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ALL INDIA COORDINATED RESEARCH PROJECT ON SUGARCANE

(Indian Council of Agricultural Research)

MONITORING REPORT (2018-19)

भाकृअनुप
ICAR

ICAR-Indian Institute of Sugarcane Research
Post-Dilkusha, Raebareli Road, Lucknow-226 002

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(Indian Council of Agricultural Research)

MONITORING REPORT (2018-19)

S K SHUKLA

PROJECT COORDINATOR (SUGARCANE)

ICAR- INDIAN INSTITUTE OF SUGARCANE RESEARCH

LUCKNOW – 226 002

Assistance in compilation:
Dr SK Awasthi
Dr GK Singh
Shri Adil Zubair

Published by : Dr SK Shukla, Project Coordinator, All India Coordinated Research Project on Sugarcane,ICAR-Indian Institute of Sugarcane Research, Raebareli Road, P.O. Dilkusha, Lucknow-226 002 (U.P.)

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All India Coordinated Research Project on Sugarcane
Constitution of Monitoring Team for 2018-2019 Crop Season

1. NORTH WEST ZONE

i)	**Dr Neeraj Kulshreshtha, Breeder, SBI-RC, Karnal**	-	**Team Leader**
ii)	Dr Kuldeep Singh, Agronomist, PAU RRS, Faridkot	-	Member
iii)	Shri S.K. Vishwakarma, Pathologist, UPCSR, Shahjahanpur	-	Member
iv)	Dr V.N Patel, Entomologist, ZARS, Mandya	-	Member

2. NORTH CENTRAL & NORTH EASTERN ZONE

i)	**Dr Kashinath Mandal, Breeder, SRS, Bethuadahari**	-	**Team Leader**
ii)	Dr M.K. Tripathi, Agronomist, ICAR-IISR, Lucknow	-	Member
iii)	Dr Devanshi Dutta, Pathologist, SRS, Buralikson	-	Member
iv)	Dr Arun Baitha, Entomologist, ICAR-IISR, Lucknow	-	Member

3. PENINSULAR ZONE I

i)	**Dr S.B. Patil, Breeder, ARS, Sankeshwar**	-	**Team Leader**
ii)	Dr S.K. Yadav, Agronomist, ICAR-IISR, Lucknow	-	Member
iii)	Dr Dinesh Singh, Pathologist, ICAR-IISR, Lucknow	-	Member
iv)	Dr S.K. Pandey, Entomologist, SBI RC, Karnal	-	Member

4. PENINSULAR ZONE II

i)	**Dr S.C. Mali, Breeder, MSRS, Navsari**	-	**Team Leader**
ii)	Dr V.P. Jaiswal, Agronomist, ICAR-IISR, Lucknow	-	Member
iii)	Dr M. Minatullah, Pathologist, SRI, Pusa	-	Member
iv)	Dr K.P. Salin, Entomologist, ICAR-SBI, Coimbatore	-	Member

5. EAST COAST ZONE

i)	**Dr P.K. Nayak, Breeder, SRS, Nayagarh**	-	**Team Leader**
ii)	Dr Mehar Chand, Agronomist, RRS, Uchani, Kolhapur	-	Member
iii)	Dr R.K. Sahu, Pathologist, GBPUA&T, Pantnagar	-	Member
iv)	Mr. R.G. Yadav, Entomologist, VSI, Pune	-	Member

Facilitators for Monitoring Team for 2018-2019 Crop Season

Sl. No.	Zone	Name & Designation	Contact details
1.	North West Zone	**Shri Adil Zubair,** Asstt. Chief Technical Officer	E-mail: adizubi64@gmail.com Mob.: 074088-03234; 9451086378
2.	North Central & North Eastern Zones	**Dr S.K. Awasthi,** Chief Technical Officer	E-mail: awasthi.shashivind.09@gmail.com Mob.: 094159-11964
3.	East Coast Zone	**Dr V.K. Gupta,** Principal Scientist (Plant Breeding)	E-mail: drguptavinod57@gmail.com Mob.: 094311-75837; 09919737690
4.	Peninsular Zone-I	**Dr S.K. Yadav,** Scientist (Agronomy)	E-mail: sanjaybhu05@rediffmail.com Mob.: 094021-34428
5.	Peninsular Zone-II	**Dr Lalan Sharma,** Scientist (Plant Pathology)	E-mail: sharmanbaim@gmail.com Mob.: 080040-81721; 08887960911

