TAMIL NADU AGRICULTURAL UNIVERSITY

PROCEEDINGS

31st Sugarcane Scientists Meet
May 5-6, 2023

Lead Center
Sugarcane Research Station
Tamil Nadu Agricultural University
Cuddalore – 607 001

Directorate of Research
Tamil Nadu Agricultural University
Coimbatore - 641 003

2023

PROCEEDINGS

31st Sugarcane Scientists Meet

5-6 May, 2023

The 31st Sugarcane Scientists Meet was held on 06.05.2023 at the University Seminar Hall I, TNAU, Coimbatore. Review of research projects and action taken on OFT/ action plan was made by the concerned Technical Directors in the concurrent sessions held on 05.05.2023. During the concurrent sessions, the Director of Research, TNAU, Coimbatore interacted with the concerned scientists in each Directorate and offered critical remarks and suggestions.

Dr. V. Geethalakshmi, Vice Chancellor, TNAU rendered the opening remarks. It was suggested to popularize of recently released sugarcane varieties *viz*., CoG 7 and CoC 13339 among the farmers and millers. Madam insisted to organize more number of demonstrations and trainings for the dissemination of improved varieties and technologies. It was suggested to analyse reasons for the reduction in the area under sugarcane. Madam urged the scientists to develop sugarcane varieties with high sucrose content and varieties suited for mechanical harvesting.

Dr. M. Raveendran, Director of Research insisted to strengthen the seed supply programme to ensure timely supply of sugarcane setts to the farmers and factories. The high sugar clones identified at the stations may be shared among themselves for further evaluation at different agro-climatic regions. He had also highlighted the importance of studying the host-pathogen interaction to understand the mechanism and donors for developing varieties resistant to red rot disease.

The highlights of the research achievements, action taken on the recommendations of the previous meet and action plan for the year 2023-24 with respect to crop improvement, crop management, natural resource management and crop protection were presented by **Dr. R. Ravikesavan**, Director, CPBG, **Dr. S. Pazhanivelan,** Director (i/c), Crop Management, **Dr. P. Balasubramaniam,** Director, NRM and **Dr. G. Karthikeyan,** Professor and Head, Department of Plant Pathology, CPPs, TNAU, Coimbatore.

Dr. K. Subrahmaniyan, Director, TRRI proposed formal vote of thanks.

The proceedings of the 31st Sugarcane Scientists Meet are furnished under the following headings:

I. CROP IMPROVEMENT

A. Cultures identified for/ OFT/ART/MLT
B. Action Plan (2023-2024)
C. Research Projects and remarks

II. CROP MANAGEMENT/NRM

A. Technologies for adoption/OFT
B. Action Plan (2023-24)
C. Research Projects and remarks

III. CROP PROTECTION

A. Technologies for adoption OFT/Information
B. Action Plan (2023-24)
C. Research Projects and remarks

IV. REMARKS

V. LISTS OF PARTICIPANTS

I. CROP IMPROVEMENT

A. Entries for variety release proposal/ART/OFT/MLT (2021-2022)

A1. Cultures identified for OFT 2023-24

G 2008-19 a derivative of CoV92102 obtained through General Cross has recorded a mean cane yield of 126.68 t/ha from 20 trials. The CCS for the clone is 13.17 % and the sugar yield is 17.10 t/ha. The maturity falls on midlate category. The clone was found highly suitable for salt affected soils with good for jaggery production. It recorded high yield and good ratooning ability and MR to red rot. The culture is recommended for OFT in different sugar mills during 2023. The OFT has to be conducted with checks Co 86032 and CoC 13339.

A1. Cultures identified for ART 2023-24

The Plant II and Ratoon trials for the below mentioned entries will be conducted during the year 2023-24 in different sugar mill areas.

S. No.	Clone	Parentage	Red rot score
1.	C 2015-095	CoV 89101 x ISH 69	MR
2.	G 11035	83 R 23 (GC)	MR
3.	Co 15020	Co 86032 x Co 86011	R (Nodal)
	Standards: CoC 13339, CoG 6, CoG 7, TNAU Si 8, Co 86032 and Co 11015		

The traits to be recorded are listed below

1. Number of millable Cane ('000/ha) at harvest,
2. Stalk length (cm) at harvest
3. CCS (%) at 10^{th} month and 12^{th} month
4. Cane yield (t/ ha) at harvest
5. Sugar yield (t/ha) at harvest

A2. Cultures for Multi Location Trial 2023-24

The cultures evaluated under MLT- Plant I crop during 2022-23 will be evaluated as Plant II and ratoon trial during 2023-24. The details of the culture are

Entries (7)	:	C 16122, C 16337, C 16338, Co 13003, Co 17001, G 14036 and Si 14049
Standards (5)	:	Co 86032, Co 11015, CoC 13339, CoV 09356 and CoG 7
Locations (4)	:	Cuddalore, Sirugamani, Melalathur and SBI, Coimbatore
Plot size	:	5 m row length x 5 rows x 1.2 m row space
Replication	:	Three
Time of planting	:	Jan-Feb 2022
Spacing	:	12 buds per metre with a row spacing of 1.2m
Traits to be recorded	:	• Germination % at 30 DAP • Number of millable Cane ('000/ha) at harvest • Single cane weight (kg) at harvest • Cane yield (t/ ha) at harvest

		• CCS (%) at 8th, 10th month and 12th month • Sugar yield (t/ha) at harvest
Scientist's in-charge	:	1. Dr. N.A. Saravanan, Asst. Professor (PBG), SRS, Melalathur 2. Dr. T. Thirumurugan, Assoc. Professor (PBG), SRS, Cuddalore 3. Dr. M. Sakila, Asst. Professor (PBG), AC&RI, Trichy 4. Scientist designated by the Director, ICAR-SBI, Coimbatore

The following cultures are new nominations which have to be adequately multiplied during 2023-24 and MLT Plant I trial will be conducted during Jan-Feb 2024.

