	:	Randomized Block Design
Replications	:	Three
Plot size	:	Gross: 6m x 8r x 1.2 m Net : 5m x 6r x 1.2 m
Ratooning date	:	After the harvest of I st Plant Crop
Crop duration	:	11 months
Data to be recorded	:	As per Annexure – II

SEED MULTIPLICATION

I. Multiplication of IVT (2018-19) entries at the centres: The following entries will be multiplied at the centres during 2019-20 for inclusion in AVT-I Plant in 2020-21.

Entries (26): Co 14005, Co 15002, Co 15005, Co 15006, Co 15007, Co 15009, Co 15010, Co 15015, Co 15017, Co 15018, Co 15020, Co 15021, CoVC 15061, CoVC 15062, CoVC 15063, CoVC 15064, CoN 15071, CoN 15072, CoSnK 15101, CoSnk 15102, CoSnk 15103, CoSnk 15104, CoVSI 15121, VSI 15122, PI 15131, PI 15132

II. Multiplication of pre-zonal entries

The following entries accepted in the group meet of AICRP(S) held at ICAR-SBI, Coimbatore in 2017 are under multiplication at ICAR-Sugarcane Breeding Institute, Coimbatore and Central Sugarcane Research Station, Padegaon. On prior intimation, the following centers should depute their staff and lift the material for one year multiplication in 2019-20

ICAR- Sugarcane Breeding Institute, Coimbatore (Multiplication centre):

Belagavi, Mandya, Perumalapalle, Powarkheda, Pugalur, Rudrur, Sameerwadi, Sirugamani and Thiruvalla.

CSRS, Padegaon (Multiplication centre):

Akola, Basmathnagar, Kolhapur, Navsari, Pravaranagar, Pune, Raipur and Sankeshwar.

Entries (20): Co 17001, Co 17002, Co 17003, Co 17004, Co 17005, Co 17006, Co 17008, Co 17009, Co 17010, Co 17012, Co 17013, Co 17014, CoVC 17061, CoN 17071, CoN 17072, MS 17081, MS 17082, CoVSI 17121, CoT 17366, CoT 16366

III. Seed multiplication of new entries

The following entries were accepted in the biennial workshop of AICRP(S) held at UAS, Bengaluru in 2018. The concerned breeders are requested to supply two sets of seed material of the accepted entries; one set to ICAR-SBI, Coimbatore and the other set to CSRS, Padegaon for one year multiplication in 2019-20.

Entries (15): Co 18001, Co 18002, Co 18003, Co 18009, Co 18012, Co 18013, Co 18024, CoVC 18061, CoN 18071, CoN 18072, CoVSI 18121, CoT 18366, CoT 18367, CoT 18368, CoT 18369

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

Seed Multiplication: The following seed materials were supplied by ICAR- Sugarcane Breeding Institute, Coimbatore to the respective centres for multiplication during the year 2019-20.

Evaluation of ISH and IGH clones:

Participating centres: Sankeshwar, Pune, Lucknow, Karnal, Motipur, Pantnagar and Pusa

Entries (30): 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

Evaluation of near commercial hybrids:

Participating centres:

Drought: Sankeshwar, Anakapalle, Lucknow

Water logging: Motipur, Pusa, Pantnagar

Drought tolerant clones (8): Co 09022, Co 12029, Co 13034, Co 14034, Co 15023, Co 15024, Co 15026, Co 15027

Water logging tolerant clones (18): Co 99006, 96 WL 1206, WL 10-20, 99 WL 1028, WL 09-965, WL 09-678, WL-10-24, WL-10-62, WL-10-85, WL-10-3, WL-10-18, WL-10-83, WL-10-105, WL 11-2263, WL 11-2534, WL 12-509, WL 12-182, WL 12-300

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**Characters on which data to be recorded in Initial Varietal Trial (IVT)
and Advanced Varietal Trial (AVT) – Plant crops**

Crop: Sugarcane

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. Number of millable canes (thousand/ha) after 10 months and 12 months at harvest
6. Stalk length (cm) after 8, 10 and 12 months at harvest
7. Stalk diameter (cm) after 8, 10 and 12 months at harvest
8. Single cane weight (kg) after 8, 10 and 12 months at harvest
9. Brix % in juice at 8, 10 and 12 months
10. Sucrose % in juice at 8, 10 and 12 months
11. Purity % at 8, 10 and 12 months
12. CCS % at 8, 10 and 12 months
13. Extraction % after 10 and 12 months at harvest
15. Fibre % after 10 and 12 months at harvest
16. Pol % cane after 10 and 12 months at harvest
17. Cane yield (t/ha) after 12 months at harvest
18. CCS t/ha after 12 months at harvest
19. Jaggery quality after 10 and 12 months at harvest (if facility available)
20. 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

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Characters on which data to be recorded in ratoon crop

Advanced Varietal Trial (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 270 days and 330 days at harvest
 4. Stalk length (cm) after 270 days and 330 days at harvest
 5. Stalk diameter (cm) after 270 days and 330 days at harvest
 6. Single cane weight (kg) after 270 days and 330 days at harvest
 7. Brix % after 270 days and 330 days at harvest
 8. Sucrose % in juice after 270 days and 330 days at harvest
 9. Purity % after 270 days and 330 days at harvest
 10. CCS % after 270 days and 330 days at harvest
 11. Fibre % after 270 days and 330 days at harvest
 12. Pol % cane after 270 days and 330 days at harvest
 13. Cane yield (t/ha) after 330 days at harvest
 14. CCS t/ha after 330 days at harvest
 15. Extraction % after 270 days and 330 days at harvest
 16. Jaggery quality after 270 days and 330 days at harvest (if facility available)
 17. Jaggery yield (t/ha) after 270 days and 330 days at harvest (if facility available)