Visit Schedule of the Monitoring Teams during 2018-19 crop season

Monitoring Teams for different zones	Centres monitored	Visit schedule
North West Zone		
Team Leader • Dr Neeraj Kulshreshtha, Breeder, SBI-RC, Karnal **Members** • Dr Kuldeep Singh, Agronomist, PAU RRS, Faridkot • Shri S.K. Vishwakarma, Pathologist, UPCSR, Shahjahanpur • Dr V.N Patel, Entomologist, ZARS, Mandya	Lucknow, Shahjahanpur, Muzaffarnagar, Pantnagar, Karnal, Uchani, Kapurthala, Faridkot, Sriganganagar and Kota	28.11.2018 to 08.122018
North Central & North East Zone		
Team Leader • Dr Kashinath Mandal, Breeder, SRS, Bethuadahari **Members** • Dr M.K. Tripathi, Agronomist, ICAR-IISR, Lucknow Dr Devanshi Dutta, Pathologist, SRS, Buralikson • Dr Arun Baitha, Entomologist, ICAR-IISR, Lucknow	Gorakhpur, Seorahi, Pusa, Motipur, Muzaffarpur, Bethuadahari and Buralikson	01.12.2018 to 11.12.2018
East Coast Zone		
Team Leader • Dr P.K. Nayak, Breeder, SRS, Nayagarh **Members** • Dr Mehar Chand, Agronomist, RRS, Uchani, Kolhapur • Dr R.K. Sahu, Pathologist, GBPUA&T, Pantnagar • Mr. R.G. Yadav, Entomologist, VSI, Pune	Nellikuppam, Cuddalore, Vuyyuru, Anakapalle and Nayagarh	29.11.2018 to 07.12.2018
Peninsular Zone-I		
Team Leader • Dr S.B. Patil, Breeder, ARS, Sankeshwar **Members** • Dr S.K. Yadav, Agronomist, ICAR-IISR, Lucknow • Dr Dinesh Singh, Pathologist, ICAR-IISR, Lucknow • Dr S.K. Pandey, Entomologist, SBI RC, Karnal	Coimbatore, Pugalur, Thiruvalla, Mandya Sankeshwar, Sameerwadi, Kolhapur and Perumalapalle	04.12.2018 to 13.12.2018
Peninsular Zone-II		
Team Leader • Dr S.C. Mali, Breeder, MSRS, Navsari **Members** • Dr V.P. Jaiswal, Agronomist, ICAR-IISR, Lucknow • Dr Dr M. Minatullah, Pathologist, SRI, Pusa • Dr K.P. Saline, Entomologists, ICAR-SBI, Coimbatore	Pune, Pravaranagar, Padegaon, Akola, Powarkheda, Navsari and Rudrur	27.11.2018 to 08.12.2018

MONITORING REPORT OF NORTH WEST ZONE
(CROP SEASON 2018-19)

A monitoring team was constituted for monitoring of various trials conducted during 2018-2019 under AICRP on Sugarcane for the participating centres of North west Zone with the following scientists.

Team	Visited centres	Date of visit
Team Leader • Dr. Neeraj Kulshreshtha Principal Scientist & Head ICAR-SBI, RC, Karnal **Members** • Dr. V.N. Patel Professor of Entomology Zonal Agricultural Research Station, V.C. Farm, Mandya, Karnataka • Dr. Kuldeep Singh Agronomist, PAU Regional Station, Faridkot • Dr. Vishwakarma Scientific Officer (Plant Pathology) UPCSR, Sahajahanpur	ICAR-IISR, Lucknow	28.11.2018
	UPCSR, Shahjahanpur	29.11.2018
	GBPUA&T, Pantnagar	30.11.2018
	SRS, Muzaffarnagar	01.12.2018
	SBI-RC, Karnal/ RRS, Uchani	02.12.2018
	PAURRS, Kapurthala	04.12.2018
	PAURS, Faridkot	05.12.2018
	ARS, Sriganganagar	06.12.2018
	ARS, Kota	07.12.2018

The report of various field trials are given below:

A. CROP IMPROVEMENT

In Crop Improvement, there were four trials as per AICRP technical programme *viz.* IVT Early, AVT Early 1st plant , AVT Early 2nd plant, AVT Early Ratoon, IVT Mid Late, AVT Mid Late 1st plant, AVT Mid Late 2nd plant.