S. No.	Clone number (culture)	Parentage	Maturity group	Red rot rating	Cane yield (t/ha)	CCS (%)	Sugar yield (t/ha)
1.	C 17017	CoV 89101 x CoS 93278	Mid-late	R	137.1	12.9	17.8
2.	C 17043	CoV 89101 x Co 1148	Mid-late	R	131.5	12.7	16.7
3.	C 17122	Co 98006 x Co 0233	Mid-late	R	126.0	12.7	16.0
4.	G 15060	GC of Co 86032	Early	MR	130.8	13.0	16.8
5.	Si- 2015- 03	2003-03 GC	Early	MR	145.0	13.2	19.1
6.	Si-2015-103	2003-03 GC	Early	MR	148.0	12.6	18.7
7.	Co 18001	Co 07015 x Co 99008	Mid-late	MR	155.2	14.08	21.9
8.	Co 15017	Co 94012 x Co 86011	Mid-late	MR	135.2	15.47	21.4

Locations (4)	:	Cuddalore, Sirugamani, Melalathur and ICAR-SBI, Coimbatore
Standards (5)	:	Co 86032, Co 11015, CoC 13339, CoV 09356 and CoG 7
Plot size	:	5 m row length x 5 rows x 1.2 m row space
Replication	:	Three
Time of planting	:	Jan-Feb 2022

A3. New clones accepted for AICRP(S) – ZVT – 2022-23

S. No.	Clone number (culture)	Parentage	Maturity group	Red rot rating	Cane yield (t/ha)	CCS %	Sugar yield (t/ha)
1.	C 17017	CoV 89101 x CoS 93278	Mid-late	R	137.1	12.9	17.8
2.	C 17043	CoV 89101 x Co 1148	Mid-late	R	131.5	12.7	16.7
3.	C 17122	Co 98006 x Co 0233	Mid-late	R	126.0	12.7	16.0
4.	G 10045	C0 8371 x Co 86002	Early	MR	126.63	12.27	15.55

B. Action Plan (2023 – 2024)

Action Plan	Centre	Activity
Action plan 1 Developing high yield and high sugar clones Induced mutagenesis in high sugar varieties for red rot resistant clones	SRS, Melalathur	2023-24 The twenty-one identified high sugared mutants of Co 86032 will be screened for phenotypic variability and red rot reaction The irradiated clones at M_1 generation of Co11015 and CoC 671 will be screened critically for increased sugar content and phenotypic variation than the parental clones

	SRS, Cuddalore	The identified mutants will be screened for red rot
Action plan 2 Breeding for climate resilient clones Developing clones tolerant to prolonged water logging	SRS, Sirugamani	2023-24 The identified clone Si 2015-047 will be reconfirmed for water logging tolerance with 10 cm depth water for three months from formative to maturity phase. The adaptive mechanism of this clone will be studied
	SRS, Cuddalore	The clones from the clonal nursery will be screened for water logging during grand growth phase
	SRS, Melalathur	Early-stage clones will be screened in salt affected/ tannery effluent soils
Action plan 3 Development of high sugar somaclones of CoC 671 with red rot resistance	SRS, Cuddalore	2023-24 The 100 somaclones of CoC 671 developed at Coimbatore will be evaluated for phenotypic variability and red rot disease
Action Plan 4 Inter-generic hybridization between *Erianthus* and *Saccharum* spp. for development of pre breeding population for increasing cane yield in plant and ratoon crop, bio mass content and wider adaptability to varied climatic conditions	SRS, Sirugamani	2023-24 The seedlings obtained from *Erianthus* and other inter specific crosses will be evaluated for hybrid confirmation
	SRS, Sirugamani & Cuddalore	2023-24 Fresh crosses will be effected with different elite clones based on synchronization in flowering
Action Plan 5 Genome Editing in Sugarcane for Red Rot Resistance	CPMB, CPPS, SRS, CDL	2023-24 Red rot disease susceptible genes will be identified from database and guide RNAs will be designed for knock out

C. Review of research projects on Sugarcane and remarks on the ongoing university research projects/AICRP/Externally funded projects

C1. Research Projects on Sugarcane

Discipline/Station	University Research Projects	AICRP project	Externally Funded Project	Total
SRS, Cuddalore	1	1	-	2
SRS, Melalathur	1	-	-	1
SRS, Sirugamani	2	-	-	2
DCPBG, TNAU, CBE	1	-	1	1
CPMB&B, Coimbatore	1	-	-	1
Total	**6**	**1**	**-**	**7**

C2. Remarks of ongoing URPs / AICRPs in Crop Improvement

S. No.	Project No. and Title	Project leaders	Duration	Remarks
University Research Projects (URPs)				
1.	CPBG/CDL/PBG/SUG/2020/ 001 Evaluation and identification of high yielding and quality varieties with inbuilt red rot resistance to cater the needs of Tamil Nadu cane farmers and sugar mills	PI: Dr. D. Sassikumar, Prof. (PBG) & Head, SRS, Cuddalore Co PI: Dr. T. Thirumurugan Assoc. Prof. (PB&G) 2.Dr. S. Thangeswari, Asst. Prof. (Pl. Patho.)	Apr 2020-Mar 2025	The project shall be continued. Clones with high brix identified has to be evaluated critically and superior clones are to be nominated for multi environment testing
2.	CPBG/MLT/PBG/SUG/2019/00 1 Evolution of high yielding and quality sugarcane clones with red rot tolerance	PI: Dr. N.A. Saravanan Assistant Professor (PBG) and Head, SRS, Melalathur	Dec 2019 – Nov 2024	May be continued. Mutants identified are to be confirmed for phenotypic variability with parent and red rot reaction is to be assessed. More fluff has to be evaluated and elite clones only are to be nominated
3.	CPBG/SRS/PBG/SUG/2020/001 Development of improved sugar content varieties in sugarcane through mutagenesis.	PI: Dr. M. Sakila, Asst. Professor (PBG), SRS, Sirugamani	Dec 2020 – Dec 2025	May be continued. Critical evaluation of M_1V_3 population for identification of mutants with high sugar recovery and earliness.
4.	CPBG/SRS/PBG/SUG/2021/002 Evolving mid-late maturing sugarcane varieties with resistance to red rot and smut disease suitable for Cauvery delta zone.	PI: Dr. M. Sakila, Asst. Professor (PBG), SRS, Sirugamani	Feb 2021 - Jan 2026	The project shall be continued. Clones withstanding early drought and late water logging may be identified
5.	CPBG/CBE/PBG/SUG/ 2020/001 Maintenance of hybridization garden of Sugarcane with core germplasm	PI: Dr. Asish K Binodh Asst. Professor (PBG) CPBG, Coimbatore	August, 2020 - July, 2025	May be continued. Hybridization garden established at PBS, TNAU, Coimbatore may be strengthened with more parental clones and required facilities
6.	CPMB/CBE/PMBB/SUG/2021/0 01 Development of somaclonal variants and mutants through invitro mutagenesis for drought tolerance in sugarcane	PI: Dr. R. Gnanam Professor and Head Department of PMBB, CPMB&B, TNAU, CBE	June, 2021- May 2023	May be closed. The mutants if any regenerated may be shared to SRS, Cuddalore for further Field evaluation.
AICRPs				
7.	AICRP/PBG /CUD/SUG /025 AICRP on Sugarcane	Dr. T. Thirumurugan, Asst. Professor (PBG)	Continuous	The project shall be continued.

II. CROP MANAGEMENT

A. Technologies for Adoption / OFT

For Adoption

1. Effective weed management techniques to address creepers in the ratoon crop

Application of PE herbicide (Atrazine @1.00 kg/ha) and PoE herbicide (Metribuzin @ 0.75 kg/ha) at 60 DAP followed by detrashing and mulching at 150th & 210th DAP performed better by recording increased cane yield (132.19 t/ha) and BCR (2.40) with higher weed control efficiency (84.0%).

