

**Group Meeting of
ICAR - All India Coordinated Research Project on Sugarcane
held at the Tamil Nadu Agricultural University, Coimbatore (Tamil Nadu)
during September 22 & 23, 2017**

The Group Meeting of the ICAR - All India Coordinated Research Project on Sugarcane was held at the Tamil Nadu Agricultural University, Coimbatore during September 22 & 23, 2017. On this occasion, Dr. K. Ramasamy, Vice-Chancellor, TNAU, Coimbatore was the Chief Guest. The opening session was chaired by Dr Bakshi Ram, Director, ICAR-SBI, Coimbatore, which began with a welcome note by Dr M Maheswaran, Director of Research, TNAU, Coimbatore. Dr SK Shukla, Project Coordinator (S) presented the Coordinator's Report. He emphasized the impact of the sugarcane varieties in increasing the sugarcane and sugar production in the country. The PC (S) further narrated the contribution of improved sugarcane varieties developed under AICRP on Sugarcane for recording all time high sugar production (87.5 lakh tones) in Uttar Pradesh during 2016-17. He stressed upon the need of quick seed multiplication of improved varieties through standard methodology and endorsement of these varieties by the State's cane Departments for commercial cultivation in the respective states.

Dr K. Ganeshmurthy, Director, Centre for Plant Breeding & Genetics, TNAU, Coimbatore and Dr V Ravi, Director, Tamil Nadu Rice Research Institute, Aduthurai also addressed the participants. Dr Bakshi Ram, on his Chairman's remarks highlighted the impact of early maturing varieties in the National economy. He expressed concern on red rot and said that it could be a serious concern on wide adoption of early maturing varieties. Dr C R Anand Kumar, Registrar, TNAU, Coimbatore highlighted the genotype screening separately for juice, sugar and jaggery production. The recommendations/Action points which emerged out after detailed discussion are as under for necessary compliance by all concerned as indicated against each point:



Recommendation/Action Points

I. Crop Improvement

1. In order to avoid confusion in the seed chain, nomenclature allotted by AICRP(S) during the workshop for the entries must be used in the state varietal trials also. Entries with assigned name, other than the AICRP(S), will not be accepted for inclusion in National Active Germplasm (NAG) and index number will not be issued.
(Action: All centers)
2. The elite clones identified at the fluff supply programme participating should be proposed for inclusion in ZVT of AICRP(S) and the slot number may be assigned. The clone might enter the state trials simultaneously retaining the same name.
(Action: All centers)
3. In peninsular zone, new proposal should be compared with both the standards CoC 671 and Co 86032 before presentation for consideration.
(Action: All centers)
4. The centers should not give the elite clones to the farmers before notification of the varieties. Supply of the seed material prior to the notification leads to the availability of non-released varieties on the farmer's field with local name which are subsequently applied for registration with different names. Care must be taken by the centers to avoid such situation.
(Action: All centers)
5. Statistical analysis must be done properly before presentation of new proposals. Any proposal with improper statistical analysis will not be considered for inclusion in ZVT.
(Action: All centers)
6. Huge discrepancy between the reports submitted by the monitoring team and the centers on the assessment of entries was observed. Care must be taken while recording the data and its proper reporting.
(Action: All centers)
7. Shortage of seed material of CoS 16366 which is under multiplication at Karnal centre was reported. The entry will be multiplied along with the 17 series and supplied to the participating centers during the year 2019-20.
(Action: Karnal centre)
8. In peninsular zone, Co 85004 will be included as additional check in IVT (2018-19) to plant them in alpha design. Hence the IVT will be planted with 26 entries and four standards during the year 2018-19.
(Action: All peninsular zone centers)