Overall grading of trials

Trials	Lucknow	Shahjahanpur	Pantnagar	Muzaffarnagar	Uchani	Karnal	Kapurthala	Faridkot	Sriganganagar	Kota
IVT (E)	A	G	G	A	N/A	E	E	E	G	G
AVT (E)1st P	A	G	G	G	N/A	E	E	E	G	G
AVT (E)2nd P	G	G	G	G	N/A	E	E	E	G	G
AVT (E) Ratoon	P	A	P	P	N/A	E	E	E	G	NC
IVT (ML)	A	G	G	G	E	N/A	E	E	G	G
AVT (ML)1st P	A	G	G	G	E	N/A	E	E	G	G
AVT ML)2nd P	A	G	G	G	E	N/A	E	E	G	G
AVT (ML) Ratoon	P	G	G	P	E	N/A	E	E	G	NC

Each trial was rated in four scales E. Excellent G. Good A. Average P. Poor N/A: Not allotted NC: Not conducted

1.1 Assessment of entries in trials:

1.11 Performance of entries in the IVT-early

Lucknow- In Lucknow comparison of entries was not possible due to damage & gaps.

Shahjahanpur- The trial was laid out as per the technical programme and was well maintained. Among the standards Co 0238 was the best while CoJ 64 and Co 05009 was good. Among the entry Co 15027 was better & entries Co 15023, Co 15024, CoLk 15201, CoLk 15204, CoLk 15205, CoPb 15212 were good whereas CoPb 15211 and CoLk 15203 were poor.

Pantnagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards Co 0238 was the best while CoJ 64 and Co 05009 were good. Among the entries Co 15027 was on par with best standard and Co 15023, Co 15024, CoLk 15201, CoLk 15203, CoLk 15204, CoLk 15205, CoPb 15212 were good. Whereas Co 15211 was poor.

Muzaffarnagar- The trial was laid out as per the technical programme. Among the standards Co 0238 was the best while CoJ 64 and Co 05009 were good. Among the entries Co 15024, Co 15027, CoLk 15201, CoLk 15204, CoLk 15205, CoPb 15212 were good. Co 15023 was damaged. Entries CoLk 15203 & CoPb 15211 were poor.

Karnal- The trial was laid out as per the technical programme and the maintenance of trial was very good. Among the standards Co 0238 was the best while CoJ 64 and Co 05009 were good. Among the entry Co 15027, CoLk 15201 and Co 15023 were on par. Entries Co 15024, CoLk 15203, CoPb 15211 & CoPb 15212 were good whereas CoLk 15204 and CoLk 15205 were poor. The trial was excellent. Smut was observed in CoLk 15201 and CoLk 15203.

Kapurthala- The trial was laid out as per the technical programme and the maintenance of trial was very good. Among the standards Co 0238 was the best while CoJ 64 and Co 05009 were good. Among the entries Co 15027 and CoLk 15201 were better while Co 15023 was on par. Entries Co 15024, CoLk 15203, CoLk 15204, CoLk 15205, CoPb 15211, CoPb 15212 were good. The trial was excellent.

Faridkot- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 and Co 05009 were good. Among the entries Co 15024, Co 15027, CoLk 15201, CoLk 15203 were on par whereas entries Co 15023, CoLk 15204, CoLk 15205, CoPb 15211 & CoPb 15212 were good. The trial was excellent.

Sriganganagar The trials was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 05009 was the best while Co 0238 & CoJ 64 were good. Among the entries Co 15027, CoLk 15201, CoLk 15203, CoLk 15204, CoLk 15205 were better & entries Co 15023, Co 15024, CoPb 15211 & CoPb 15212 were good.

Kota- The trials was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64, Co 05009 were On par. Among the entries CoLk 15201 and Co 15027 were better. Entries Co 15023, Co 15024, CoLk 15203, CoLk 15204, CoLk 15205, CoPb 15211 & CoPb 15212 were On par.