2. Effective technology capsule for sugarcane ratoon management.

- Trash incorporation and decomposition
- Stubble shaving
- Off barring/De-ridging
- Gap filling with seedlings
- Excess nitrogen application (25%)
- Early weeding
- Foliar application of $FeSO_4$ (0.5%) + Urea (1%) at 15 days interval after notification of iron chlorosis
- Split application of N and K fertilizers at 25, 50 & 75 DAR

Treatments	Plant height (m)	Millable canes (`000/ha)	No. of internode	Internode length (cm)	Girth (cm)	Single cane weight (kg)	Cane yield (t/ha)	Net income (Rs/ha)	BCR
T_1: Technology capsule for ratoon	2.04	88.20	18.0	15.17	2.63	1.68	111.0	2,05,695	2.69
T_2: Conventional ratoon tech	1.92	77.31	16.0	14.75	2.55	1.46	92.0	1,02,069	2.41

Finding:

Higher cane yield (111 t/ha), net income (Rs. 2,05,695/ha) and BCR (2.69) were recorded with the application of technology capsule for ratoon management in sugarcane

OFT (2023-2024)

Sett priming with ethephon for extended storage and production of disease-free settlings

Objective:

To assess sugarcane bud chip encapsulation with biodegradable polymers along with ethephon to standardize the packing and shelf life of bud chip

Lead centres:

1. **SRS, Cuddalore**
   Tmt. R. Anitha, Assistant Professor (Crop Physiology)
2. **Oilseeds Research Station, Tindivanam**
   Dr. R. Brindavathy, Associate Professor (Agrl. Microbiology)

Sub centres & Scientists in-charge

1. ADAC & RI, Trichy : Dr. V. Dhanushkodi**,** Asst. Professor (SS & AC)
2. AC & RI, Vazhachanur : Dr. K. Ananthi, Asst. Professor (Crop Physiology)
3. AC & RI, Eachangkottai : Dr. C. Tamilselvi, Asst. Professor (Crop Physiology)
4. AC & RI, Madurai : Dr. P. Christy Nirmala Mary, Professor (SS&AC)

Treatments

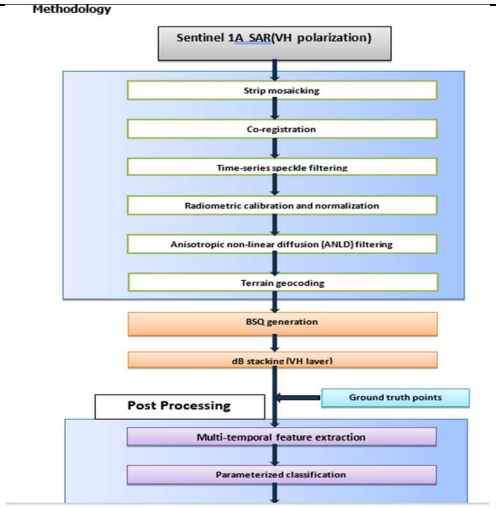
T_1: Control: Follow normal planting

T_2: Sett treatment with ethephon 0.01% and dipped in wax and keep it in vacuum bag inside the box for 4 days and take planting on 5^{th} day

Observations:

Germination percentage (%), shoot length (cm), root length (cm), seedling vigour, SPAD index, specific leaf area, specific leaf weight and microbial populations

B. ACTION PLAN FOR IDENTIFIED THEMES

CROP MANAGEMENT				
Theme No. 1		**Creating precise database on sugarcane area** **Duration: 2022-2024**		
Theme Leader		Dr. S. Pazhanivelan, Director (CWGS), TNAU, Coimbatore		
S. No.	**Activity**	**Name of the scientist(s) and centre**	**Details of the experiment**	**Deliverables & Remarks**
1.	To create database on sugarcane area	**Coordinating Centre: CWGS** Dr. S. Pazhanivelan, Director, CWGS, TNAU, Coimbatore **Implementing centre:** **SRS, Melalathur** Dr. N.A. Saravanan, Asst. Prof. & Head **SRS, Cuddalore** Dr. M. Jayachandran, Prof. (Agron.), SRS, CDL **SRS, Sirugamani** Dr. Murali Arthanari, Professor and Head, SRS, Sirugamani	 Ground truth collection in Thiruvannamalai, Erode and Namakkal districts are in progress. Precise area statistics for rest of the area will be generated using high resolution planet datasets.	Development of sugarcane database **To be continued**

Theme No. 2		**Dissecting the physiological mechanism and adaptive response of sugarcane varieties to waterlogging**		
Theme Leader		Tmt. R. Anitha, Assistant Professor, (CRP), SRS, Cuddalore **Duration: 2022-2024**		
S. No.	**Activity**	**Name of the scientist(s) and centre**	**Details of the experiment**	**Deliverables & Remarks**
1.	To study the physiological and adaptive mechanisms in sugarcane under flooding stress	**Lead Centre** **SRS, Cuddalore** Tmt. R. Anitha Asst. Prof. (CRP) SRS, Cuddalore **Observations to be recorded** Tiller population, Millable cane population, LAI, Proline content, Catalase activity, Cane yield, Sugar yield, CCS %	Experiment trial 1: non-waterlogged Experiment trial 2: Waterlogged **Standards** Tolerant variety- Co 62175 Susceptible variety- Co 86032 **Sugarcane varieties** CoC 13339, CoG7 **Pre-released clones** C 15020, C 2015-021, C 2015-006, C 2015-095, Si 2014-047, G11035 Design: RBD Replication: Three	The adaptive mechanisms of flooding stress tolerance in sugarcane will be explored **To be continued**

Theme No. 3		Optimization of economic returns in sugarcane based intercropping systems with sustainable sugarcane initiative (SSI) technologies		
Theme Leader		Dr. M. Jayachandran, Professor (Agronomy), SRS, Cuddalore **Duration: 2022-2025**		
S. No.	**Activity**	**Name of the scientist(s) and centre**	**Details of the experiment**	**Deliverables & Remarks**
1.	To evaluate the effect of intercropping under wider row spacing on sugarcane productivity **Observations to be recorded** Biometric observations Yield parameters Quality parameters Initial and post-harvest NPK analysis Work out crop indices Work out economics	**SRS, Cuddalore** Dr. M. Jayachandran, Prof. (Agronomy), SRS, Cuddalore **Implementing Centres** **SRS, Sirugamani** Dr. K. Annadurai, Professor (Agronomy), SRS, Sirugamani **SRS, Melalathur** Dr. N.A. Saravanan, Asst. Prof. and Head, SRS, Melalathur	**Treatments:** **Main Plots: (Four intra row spacing)** S_1 - 0.60 m spacing between two plants S_2 - 0.45 m spacing between two plants S_3 - 0.30 m spacing between two plants S_4 - 0.30 m spacing between two plants with zigzag planting **Sub plot: (Four intercrops)** I_1 - Blackgram (check), I_2 - Panivaragu I_3 - Kudiraivali I_4 - Tenai Design: Split Plot Design Replication: Three	1.Effective intercropping system on sugarcane based cropping system 2. Explore crop residue management in sugarcane 3. Economically viable intercrop explore to double the farmers income **To be continued**