9. In East Coast Zone, Co 06030 will be included as standard in AVT-I Plant (Early) during the year 2018-19.
(Action: All east Coast Zone centers)
10. In East Coast Zone, Co 06030 will be included as standard in AVT-II Plant (Mid-late) at Anakapalle and Vuyyuru centres during the year 2018-19.
(Action: Anakapalle centre)
11. Sufficient seed materials of CoLk 15202 will be supplied by Lucknow centre to all the centers of North West Zone for direct planting in IVT (Early) during the year 2018-19. Hence all the centers of North West Zone should intimate the probable date of planting to the Lucknow centre.
(Action: Lucknow centre)
12. Lucknow centre will supply seed materials of CoLk 15205 to Muzzafarnagar centre to compensate the shortage of seed materials.
(Action: Lucknow and Muzzafarnagar centres)
13. The standard CoS 8436 will be excluded from the IVT (Midlate) trial for the year 2018-19 onwards in NWZ.
(Action: All the centres of North West Zone)
14. Shortage of seed materials was reported for CoS 15231 by Kapurthala and Uchani centres. Seed material will be supplied by Karnal to Uchani and by Shahjahanpur to Kapurthala.
(Action: Karnal, Uchani, Shahjahanpur and Kapurthala.)
15. Low germination in the seed material supplied as single bud by Shahjahanpur to Karnal centre was reported. Hence, Shahjahanpur should send the seed material as canes in future.
(Action: Shahjahanpur)
16. Shortage of seed materials of CoLk 15202 and CoLk 15205 were reported by Kota Center. On intimation of probable planting date of the trial, Lucknow centre will send the sufficient seed material.
(Action: Kota and Lucknow centers)
17. Centers should send sufficient seed materials of the new accepted entries for initial multiplication at Karnal centre in NWZ. One quintal of seed material for each entry may be sent to the centre. If sufficient seed material is not sent, the entries will be deleted in evaluation.
(Action: All centers of North West Zone)

18. Gorakhpur centre may explore the possibilities of conducting the trials on farms of nearby sugar factory. Incharge & Breeder at Gorakhpur centre may discuss with the Director, UPCSR, Shahjahanpur for necessary administrative approval.

(Action: Incharge/Breeder, SRS, Gorakhpur centre)

19. Quantity of fluff supplied does not match with the number of seedlings produced by the centers. Any failure in germination of certain cross/GC/PC should be intimated to the PI, Crop Improvement immediately. Centers may take care in raising the seedlings and the reports should be submitted to the Principal Investigator (Crop Improvement).

(Action: All fluff receiving centres)

20. Monitoring of trails may be shifted to Nov/Dec to have a realistic assessment of the performance of the entries for yield and quality traits.

(Action: PC, AICRP-S)

21. Some centers reported high number of seedlings which can be handled for evaluation. Centers can revise the number of seedlings to be handled, based on the manpower and resources available with the centre and report to the PI (Crop Improvement).

(Action: All fluff receiving centers)

22. Soft copy of the all new proposals must be sent to the PI (Crop Improvement) in advance. Details on the new entries accepted in the Group Meeting held at Coimbatore during Sep, 2017 may be sent immediately.

(Action: All centers)

23. While proposing new entries, essential traits *viz.*, cane yield (t/ha), CCS (t/ha), sucrose % juice, pol % cane and reaction to red rot (Plug and Nodal methods) may be presented. All other important traits and observations may be provided in the hard copy circulated during presentation.

(Action: All centers)

24. Many of the test entries could not qualify for identification due to poor juice quality. Hence efforts should be taken to improve the juice quality and stage of evaluation of clones in different breeding cycles to exploit the variability and selection of high sucrose clones at advanced stage.

(Action: All centres)

25. In Peninsular Zone, based on the yield and quality parameters, seventeen entries *viz.* 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 1332 were selected. Hence AVT will be conducted with 17 entries and three standards during the year 2018-19.

(Action: All centers of Peninsular Zone)

26. Genetic stocks specific to important economic traits identified by the breeding centers during the different stages of selection may be sent to the NHG for utilizing them in crossing programme.

(Action: All fluff receiving centers)

27. The centers reported to have low Parental Diversity values should increase the number of diverse parents in their hybridization programmes.

(Action: All fluff receiving centers)

28. New set of ISH and IGH clones will be evaluated for climate resilient traits *viz.*, drought and water logging. Sankeshwar, Pune, Motipur and Karnal were identified for conducting drought experiments while Motipur, Pantnagar and Pusa were identified for evaluating the clones under water logging conditions.

(Action: Motipur, Pantnagar, Pusa, Sankeshwar, Pune, Karnal)

29. Evaluation of elite clones/varieties under water logging conditions (Motipur, Pusa and Pantnagar) and drought (Sankeshwar, Anakapalle and Motipur) will be carried out to identify commercial hybrid for release of varieties for cultivation under the stress conditions.

(Action: Sankeshwar, Anakapalle and Motipur, Pusa and Pantnagar)

II. Crop Production

(i) Plant sugarcane in paired rows at 30:120 spacing preferably in first week of October in autumn season or first week of February in spring season to harness the full benefit of drip irrigation.