Entries	**Lucknow**	**Shahjahanpur**	**Pantnagar**	**Muzaffarnagar**	**Karnal**	**Kapurthala**	**Faridkot**	**Sriganganagar**	**Kota**
Co 15023	**Damaged & gaps**	G	G	Damaged	On par	On par	G	G	On par
Co 15024		G	G	G	G	G	On par	G	On par
Co 15027		Better	On par	G	On par	Better	On par	Better	On par
CoLk 15201		G	G	G	On par	Better	On par	Better	Better
CoLk 15203		P	G	P	G	G	On par	Better	On par
CoLk 15204		G	G	G	P	G	G	Better	On par
CoLk 15205		G	G	G	P	G	G	Better	On par
CoPb 15211		P	P	P	G	G	G	G	On par
CoPb 15212		G	G	G	G	G	G	G	On par
CoJ 64(std)		G	G	G	G	G	G	G	On par
Co 0238(std)		Best	Best	Best	Best	Best	Best	G	Best
Co 05009 (std)		G	G	G	G	G	G	Best	On par

1.12 Performance of entries in the AVT-early 1st plant

Lucknow- The trials was laid out as per the technical programme. Among the standards Co 0238 was the best while CoJ 64 & Co 05009 was poor. Among the entries CoPb 14181 were good. Entry CoLk 14201 was poor. Entries Co 14034 & CoPb 14211 were damaged. The data may not be included for comparison.

Shahjahanpur- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards Co 0238 was the best while CoJ 64 was good & Co 05009 was poor. Among the entries Co 14034, CoLk 14201 & CoPb 14181 were good. Entry CoPb 14211 was poor.

Pantnagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards Co 0238 was the best while CoJ 64 was poor & Co 05009 was good. Among the entries CoLk 14201,CoPb 14181 & CoPb 14211 were poor. Entry Co 14034 was at par.

Muzaffarnagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards Co 0238 was the best while CoJ 64 & Co 05009 was poor. Among the entries Co 14034, CoLk 14201, CoPb 14181 & CoPb 14211 were good.

Karnal- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 was good & Co 05009 was poor. Among the entries Co 14034, CoLk 14201 were better & CoPb 14181 & CoPb 14211 were on par. The trial was excellent. Smut was observed in CoPb 14181.

Kapurthala- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 & Co 05009 was good. Among the entries CoLk 14201, CoPb 14181 & CoPb 14211 were good whereas entry Co 14034 was at par. The trial was excellent.

Faridkot- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 was poor & Co 05009 was good. Among the entries Co 14034, CoPb 14181 & CoPb 14211 were good. Entry CoLk 14201 was poor. The trial was excellent.

Sriganganagar- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 was good & Co 05009 was on par. Among the entries Co 14034, CoLk 14201 were better. Entry CoPb 14211 was on par.

Kota- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards Co 0238 was the best while CoJ 64 & Co 05009 was good. Among the entries Co 14034 & CoPb 14211 were at par. Entries CoLk 14201 & CoPb 14181 were good. Smut was observed in CoPb 14181.

Entries	Lucknow	Shahjahanpur	Pantnagar	Muzaffarnagar	Uchani/ Karnal	Kapurthala	Faridkot	Srigganganagar	Kota
Co 14034	Damaged	G	AT PAR	G	Better	At Par	G	Better	At Par
CoLk 14201	P	G	P	G	Better	G	P	Better	G
CoPb 14181	G	G	P	G	On Par	G	G	G	G
CoPb 14211	Damaged	P	P	G	On Par	G	G	On Par	At Par
CoJ 64(std)	P	G	P	P	G	G	P	G	G
Co 0238(std)	Best	Best	Best	Best	Best	Best	Best	Best	Best
Co 05009 (std.)	P	P	G	P	G	G	G	On Par	G

1.13 AVT Early 2nd Plant

Lucknow- The trials was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 & Co 05011 was poor. Among the entries CoS 13231 were good and Co 13034 & CoPb 13181 were poor. **Shahjahanpur-** The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standard Co 0238 was the better while CoJ 64 was also good & Co 05009 was poor. Among the entries Co 13034 & CoS 13231 was good. Entry CoPb 13181 were poor.

Pantnagar- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 & Co 05009 was poor. Among the entry Co 13034 was good. Entries CoPb 13181 & CoS 13231 was poor.

Muzaffarnagar- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 was poor & Co 05009 were good. Among the entries Co 13034, CoPb 13181 & CoS 13231 were good.