Theme No. 4		Drone application of liquid formulation sugarcane boosters		
Theme Leader		Dr. N. Sritharan, Assoc. Professor (CRP), TNAU, Coimbatore **Duration: 2023-2025**		
S. No.	**Activity**	**Name of the scientist(s) and centre**	**Details of the experiment**	**Deliverables & Remarks**
1.	To standardize the spray dynamics and develop SOPs for Drone spraying of liquid formulation sugarcane booster	**Implementing centres:** **TNAU, Cbe** Dr. N. Sritharan Assoc. Prof. (CRP) **SRS, Cuddalore** Tmt. R. Anitha, AP (CRP) **SRS, Sirugamani** Dr. S. Nithila, Assoc. Prof. (CRP)	T_1: Control T_2: TNAU Sugarcane booster @ 1, 1.5 and 2 kg/ac T_3: 1% liquid sugarcane booster (60, 90 & 150 DAP) T_4: 2% liquid sugarcane booster (60, 90 & 150 DAP) T_5: 3% liquid sugarcane booster (60, 90 & 150 DAP) T_6: 4% liquid sugarcane booster (60, 90 & 150 DAP) T_7: 5% liquid sugarcane booster (60, 90 & 150 DAP)	Liquid sugarcane booster with drone application will be explored **To be continued**

List of projects

Centres	Action Plan		URP	
	AGR	CRP	AGR	CRP
CWGS, Coimbatore	1	-	-	-
SRS, Cuddalore	1	3	2	1
SRS, Sirugamani				-
TOTAL	5		3	

C. Ongoing URPs /AICRPs / Externally Funded Projects

S. No.	Project No. & Title	Scientists	Remarks
1.	**TRRI/CDR/AGR/SUG/2023/001** Optimisation of economic returns in sugarcane based intercropping systems with SSI technologies (January 2023 to December 2026)	Dr. M. Jayachandran Prof. (Agronomy) SRS, Cuddalore. Dr. K. Annadurai Prof. (Agronomy) SRS, Sirugamani Dr. N. A. Saravanan Asst. Prof. (PBG), SRS, Melalathur	The project to be continued
2.	**TRRI/CDR/AGR/SUG/2023/002** Studies on diversifications option in sugarcane based cropping systems for resource conservation and doubling farmer's income in Tamil Nadu. (April 2023 to March 2026)	Dr. M. Jayachandran Prof. (Agronomy) SRS, Cuddalore Tmt. R. Anitha Asst Prof. (CRP), SRS, Cuddalore	The project to be continued
3.	**DCM/CDL/CRP/SUG/2021/001** Studies on the effect of nutrient solution, growth promoting hormones and beneficial soil microbes on population of cane, physiology and yield of sugarcane (Feb 2022 to April 2024)	Tmt. R. Anitha Asst. Prof. (CRP), SRS, Cuddalore	The project to be continued

II. NATURAL RESOURCE MANAGEMENT

A. Technologies for Adoption/OFT/Information

A1. For Adoption – Nil

A2. For On Farm Trials

- **Evaluation of TNAU Trash-D for *in-situ* sugarcane trash decomposition in ratoon cane**

  Results of the OFT are recommended for adoption after a mass level demonstration

A2. For Information

- **Evaluation of Organomineral Phosphatic Fertilizer on Soil Phosphorus Availability and Sugarcane Yield**

  Pressmud enriched with rock phosphate (RPEPM) in the ratio of 10:1 and an improvement in total phosphorus content (2.56%) when compared with pressmud (1.32%). Among the organomineral phosphatic fertilizer, 100% of P as pressmud enriched with RP + PSB @ 2 kg ha^{-1} recorded maximum plant height (54.30 cm) on 45 DAP and higher number of tillers per hill (5.21) on 120 DAP.

B. New Action Plan Project for 2023-2024

1. **Assessment of Nutrient Use Efficiency of TNAU-WSF in sugarcane under drip fertigation**

   Objectives

   To assess the TNAU-WSF on growth, yield and NUE of Sugarcane and its effect of soil quality under drip fertigation

Treatments

1. SRS, Cuddalore

T_1: 100 % RDF as drip Fertigation (Conventional fertilizers) (CF-275:100:112.5 kg ha^{-1})
T_2: 25 kg as TNAU WSF + remaining N & K as urea and MOP
T_3:50 kg as TNAU WSF + remaining N & K as urea and MOP
T_4: 75 kg as TNAU WSF + remaining N & K as urea and MOP
T_5: 100 kg as TNAU WSF + remaining N & K as urea and MOP
T_6: 50% RDF (CF) + TNAU-WSF (2% spray thrice at critical growth periods)

2. SRS, Melalathur

T_1: 100 % RDF as drip Fertigation (Conventional fertilizers) (CF-275:100:112.5 kg ha^{-1})
T_2: 25 kg as TNAU WSF + remaining N & K as urea and MOP
T_3:50 kg as TNAU WSF + remaining N & K as urea and MOP
T_4: 75 kg as TNAU WSF + remaining N & K as urea and MOP
T_5: 100 kg as TNAU WSF + remaining N & K as urea and MOP
T_6: 125 kg as TNAU WSF + remaining N & K as urea and MOP

T_7: 50% RDF (CF) + TNAU-WSF (2% spray thrice at critical growth periods)
T_8: 75% RDF (CF) + TNAU-WSF (2% spray thrice at critical growth periods)
T_9: 50% RDF (CF) + 0.2 % Nano urea (3 sprays) at critical growth periods
T_{10}: 75% RDF (CF) + 0.2% Nano urea (3 sprays) at critical growth periods

Design : RDB
Replication : 4

Lead Centre & Scientist In-charge
Dr. G. Sridevi,
Asst. Prof. (SS&AC), AC&RI, Coimbatore

Co-ordinating Centre –1 & Scientist In-charge
SRS, Cuddalore :
Dr. M.Jayachandran, Professor. (Agronomy)
Dr. G. Porkodi, Assistant Professor (SS & AC)

Co-ordinating Centre –2 & Scientist In-charge
SRS, Melalathur:
Dr.N.A. Saravanan, Assistant Professor (PBG)

Observations and analysis
- Soil available macro, micro nutrients status at different stages of plant growth
- Biometric observations
- Yield

2. Effect of nutrient treated setts on growth and yield of sugarcane

Objectives
To determine the effect of sugarcane sett treatment with nutrients on growth and yield of sugarcane

