

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

**Technical Programme for the year 2018-2019
Peninsular Zone**

B. II - Zonal Varietal Trial

Centres(18): Akola, Basmathnagar, Coimbatore, Kolhapur, Mandya, Navsari, Padegaon, Perumalapalle, Powarkheda, Pravaranagar, Pune, Pugalur, Kawardha (Raipur), Rudrur, Sameerwadi, Sankeshwar, Sirugamani and Thiruvalla.

1. Initial Varietal Trial

Entries (26) : 1. Co 14005 2. Co 15002
3. Co 15005 4. Co 15006
5. Co 15007 6. CoSnK 15101
7. CoSnk 15102 8. CoVSI 15121
9. Co 15009 10. Co 15010
11. Co 15015 12. Co 15017
13. Co 15018 14. Co 15020
15. Co 15021 16. CoN 15071
17. CoN 15072 18. CoSnk 15103
19. CoSnk 15104 20. CoVC 15061
21. CoVC 15062 22. CoVC 15063
23. CoVC 15064 24. PI 15131
25. PI 15132 26. VSI 15122

Standards (4) : 27. Co 86032 28. CoC 671 29. CoSnk 0510330 Co 85004

Design : Alpha design

Replications : Two

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 : IInd fortnight of December to Ist fortnight of January

Crop duration : 12 months

Data to be recorded: As per Annexure - I

2. Advanced Varietal Trial – I 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

3. Advanced Varietal Trial – II Plant

Entries (8)	:	Co 12007, Co 12008, Co 12009, Co 12012, Co 12019, Co 12024, CoM 12085 and VSI 12121
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 (8)	:	Co 12007, Co 12008, Co 12009, Co 12012, Co 12019, Co 12024, CoM 12085 and VSI 12121
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 (2017-18) entries at the centres: The following entries will be multiplied at the centres during 2018-19 for inclusion in AVT-I Plant in 2019-20.

Entries : 37

Co 14002, Co 14003, Co 14004, Co 14006, CoN 14071, CoN 14072, CoSnk 14101, CoSnk 14102, CoT 14366, CoT 14367, MS 14081, MS 14082, Co 13021, Co 13022, Co 14008, Co 14009, Co 14012, Co 14016, Co 14022, Co 14023, Co 14025, Co 14026, Co 14027, Co 14030, Co 14031, Co 14032, CoN 14073, CoN 14074, CoSnk 14103, CoTI 14111, CoTI 14112, CoVC 14061, CoVC 14062, PI 14131, PI 14132, VSI 14121 and VSI 14122 .

II. Multiplication of pre-zonal entries

The following entries accepted in the annual workshop of AICRP(S) held at VSI, Pune in 2016 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 2018-19

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

Mandya, Perumalpal, Powarkheda, Pugalur, Rudrur, Sameerwadi, Sirugamani and Thiruvalla.

CSRS, Padegaon (Multiplication centre):

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

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

Shortage seed material of CoT 16366 was reported at CSRS, Padegaon. This entry will be multiplied at both CSRS, Padegaon and ICAR-SBI, Coimbatore along with 17 series during the year 2018-19 and supplied to the centres during the year 2019-20.

III. Seed multiplication of new entries

The following entries were accepted in the Group Meet, AICRP(S) held at TNAU, Coimbatore in 2017. 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 2018-19.

Entries (19): 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

**LPHA DESIGN of twenty six entries and four standards
(Total = 30) of IVT in Peninsular Zone (2018-19)**

Layout plan for Initial Varietal Trial of Peninsular Zone

Randomized Layout Alpha design

REPLICATION 1										
Block 1	24	27	1	30	17	13	5	11	8	21
Block 2	4	16	10	20	7	29	15	3	23	26
Block 3	6	19	14	12	22	18	25	28	9	2

REPLICATION 2										
Block 1	30	9	21	24	15	3	18	6	12	27
Block 2	26	23	14	8	29	11	2	17	20	5
Block 3	10	25	19	28	22	7	13	16	4	1

Name of the Entry and serial number :

S. No	Entry	S.No	Entry	S. No	Entry
1	Co 14005	11	Co 15015	21	CoVC 15062
2	Co 15002	12	Co 15017	22	CoVC 15063
3	Co 15005	13	Co 15018	23	CoVC 15064
4	Co 15006	14	Co 15020	24	PI 15131
5	Co 15007	15	Co 15021	25	PI 15132
6	CoSnK 15101	16	CoN 15071	26	VSI 15122
7	CoSnk 15102	17	CoN 15072	27	Co 86032
8	CoVSI 15121	18	CoSnk 15103	28	CoC 671
9	Co 15009	19	CoSnk 15104	29	CoSnk 05103
10	Co 15010	20	CoVC 15061	30	Co 85004

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

Seed Multiplication:

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

The following 30 ISH/IGH clones are under multiplication at ICAR - Sugarcane Breeding Institute, Coimbatore during the year 2017-18. All the participating centres should depute their staff to lift the material for one year multiplication during the year 2018-19

S.No	Clone	S.No	Clone
1	ISH 501	16	ISH 554
2	ISH 502	17	ISH 558
3	ISH 512	18	ISH 564
4	ISH 513	19	ISH 567
5	ISH 516	20	ISH 584
6	ISH 519	21	ISH 585
7	ISH 524	22	ISH 587
8	ISH 526	23	ISH 590
9	ISH 528	24	ISH 594
10	ISH 534	25	IGH 806
11	ISH 535	26	IGH 816
12	ISH 536	27	IGH 823
13	ISH 542	28	IGH 829
14	ISH 545	29	IGH 833
15	ISH 548	30	IGH 834

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