Karnal SBI- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the better while CoJ 64 was poor & Co 05009 was good. Among the entries Co 13034 was on par and CoPb 13181 was good. Entry CoS 13231 was poor. The trial was excellent. Smut was observed in CoS 13231.

Kapurthala- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 & Co 05009 was on par. Among the entries Co 13034, CoPb 13181 & CoS 13231 were good. The trial was excellent.

Faridkot- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the better while CoJ 64 was good & Co 05009 was on par. Among the entries Co 13034, CoPb 13181 & CoS 13231 were on par. The trial was excellent.

Sriganganagar- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was better while CoJ 64 was good & Co 05009 were on par. Among the entries Co 13034, CoPb 13181 & CoS 13231 were on par.

Kota- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 0238 was the best while CoJ 64 & Co 05009 was good. Among the entries CoPb 14181 & CoS 13231 were good whereas entry Co 13034 was at par.

Entries	**Lucknow**	**Shahjahanpur**	**Pantnagar**	**Muzaffarnagar**	**Karnal**	**Kapurthala**	**Faridkot**	**Sriganganagar**	**Kota**
Co 13034	P	G	G	G	On Par	G	On Par	On Par	At Par
CoPb 13181	P	P	P	G	G	G	On Par	On Par	G
CoS 13231	G	G	P	G	P	G	On Par	On Par	G
CoJ 64(std)	P	G	P	P	P	G	G	G	G
Co 0238(std)	Best	Better	Best	Best	Better	Best	Better	Better	Best
Co 05009 (std)	P	P	P	G	G	G	On Par	On Par	G

1.14 AVT Early Ratoon

Lucknow- The trial is to be abandoned on account of very poor population.

Shahjahanpur- The trial is to be abandoned on account of very poor population.

Pantnagar- The trial was not proper is to be abandoned.

Muzaffarnagar- The trial was abandoned at this center.

Karnal (SBI)- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among standards Co 0238 was the best and CoJ 64 & Co 05009 were good. Among the entries Co 13034 and CoS 13231 were good but the entry CoPb 13181 was poor. The trial was excellent. Smut was observed in CoS 13231.

Kapurthala- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among standards Co 0238 was the best and CoJ 64 & Co 05009 were good. Among the entries Co 13034, CoPb 13181 and CoS 13231 were good.

Faridkot- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among standards Co 0238 was the best and CoJ 64 was good & Co 05009 were on par. Among the entries Co 13034, CoPb 13181 and CoS 13231 were on par.

Sriganganagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among standards Co 05009 was the best and Co 0238 & CoJ 64 were good. Among the entries CoPb 13181 and CoS 13231 were on par. Entry Co 13034 were good. Smut was observed in CoS 13231.

Kota- Not Conducted*****

Entries	Lucknow	Shahjahanpur	Pantnagar	Muzaffarnagar	Karnal	Kapurthala	Faridkot	Sriganganagar	Kota
Co 13034	**Trial is to be abandoned on account of very poor population**	**Trial is to be abandoned on account of very poor population**	**The trial was not proper is to be abandoned.**	**The trial was abandoned at this center**	G	G	On Par	G	**Not Conducted**
CoPb 13181					P	G	On Par	On Par	
CoS 13231					G	G	On Par	On Par	
CoJ 64(std)					G	G	G	G	
Co 0238(std)					Best	Best	Best	G	
Co05009 (std)					G	G	On Par	Best	

1.15 IVT (ML)

Lucknow- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards CoPant 97222 was best while CoS 767 & Co 05011 were On par. Among the entries CoLk 15206, CoLk 15207, CoLk 15208, CoLk 15209, CoPb 15213, CoS 15232, CoS 15233 were good and the entries CoPb 15214 & CoS 15234 was poor. Entry Co 15026 may not be compared due to gaps.

Shahjahanpur- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 05011 were best while CoS 767 & CoPant 97222 were good. Among the entries Co 15026, CoLk 15206 were On par & CoLk 15207, CoLk 15208, CoLk 15209, CoPb 15214, CoS 15232, CoS 15233 were good and the entries CoPb 15213, CoS 15231 & CoS 15234 were poor.