Treatments
T_1 : Control (Water)
T_2 : Sett treatment with 0.5 % Humic acid
T_3 : Sett treatment with 1.0% Humic acid
T_4: Sett treatment with 0.5% TNAU MN mixture
T_5: Sett treatment with 1.0% TNAU MN mixture
T_6: $T_2 + T_4$
T_7 : $T_3 + T_5$

Design : RDB
Replication : 3

Scientist In-charge
PI: Dr. G. Porkodi, Assistant Professor (SS&AC), SRS, Cuddalore
Co-PI: Dr. V. Dhanushkodi, Asst. Prof. (SS&AC), Dept. of SS&AC, ADAC&RI, Trichy

Observations and analysis

- Germination percentage
- Yield and yield attributes
- Nutrients uptake & quality
- Economics

3. Recycling of sugarcane waste for developing biodegradable pots and blocks in sustainable agriculture

Objectives

- To select an optimal sugarcane waste mixture for the production of biodegradable pots and blocks
- To evaluate the growth and yield of crop seedlings grown in sugarcane waste derived pots

Treatments

T_1 : Bagasse alone
T_2 : Sugarcane trash alone
T_3 : Pressmud alone
T_4: Bagasse + Sugarcane trash (50:50)
T_5: Bagasse + Pressmud (50:50)
T_6: Pressmud + Sugarcane trash (50:50)
T_7 : Pressmud + Sugarcane trash + Bagasse (33:33:33)
T_8 : Sugarcane trash + Bagasse + Coirwaste (33:33:33)
T_9 : Pressmud + Sugarcane trash + Coirwaste (33:33:33)
T_{10} : Pressmud + Sugarcane trash + Bagasse + Coir waste (20:20:20:20)

Design : CRD
Replication : 3

Scientist involved

Dr. M.P. Sugumaran, Professor (ENS), SRS, Cuddalore
Tmt. R. Anitha, Assistant Professor (CRP), SRS, Cuddalore
Dr. D. Sassikumar, Prof. & Head, SRS, Cuddalore

Observations and analysis

- Mechanical strength, thickness swelling, Internal bonding, water absorption, Rupture load, Biodegradability, major and minor nutrient content

C. RESEARCH PROJECTS ON SUGARCANE

a. List of Projects

PROJECTS	SS&AC	AGM	TOTAL
Action Plan/ University Research Projects	1	1	2
Total	**1**	**1**	2

Project Wise Remarks
Soil Science and Agricultural Chemistry

S. No.	Project No. & Title	Project leaders	Duration	Remarks
A.	**Action Plan / University Research Project**			
1.	**NRM/CUD/SUG/2022/ 001** Evaluation of Organo-mineral Phosphatic Fertilizer on Soil Phosphorus Availability and Sugarcane Yield	Dr. G. Porkodi, Asst. Prof. (SS&AC), SRS, Cuddalore Dr. M. Basker, Professor and Head, Dept. of SS&AC, ADAC&RI, Trichy	July 2022 to June 2025	• The salient findings may be given for information • The project may be continued
Agricultural Microbiology				
2.	**NRM/CDL/AGM/SUG/ 2021/002** Studies on the impact of 'Trash D' for *in-situ* decomposition of sugarcane trash and its impact on the yield of ratoon cane.	**Project Leaders** Dr. M.P. Sugumaran Prof. (ENS), SRS, Cuddalore Tmt. G. Porkodi, Asst. Prof. (Soil Science), SRS, CDL **Co-Project Leaders** Dr. G. Gayathry Asst. Prof. (AGM), KVK, VRI Dr. P. Kalaiselvi, Assoc. Prof. (ENS), KVK, Sandhiyur	July 2020 to June 2023	• The results of URP may be validated further.
B.	**On Farm Trials**			
1.	Evaluation of TNAU Trash-D for *in-situ* sugarcane trash decomposition in ratoon cane	**Project Leader** Dr. G. Gayathry, Asst. Prof. (AGM) **Scientists in-charge for OFT** Dr. M.P. Sugumaran, Prof. (ENS) Dr. M. Baskar, Prof. & Head (SS&AC) Dr. T. Uma Maheswari, AP. (AGM) Dr. G. Porkodi, Asst. Prof. (SS&AC) Dr. P. Kalaiselvi, Assoc. Prof. (ENS)	2021-2023	The result of the OFT are recommended for adoption after a mass level demonstration

Large Scale Demonstrations in Farmers' field during 2023 - 2024

S. No.	Title of the technology	Location and Demonstrations (Nos.)	Scientists In-charge
AGRONOMY			
1.	Effective creeper weed management techniques in ratoon sugarcane	SRS, Cuddalore (10)	Dr. M. Jayachandran
		TRRI, Aduthurai (10)	Dr. R. Nagaeswari
		SRS, Sirugamani (10)	Dr. P. Murali Arthanari
CROP PHYSIOLOGY			
2.	Sugarcane bud pre-treatment for higher bud germination	SRS, Cuddalore (10)	Mrs. R. Anitha
		SRS, Melalathur (10)	Dr. N. A. Saravanan
		KVK, Aruppukottai (10)	Dr. C. Raja Babu
3.	Silicon nutrition on sugarcane crop growth under drought condition	SRS, Cuddalore (10)	Mrs. R. Anitha
		AC&RI, Eachangkottai (10)	Dr. C. Tamilselvi
		KVK, Aruppukottai (10)	Dr. C. Raja Babu

III. CROP PROTECTION

A. Technologies for Adoption/OFT/Information

I. For information

a. Agricultural Entomology

- In fixed plot survey, the incidence of early shoot borer ranged from 5.6 to 11.6 per cent. The internode borer incidence ranged from 3.8 to 30.6 per cent. The top shoot borer incidence was 3.2 to 15.6 per cent. *Pyrilla* population was in the range of 0.05 to 1.3 no/leaf. Mealybug incidence ranged from 0.5 to 17.9 per cent. The population of coccinellids and spiders ranged from 0.07 to 0.5 and 0.4 to 2.2 per plant, respectively. The population of rove beetle ranged from 0.1 to 1.8 per plant.
- Early Shoot borer showed significant negative correlation with temperature and significant positive correlation with relative humidity, whereas internode borer showed significant negative correlation with temperature and significant positive correlation with relative humidity. Mealy bug showed significant positive correlation with temperature and significant positive correlation with relative humidity. Top shoot borer showed significant negative correlation with temperature and significant positive correlation with maximum relative humidity as well as non-significant negative correlation with rainfall.
- Population level of coccinellid beetle in SSI Technology and conventional technology ranged from 0.9 to 1.1/clump and from 0.7 to 1.1 /clump respectively and the overall mean population of coccinellid beetle was 0.96 in SSI plot and 0.86 in Conventional plot.
- Thirteen germplasms were identified as less susceptible to early shoot borer *viz*., Co-2001-101, CoC 6060, Co 99006, Si-033, Co 99004, Co-Si-12, CoC 25, CoC 671, CoC 6027, Co 25105, CoV 94104, Co 9418 and CoG 94077
- Fourteen germplasms were identified as less susceptible to internode borer *viz*., Si 2009-013, Si-2009-033, Co 21, CoC 93076, mc-707, Co 99004, CoC 25, CoC 26, Si 023, Si-020, Co 86032, TNAU (Sc) Si-8, Co 94018 and CoC 24
- Twelve germplasm were categorized as less susceptible to top borer *viz*., Si 2013-07, Co 11015, TNAU (Sc)Si 7, Si 2009-013, 07-G-017, CoC 93076, mc-707, Co 2001 013, Si 2010-012, Co 99004, TNAU (Sc) Si 6, Co 94012, Si 0103, CoG 6, Co 25105 and CoC 24
- Seventeen germplasm were observed less susceptible to mealy bug *viz*., Si 2009-013, Co-2001-101, CoC 93076, CoG 6, CoC 25, Co 25105, CoC 26, CoC 23, CoV 94104, CoC 24, Si-2009-03 and CoG 94077