(ii) Place the drip laterals in between sugarcane rows. For sub-surface drip, place laterals 5 cm below the depth of sett placement.

(iii) Apply recommended dose of P and K as basal dose and 75% N for plant and first ratoon and 100% N for subsequent ratoons in 15 equal splits at weekly intervals through drip system.

(iv) While maintaining operating pressure of 1 kg/cm², and emitter discharge of 2.2 lph placed at the spacing of 30 cm, operate the pump on alternate days for the following duration:

Months	Pumping hours
March, April	1.5-2.5
May, June	3.0-4.0
July- December	1.0-2.0

(v) If farmer takes one plant and three ratoon crops with drip irrigation, he can get Rs. 30,000 per year additional income.

III. Plant Pathology

1. It was observed that varieties like CoS 8436, Co 07250, CoLk 8102, Co 89003 and Co 0238 in UP have picked up red rot, which *hitherto* remained to be free from the disease. Pathogenic behavior of the isolates from these varieties on the host differentials clearly established emergence of a new pathotype in the sub-tropical part of the country. The centers in the sub-tropical region may categorize the virulent pathotype, which can be used for screening the genotypes for red rot resistance.
2. There is an urgent need for the replacement of varieties which are succumbed to red rot like CoLk 8102, CoS 8436, Co 89003, CoSe 95422, CoS 767, CoSe 92423, CoS 07250, CoC 24 and CoV 89101 to reduce the chances of breakdown of newly introduced varieties.
3. The popular variety of North Western Zone – Co 0238 has been reported with moderate incidences of red rot in UP. To contain further spread of the disease, healthy seed program should be strictly implemented involving sugarcane pathologists. Breeder seed should be procured only from Research centres such as IISR, Lucknow, SBI-RC, Karnal and UPCS, Shahjahanpur for healthy seed production.
4. All the centers are advised to conduct experiment under PP 14 with additional new set of differentials i.e. Co 7805, CoSe 95422, Co86002, Co 86032 and CoV 92102 as suggested last year in PP14 experiment to obtain uniform results.
5. At some centers like Navsari, Pusa and Seorahi, the collection of isolates of red rot pathogen is very limited. Therefore, it is suggested that a large number of isolates from different varieties be collected to obtain the clear cut virulence pattern of the isolates.
6. To manage YLD, all the centres should take healthy seed nursery programme. In this regard, all seed nursery units should use certified virus free-seed to avoid spread of YLD and other diseases through planting materials. Virus indexing is to be made mandatory for all tissue culture-derived seedlings.
7. Multiplication of sugarcane through seedling nurseries undertaken by sugar industry/private entrepreneurs gained momentum in the tropical region. However, the quality of mother plants used for propagation is of poor quality and hence needs to be regulated with certification standards.
8. Under PP 23, only few centres conducted the experiment as per the technical program. The other centres namely Shahjahanpur, Kapurthala, Uchani, Lucknow, Seorahi, Nasari and Anakapalle should procure the required seed material this year and proceed for testing in the respective centres.
9. It is observed that sugar industry personnel are bringing varieties from unknown sources outside the country by-passing the quarantine regulations. After a long gap,

- leaf scald has been noticed in Andhra Pradesh, probably due to introduction of such varieties. The sugar industry should strongly desist from bringing materials from such sources to avoid inadvertent introduction of leaf scald and other diseases.
10. As per the recommendation of QRT, all the centres may procure 'Mechanized Sett Treatment Device' developed by SBI Coimbatore for seed nursery programme and disease management.
 11. To screen sugarcane genotypes for brown rust resistance, "leaf whorl inoculation" method is recommended.

IV. Plenary session

The following recommendations were made for taking necessary action:

1. All the centers will adhere to the name as given by the AICRP(S) while releasing and commercializing the genotypes/varieties, developed and tested through AICRP(S).
(Action: All the centres)
2. Using internet facility by the AICRP(S) centers for digitization of the data recording of AICRP(S) trails.
(Facility of the SAUs/organization may be shared by the centers)
3. A treatment on drought should be regular components in Crop Production trails of AICRP(S) and only newly released varieties should be used in the drought experiments.
(Action: P.I., Crop Production)
4. The quarantine protocol must be strictly followed while importing of varieties to tackle the issue on spread of diseases effectively in the country.
(Action: PC(S) to write concerned agencies)