Pantnagar- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards CoPant 97222 were best while CoS 767 were on par & Co 05011 were good. Among the entries Co 15026 were better. Entries CoLk 15206, CoPb 15214 & CoS 15233 was On par. Entries CoLk 15209, CoS 15231 & CoS 15232 were good. Entries CoLk 15207, CoLk 15208, CoPb 15213 & CoS 15234 was poor.

Muzaffarnagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards CoS 767 were best while CoPant 97222 & Co 05011 were on par. Among the entries Co 15026, CoLk 15208, CoPb 15214 & CoS 15233 were better. Entries CoLk 15206, CoLk 15207, CoLk 15209, CoPb 15213, CoS 15232 were on par. Entry CoS 15234 were good. CoS 15231 did not germinate.

Uchani- The trial was laid out as per the technical programme. The maintenance of the trial was very good. Among the standards Co 05011 was best while CoS 767 & CoPant 97222 were good. Among the entries Co 15026 & CoS 15233 were on par. Entries CoLk 15206, CoLk 15207, CoLk 15208, CoLk 15209, CoPb 15213, CoPb 15214, CoS 15231, CoS 15232 & CoS 15234 were good. The crop stand and cane height was excellent at the centre. Smut was observed in CoLk 15208 & CoLk 15209.

Kapurthala- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards CoS 767 were best while CoPant 97222 was good & Co 05011

was at par. Among the entries Co 15026, CoLk 15206, CoLk 15207 & CoS 15233 were on par. Entries CoLk 15208, CoPb 15214 & CoS 15232 were better. Entries CoLk 15209, CoPb 15213, CoS 15231 & CoS 15234 were good. The trial was excellent.

Faridkot- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards CoPant 97222 was best while CoS 767 and Co 05011 was on par. Among the entries Co 15026 & CoLk 15208 were better. Entries CoLk 15207 & CoS 15231 were good. Entries CoLk15206, CoLk 15209, CoPb 15213, CoPb 15214, CoS 15232, CoS 15233 & CoS 15234 were on par. The trial was excellent.

Sriganganagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards CoPant 97222 were best while CoS 767 and Co 05011 was good. Among the entry Co 15026 were on par. Entries CoLk15206, CoLk 15207, CoLk 15208, CoLk 15209 ,CoPb 15213, CoPb 15214, CoS 15231, CoS 15233 & CoS 15234 were good. Entry CoS 15232 were better.

Kota- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standards Co 05011 were best while CoS 767 and CoPant 97222 was good. Among the entries CoLk 15206, CoLk 15208 & CoS 15232 were on par whereas Co 15026, CoLk 15207, CoLk 15209, CoPb 15213, CoPb 15214, CoS 15231, CoS 15233 & CoS 15234 were good.

Entries	**Lucknow**	**Shahjahanpur**	**Pantnagar**	**Muzaffarnagar**	**Uchani**	**Kapurthala**	**Faridkot**	**Sriganganagar**	**Kota**
Co 15026	Gaps	On par	Better	Better	On Par	At Par	Better	On Par	G
CoLk 15206	G	On par	On Par	On Par	G	At Par	On Par	G	On Par
CoLk 15207	G	G	P	On Par	G	At Par	G	G	G
CoLk 15208	G	G	P	Better	G	Better	Better	G	On Par
CoLk 15209	G	G	G	On Par	G	G	On Par	G	G
CoPb 15213	G	P	P	On Par	G	G	On Par	G	G
CoPb 15214	P	G	On Par	Better	G	Better	On Par	G	G
CoS 15231	P	P	G	Not germinate	G	G	G	G	G
CoS 15232	G	G	G	On Par	G	Better	On Par	Better	On Par
CoS 15233	G	G	On Par	Better	On Par	At Par	On Par	G	G
CoS 15234	P	P	P	G	G	G	On Par	G	G
CoS 767(std)	On par	G	On Par	Best	G	Best	On Par	G	G
CoPant97222 (std)	Best	G	Best	On Par	G	G	Best	Best	G
Co 05011(std)	On par	Best	G	On Par	Best	At Par	On Par	G	Best

1.16 AVT-ML 1st Plant

Lucknow- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standards CoS 767 and Co 05011 were good while CoPant 97222 were best. Among the entry CoS 14233 was On par, Entries CoLk 14203 & CoLk 14204 were better and Co 14035, CoPb 14184 & CoPb 14185 were good. Entry CoH 14261 were poor.