b. Plant Pathology

- Incidence of red rot disease severity ranged from 2 to 15 % in varieties *viz.,* CoC 24 and CoV 09356

- Pokkah boeng disease incidence was noticed in varieties *viz*., CoV 94101, CoV 09356, CoC 13339, Co 11015 and Co 86032 and the incidence ranged from 2 to 45 per cent. Among these, the varieties CoV 94101, Co 11015 and CoV 09356 were the most affected. Ratoon crop was severely affected by this disease when compared to plant crop.
- Smut disease severity was up to 6 % in the varieties Co11015, CoV 94101 and CoV 09356. Yellow leaf disease was also noticed in Co 86032 and CoV 09356 with incidence ranged from 5 to 15 %. Grassy shoot disease was also noticed in traces in the varieties *viz*., CoC 13339 and CoV 09356.
- Cuddalore clone *viz*., C 18034, C 18025 and C 18011 showed resistant and moderately resistant reaction to red rot disease. Among the 11 Sirugamani clones, clones *viz*., Si 2017 – 216 and Si 2017 – 217 were found to be resistant and moderately resistant to red rot disease, respectively. Among the 15 Melalathur clones screened for resistance to red rot disease, five clones *viz*., G 2019 - M 075, G 2019 - M 523, G 2019 - M 893, G 2019 - M 903 and G 2019 - M 1958 were found moderately resistant to red rot disease.
- Five Cuddalore clones *viz*., C 18011, C 18034, C18166, C 18198 and C 18284 and four clones *viz*., C 18024, C 18025, C 18112 and C 18200 were found resistant and moderately resistant to smut disease, respectively. The Sirugamani clones such as Si 2017 – 004, Si 2017 – 216, Si 2017 – 179, Si 2017 – 188, Si 2017 – 196, Si 2017 – 202 and Si 2017 – 217 were found resistant to smut disease
- Melalathur clones such as G 2019 – M 665, G 2019 – M 861, G 2019 – M 901, G 2019 – M 1958, G 2019 – M 2794, G 2019 – M 2801 and four clones *viz*., G 2019 – M 046, G 2019 – M 057, G 2019 – M 063 and G 2019 – M 523 showed resistant and moderately resistant to smut disease, respectively

II. OFT (2023-2024)

IPDM package for the management of Crown mealy bug and Pokkah Boeng disease in Sugarcane (Ratoon)

Centres and Scientist In charge	Activities	Deliverables
Cuddalore - Lead centre Dr. S. Thangeswari Asst. Prof. (Plant Pathology) SRS, Cuddalore Dr. K. Senguttuvan Assoc. Prof. (Agrl. Entomology) KVK, Virudhachalam **Trichy** Dr. R. Sheeba Jasmine**,** Assoc. Prof. (Agrl. Entomology) KVK, Sirugamani Dr. M. Rajesh Asst. Prof. (Plant Pathology) ADAC& RI, Trichy **Erode**	**Two sets of OFTs** 1. High Volume spray (battery operated) 2. Drone spray **T_1:** Spraying of propiconazole 25% EC (1 ml/l) + imidacloprid 17.8 SL (0.4 ml /l) after initial appearance of symptom **T_2:** Spraying of TNAU Sugarcane Booster at 1, 1.5 and 2kg per acre @ 45, 60 and 75 DAP + Spray with propiconazole 25% EC (1 ml/l) + imidacloprid 17.8 SL (0.4 ml /l) after initial appearance of symptom **T_3:** Micronutrient of TN government **+** Spray with propiconazole 25% EC (1 ml/l) + imidacloprid 17.8 SL (0.4 ml /l) after initial appearance of symptom **T_4:** Untreated control **Design:** Exploded plot design	Cost effective management method for crown mealy bug and Pokkah boeng disease

ARS, Bhavanisagar Dr. K. Ganesan Assoc. Prof. (Agrl. Entomology) Dr. S. Sundaravadana, Assoc. Prof. (Plant Pathology) **Kallakuruchi** **TCRS, Yethapur** Dr. P.A. Saravanan Assoc. Prof. (Agrl. Entomology) Dr. V. Ravichandran Assoc. Prof. (Plant Pathology)	**Total area:** 1 ha (0.25 ha area for each treatment) **Replication:** 5 **Plot size:** 5 X 4m **Season and variety**: As per the district specific cropping systems **Observations:** **Crown mealybug** 1. Number of mealy bug present in 20 clumps selected at random per plot. 2. Damage rating on a 1 – 4 scale in 20 clumps selected at random per plot. 3. Natural enemies per 20 clumps **Pokkah boeng** 1. Per cent Disease Incidence 2. Per cent Disease Index (Grade) **Biometric** • Cane height • Number of internodes • Number of Millable canes • Cane Yield • Brix ratio • C:B ration	

B. Action plan (2023-2024)

Action plan No. 1	**Surveillance of pests and diseases of sugarcane and collection of data set for AI based diagnosis**		
Theme leader	Dr. S. Thangeswari, SRS, Cuddalore Dr. R. Sheeba Jasmine, KVK, Sirugamani		
Activity	**Name of the scientist(s) and centre**	**Observations to be made**	**Deliverables**
Pests • Monitoring emerging pests and diseases (borer complex, sucking pests, root feeders, mites, defoliator (if any). Assessment of insect pest and natural enemies population i*n situ*, light and pheromone traps. Impact of light trap on non-target arthropods. • Fixed plot and roving survey at fortnightly interval in the District identified during the district crop season. **Diseases** • Monitoring and surveillance of red rot, smut, wilt, Pokkah boeng, YLD and	**Cuddalore -** Lead centre Dr. S. Thangeswari Asst. Prof. (Plant Pathology) SRS, Cuddalore Dr. K. Senguttuvan Assoc. Prof. (Agrl. Entomology) KVK, Viidhachalam **Trichy** Dr. R. Sheeba Jasmine**,** Assoc. Prof. (Agrl. Entomology) KVK, Sirugamani Dr. M. Rajesh Asst. Prof. (Plant Pathology) ADAC& RI, Trichy **Erode**	➢ Monitoring to be done throughout the year. ➢ Forecasting and forewarning of pest and disease incidence for making management decisions. ➢ A minimum of 500 images to be collected for each major pest and diseases of sugarcane	➢ Forecasting the outbreak of pests and diseases in sugarcane at appropriate times, for taking up management measures by the farmers. ➢ Prediction analysis on the incidence of pests and diseases. ➢ Development of AI based diagnostic tool

other diseases in endemic areas of the respective district. • Fixed plot and roving surveys should be conducted. Weather parameters should be collected • Correlation studies with weather parameters and developing forewarning model • Collection of images for major pest and diseases	**ARS, Bhavanisagar** Dr. K. Ganesan Assoc. Prof. (Agrl. Entomology) Dr. S. Sundaravadana, Assoc. Prof. (Plant Pathology) **ACRC, TNAU, CBE** Dr. S. Kokilavani		

Action plan No. 2	**Identification of resistant sources with mechanism of resistance for major pests and diseases**		
Theme Leader	Dr. S. Thangeswari, SRS, Cuddalore Dr. R. Sheeba Jasmine, KVK, Sirugamani		
Activity	**Name of the scientist(s) and centre**	**Observations to be made**	**Deliverables**
• Screening pre-release cultures from breeders both under natural and artificial condition as per the standard screening methods for key insect pests and diseases of sugarcane. • Identification of resistant sources and study of physical and biochemical characters conferring resistance	**Pests** Dr. R. Sheeba Jasmine KVK, Sirugamani **Diseases** Dr. S. Thangeswari SRS, Cuddalore	**Pests** • Early shoot borer, internode borer and emerging pests. **Diseases** • Red rot, Pokkah boeng and smut to be screened both under artificial inoculation and natural field conditions	Identification of resistant clones and resistance mechanisms for pests and diseases of sugarcane for utilizing in breeding programmes.

Action plan No. 3	**Management of smut disease in sugarcane (Contd.)**		
Theme leader	Dr. S. Thangeswari, Asst. Prof. (Plant Pathology), SRS, Cuddalore		
Action Plan	**Name of the scientist(s) and centre**	**Observations to be made**	**Deliverables**
Management of smut disease in sugarcane	**SRS, Cuddalore** Dr. S. Thangeswari, **SRS, Sirugamani** Dr. V.K. Satya	**Treatment** T_1 – Sett treatment with propiconazole 25% EC @ 1 ml/l for 15 min + foliar spraying @ 1 ml/l at 60 and 90 days after planting. T_2 – Sett treatment with *Bacillus subtilis* (Bbv57) @ 10 g/l for 15 min + foliar spraying @ 1 g/l at 60 and 90 days after planting. T_3 – Sett treatment with *Chetomium globosum* (Cg6) @ 10 g/l for 15 min + foliar spraying @ 1g/l at 60 and 90 days after planting.	Technology for the management of smut disease in sugarcane

		T_4 – Sett treatment with carbendazim @ 1 g/l for 15 min + foliar spraying @ 1 g/l at 60 and 90 days after planting. T_5 - Untreated control Replications: Four Design: RBD **Observations** Smut incidence and Yield	

Action plan No. 4	**Crown mealy bug and Pokkah Boeng disease management in Sugarcane**	
Theme Leader	Dr. S. Thangeswari, SRS, Cuddalore Dr. R. Sheeba Jasmine, KVK, Sirugamani	
Centres and Scientist In-charge	**Activities**	**Deliverables**
Cuddalore Dr. S. Thangeswari Asst. Prof. (Plant Patho.) SRS, Cuddalore Dr. K. Senguttuvan Assoc. Prof. (Ento.) KVK, Vridhachalam **Trichy** Dr. R. Sheeba Jasmine**,** Assoc. Prof. (Ento.) KVK, Sirugamani Dr. M. Rajesh Asst. Prof. (Plant Patho.) ADAC&RI, Trichy **Erode** **ARS, Bhavanisagar** Dr. K. Ganesan Assoc. Prof. (Entomology) Dr. S. Sundaravadana, Assoc. Prof. (Plant Pathology)	**Management with chemicals** **T1:** Sett treatment with propiconazole 25% EC 1ml/l and imidacloprid 17.8 SL (0.4ml/l) for 20 minutes before planting **T2:** Spraying of propiconazole 25% EC (1 ml/l) + imidacloprid 17.8 SL (0.4 ml /l) after initial appearance of symptom **T3:** Spraying of TNAU Sugarcane Booster at 1, 1.5 and 2kg per acre @ 45, 60 and 75 DAP + Spray with propiconazole 25% EC (1 ml/l) + imidacloprid 17.8 SL (0.4 ml /l) after initial appearance of symptom **T4: T1 + T2** **T5: T1 + T3** **T6:** Untreated Control Seasons and Variety: As per the district specific Cropping systems **Observations:** **Crown mealybug** 1. Number of mealy bug present in 20 clumps selected at random per plot. 2. Damage rating on a 1 – 4 scale in 20 clumps selected at random per plot. 3. Natural enemies per 20 clumps **Pokkah boeng** 1. Per cent Disease Incidence 2. Per cent Disease Index (Grade) **Biometric** • Cane height • Number of internodes • Number of Millable canes • Cane Yield • Brix ratio; C:B ration	Cost effective management method for crown mealy bug and Pokkah boeng disease

C. Research projects on sugarcane

Discipline	Centre	URP	AICRP	Total
Agricultural Entomology	RRS, Virudhachalam	1	-	1
	SRS, Sirugamani	1	-	1
Plant Pathology	SRS, Cuddalore	-	1	1
	Total	**2**	**1**	**3**

Remarks on the ongoing University Research Projects

1. Agricultural Entomology

S. No.	Project number and title	Period	Investigators	Remarks
1.	**CPPS/VNR/ENT/SUG/2021/001** Population dynamics of insect pests, bio agents and development of management strategies for borer pests under SSI Technology	April 2021-March 2024	Dr. S. Douressamy Professor and Head RRS, Vridhachalam	The project may be transferred to RRS, Vridhachalam and continued
2.	**CPPS/SIR/SUG/2022/001** Screening of sugarcane germplasm against major pests and investigation on the mechanism of resistance	Jan, 2022 - Dec, 2024	Dr. R. Sheeba Jasmine KVK, Sirugamani	The project may be continued.

2. Plant Pathology

S. No.	Project number and Title	Period	Investigators	Remarks
1.	**AICRP/PBG/CUD/SUG/025** AICRP on sugarcane	2022-2023	Dr. S. Thangeswari SRS, Cuddalore	The project may be continued as per the technical programme of AICRP on Sugarcane

IV. REMARKS

a. General recommendations

- Scientists from ICAR-SBI may be invited for the Sugarcane Scientists meet (**Action**: Prof. & Head, SRS, Cuddalore).
- The reasons for decline in area under sugarcane in Tamil Nadu may be studied and documented. Efforts may be taken to increase the area under cultivation of Sugarcane in Tamil Nadu (**Action:** DCARDS/All Directorates).
- Technology capsule for complete mechanization of sugarcane may be developed and demonstrations may be conducted in at least 50 locations of 1 ha. each (**Action**: DAEC&RI/DEE).
- Suitable tool for effective de-trashing in sugarcane may be developed. (**Action**: DAEC&RI).
- Efforts may be taken to develop new value-added products in sugarcane (**Action**: DCSC&RI).
- Efforts may be taken to develop procedure for making chemical free jaggery and necessary training may be imparted to the jaggery farmers through KVKs (**Action**: PHTC/FPE/DCSC&RI/DEE)

- Scientists working in Sugarcane may be encouraged to publish their research findings in the peer reviewed journals having NAAS rating more than 7 (**Action**: All Scientists).
- Efforts may be made to obtain more externally sponsored schemes (**Action**: All Scientists)

b. Crop Improvement

- Popularization of recently released sugarcane varieties *viz*., CoG 7 and CoC 13339 may be done through organizing demonstrations/field days and other extension activities (**Action**: Prof. & Head, SRS, Cuddalore/Melalathur/DEE).
- Development of high sugared clones (>13 % CCS) may be given priority. Clones with brix values of > 24 alone may be selected and forwarded for evaluation (**Action**: Prof. & Head, SRS, Cuddalore/Sirugamani/Melalathur).
- Genome Editing in Sugarcane for Red Rot Resistance may be prioritized (**Action**: DCPMB&B/DCPPS/ Prof. & Head, SRS, Cuddalore).
- Genetic improvement of sugarcane for water and fertilizer use efficiency may be taken up (**Action**: Prof. & Head, SRS, Cuddalore/Sirugamani/ Melalathur).

c. Crop Management

- Capacity building trainings (5 Nos. each) on drip irrigation and maintenance in sugarcane cultivation under SSI with funding from CWGS may be imparted to the farmers/stakeholders (**Action**: SRS, Cuddalore/Sirugamani/DCWGS).
- Demonstrations on 'Sugarcane boosters' may be organized in collaboration with Co-op. Sugar mills (**Action**: SRS, Cuddalore/Sirugamani/Dept. of Crop Physiology, TNAU, CBE).
- Research may be initiated to optimize dosage for TNAU-WSF under drip fertigation (**Action**: SRS, Cuddalore/Sirugamani/DNRM).

d. Crop Protection

- Efforts may be taken to popularize the plant protection measures developed at SRS, Cuddalore for the control of Pokkah boeng and crown mealybug in sugarcane among the farmers (**Action**: SRS, Cuddalore).
- All the plant protection scientists may be instructed to monitor the insect pests, diseases and nematodes of sugarcane in their districts regularly. If any outbreak of existing pests, disease and nematodes or occurrence of new insect pests, diseases and nematodes noticed, it should be reported to the Director (CPPS) immediately.

V. List of Participants

S. No.	Name	Designation and Department
1.	Dr. R. Ravikesavan	Director, CPBG, TNAU, Coimbatore
2.	Dr. R. Umarani	Director, Seed Centre, TNAU, Coimbatore
3.	Dr. K. Subrahmaniyan	Director, TRRI, Aduthurai
4.	Dr. P. Balasubramaniam	Director, NRM, TNAU, Coimbatore
5.	Dr. D. Sassikumar	Prof. (PBG) and Head, SRS, Cuddalore
6.	Dr. P. Murali Arthanari	Prof. (Agronomy) and Head (i/c), SRS, Sirugamani
7.	Dr. N.A. Saravanan	Asst. Prof. (PBG) and Head, SRS, Melalathur
8.	Dr. V. Manonmani	Professor and Head, Dept. of SST, TNAU, Cbe
9.	Dr. P. Parasuraman	Professor and Head, Dept. of Agronomy
10.	Dr. R. Kavitha	Professor Head, Dept. of FM&PE, AEC&RI, TNAU
11.	Dr. S. Jeyarajan Nelson	Professor and Head, Dept. of Agrl. Ento., Coimbatore
12.	Dr. G. Karthikeyan	Prof. and Head, Dept. of Plant Pathology, TNAU
13.	Dr. M. Baskar	Prof. and Head, SS&AC, ADAC&RI, Trichy
14.	Dr. S. Douressamy	Professor and Head, RRS, Vridhachalam
15.	Dr. A. Thirumurugan	Professor and Head, ARS, Virinjipuram
16.	Dr. M. Jayachandran	Professor (Agronomy), SRS, Cuddalore
17.	Dr. M.P. Sugumaran	Professor (ENS), SRS, Cuddalore
18.	Dr. A. Christopher Lourduraj	Professor (ENS), Directorate of Research, TNAU, Coimbatore
19.	Dr. C. Babu	Professor (PBG), Directorate of Research, TNAU, Coimbatore
20.	Dr. N. Manikanda Boopathi	Professor (Bio Tech.), Directorate of Research, TNAU, Cbe
21.	Dr. N. Balakrishnan	Professor (Agrl. Ento.), Directorate of Research, TNAU, Cbe
22.	Dr. T. Thirumurugan	Assoc. Prof. (PBG), SRS, Cuddalore
23.	Dr. Asish K Binodh	Assoc. Professor (PBG), TNAU, Coimbatore
24.	Dr. K. Ganesan	Assoc. Prof. (Agrl. Ento.), ARS, Bhavanisagar
25.	Dr. S. Sundaravadana	Assoc. Prof. (Pl. Pathology), TRC, Bhavanisagar
26.	Dr. R. Sheeba Jasmine	Assoc. Prof. (Agrl. Ento.), KVK, Sirugamani
27.	Dr M. Sakila	Asst. Prof. (PBG), ADAC& RI, Trichy
28.	Tmt. R. Anitha,	Asst. Prof. (Crop Physiology), SRS, Cuddalore
29.	Tmt. G. Porkodi	Asst. Prof. (SS & AC), SRS, Cuddalore
30.	Dr. S. Thangeswari	Asst. Prof. (Pl. Pathology), SRS, Cuddalore
31.	Dr. V. Bhaskaran	Asst. Prof. (Agrl. Ento.), TNAU, Coimbatore
32.	Dr. M. Rajesh	Asst. Prof. (Plant Pathology), ADAC& RI, Trichy
33.	Dr. G. Gayathry	Asst. Prof. (Agrl. Microbiology), KVK, Vridhachalam
34.	Dr. Babu Rajendra Prasad	Asst. Prof. (Crop Physiology), TNAU, Coimbatore
35.	Dr. P. Kalaiselvi	Asst. Prof. (ENS), KVK, Sandiyur

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