Shahjahanpur- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standards CoS 767 were best while Co 05011 were On par & CoPant 97222 were good. Among the entry Co 14035, CoH 14261, CoLk 14203, CoLk 14204, CoPb 14184 & CoS 14233 were good. Entry CoPb 14185 was poor.

Pantnagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standards CoS 767 was best while CoPant 97222 was On par & Co 05011 were good. Among the entries Co 14035, CoPb 14184, CoPb 14185 & CoS 14233 were good. Entries CoLk 14203 & CoLk 14204 were on par. Entry CoH 14261 was poor.

Muzaffarnagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among The standards CoS 767 was best while CoPant 97222 was On par & Co 05011 was good. Among the entries Co 14035, CoPb 14184, CoPb 14185 & CoS 14233 were on par. Entry CoLk 14203 was better. Other entries were poor.

Uchani- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among The standards Co 05011 was best while CoS 767 were On par & CoPant 97222 were good. Among the entries Co 14035 & CoPb 14184 were on par. Entries CoH 14261, CoLk 14203, CoPb 14185 & CoS 14233 were good. The trial was excellent in terms of crop stand and cane height. CoLk 14204 was not planted due to unavailability of seed.

Karpurthala-The trial was laid out as per the technical programme. The maintenance of the trial was good. Among The standards Co 05011 were best while CoS 767 & CoPant 97222 were good. Among the entry Co 14035 was good. Entries CoH 14261, CoLk 14204, CoPb 14184 & CoPb 14185 were at par. Entries CoLk 14203, & CoS 14233 were better. The trial was excellent.

Faridkot-The trial was laid out as per the technical programme. The maintenance was very good. Among The standards Co 05011 were best while CoS 767 was good & CoPant 97222 were on par. Among the entry Co 14035, CoPb 14185 & CoS 14233 were on par. Entries CoH 14261, CoLk 14203 & CoLk 14204 were good. Entry CoPb 14184 was better. The trial was excellent.

Sriganganagar- The trial was laid out as per the technical programme. The maintenance was good. Among The standards CoPant 97222 were best while CoS 767 & Co 05011 was good. Among the entries CoH 14261, CoLk 14203, CoLk 14204, CoPb 14184, CoPb 14185 & CoS 14233 were good. Entry Co 14035 was poor.

Kota- The trial was laid out as per the technical programme. The maintenance was good. Among The standards Co 05011 were best while CoS 767 were at par & CoPant 97222 was good. Among the entries Co 14035, CoPb 14185 & CoS 14233 were at par. Entries CoH 14261, CoLk 14203, CoLk 14204 & CoPb 14184 were good.

Entries	Lucknow	Shahjahanpur	Pantnagar	Muzaffarnagar	Uchani	Kapurthala	Faridkot	Srigangnagar	Kota
Co 14035	G	G	G	On Par	On Par	G	On Par	P	At Par
CoH 14261	P	G	P	P	G	At Par	G	G	G
CoLk 14203	Better	G	On par	Better	G	Better	G	G	G
CoLk 14204	Better	G	On Par	P	Not Planted	At Par	G	G	G
CoPb 14184	G	G	G	On Par	On Par	At Par	Better	G	G
CoPb 14185	G	P	G	On Par	G	At Par	On Par	G	At Par
CoS 14233	On par	G	G	On Par	G	Better	On Par	G	At Par
CoS 767(std)	G	Best	Best	Best	On Par	G	G	G	At Par
CoPant 97222(std)	Best	G	On Par	On Par	G	G	On Par	Best	G
Co 05011 (std)	G	On par	G	G	Best	Best	Best	G	Best

1.17 AVT (ML)-2nd Plant

Lucknow- The trial was laid out as per the technical programme. The maintenance of the trial was very good. The standard CoPant 97222 was the best, CoS 767 was On par, Co 05011 was good while CoS 8436 was poor. Among the entries Co 13035, CoH 13263, CoPant 13224, CoPb 13182 and CoLk 13204 were good.

Shahjahanpur- The trial was laid out as per the technical programme. The maintenance of the trial was very good. The standard CoS 767 was the best, CoPant 97222 Co 05011 were good while CoS 8436 was poor. Among the entries Co 13035, CoH 13263, CoPant 13224, CoPb 13182 and CoLk 13204 were good.

Pantnagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standard Co 05011 was best, CoS 767 was on par, CoPant 97222 was good while CoS 8436 was poor. Among the entries Co 13035 & CoH 13263 were on par. Entry CoPant 13224 was better. Entry CoLk 13204 was good. Only one entry CoPb 13182 was poor.

Muzaffarnagar- The trial was laid out as per the technical programme. The standard CoS 767 was best, Co 05011 was on par while CoPant 97222 & CoS 8436 were good. Among the entries Co 13035, CoH 13263, CoPant 13224 & CoLk 13204 were better. Only one entry CoPb 13182 was poor.

Uchani- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standard Co 05011 was best, CoS 767 & CoPant 97222 were good while CoS 8436 was poor. Among the entries Co 13035, CoH 13263 & CoPant 13224 were better. Entry CoPb 13182 was good & Entry CoLk 13204 were on par. The trial was excellent. Smut was observed in CoLk 13204.

Kapurthala- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standard Co 05011 was best, CoS 767 was on par while CoPant 97222 & CoS 8436 were good. Among the entries Co 13035, CoH 13263, CoPb 13182 & CoLk 13204 were good. Entry CoPant 13224 was better. The trial was excellent.

Faridkot- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standard Co 05011 was best, CoS 767 & CoS 8436 were good while CoPant 97222 was on par. Among the entries Co 13035, CoH 13263 & CoPant 13224 was better. Entries CoPb 13182 & CoLk 13204 were on par. The trial was excellent.

Sriganganagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standard CoPant 97222 was best while CoS 767, Co 05011 & CoS 8436 were good. Among the entries Co 13035, CoH 13263, CoPb 13182 & CoLk 13204 were better. Entry CoPant 13224 was good.

Kota- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standard Co 05011 was best while CoS 767, CoPant 97222 & CoS 8436 were at par. Among the entries Co 13035, CoH 13263 & CoLk 13204 were better. Entry CoPant 13224 was good. Entry CoPb 13182 was poor.

Entries	**Lucknow**	**Shahjahanpur**	**Pantnagar**	**Muzaffarnagar**	**Uchani**	**Kapurthala**	**Faridkot**	**Sriganganagar**	**Kota**
Co 13035	G	G	On Par	Better	Better	G	Better	G	Better
CoH 13263	G	G	On Par	Better	Better	G	Better	G	Better
CoPant 13224	G	G	Better	Better	Better	Better	Better	Better	G
CoPb 13182	G	G	P	P	G	G	On Par	G	P
CoLk 13204	G	G	G	Better	On Par	G	On Par	G	Better
CoS 767(std)	On par	Best	On Par	Best	G	On Par	G	G	At Par
CoPant 97222(std)	Best	G	G	G	G	G	On Par	Best	At Par
Co 05011 (std)	G	G	Best	On Par	Best	Best	Best	G	Best
CoS 8436 (std)	P	P	P	G	P	G	G	G	At Par

1.18 AVT (ML)- Ratoon

Lucknow- The trial is to be abandoned on account of very poor population*****

Shahjahanpur- The trial was laid out as per the technical programme. The standard CoS 767 was best, CoPant 97222 were good, Co 05011 was on par while CoS 8436 were poor. Among the entries Co 13035, CoH 13263 & CoPb 13182 were good. Entries CoPant 13224 and CoLk 13204 were on par.

Pantnagar- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standard Co 05011 was best, CoS 767 was on par, CoPant 97222 was good while CoS 8436 was poor. Among the entries Co 13035, CoH 13263, CoPant 13224 & CoLk 13204 were good. Entries CoPb 13182 was poor.

Muzaffarnagar- The trial is to be abandoned on account of very poor population*****

Uchani- The trial was laid out as per the technical programme. The standard CoS 767 was best, CoPant 97222 & Co 05011 were on par while CoS 8436 were poor. Among the entries Co 13035 & CoPant 13224 were on par. Entry CoH 13263 was good & CoPb 13182 & CoLk 13204 were poor.The trial was excellent at this centre.

Kapurthala- The trial was laid out as per the technical programme. The maintenance of the trial was good. The standard Co 05011 was best while CoS 767, CoPant 97222 & CoS 8436 were good. Among the entries Co 13035 & CoLk 13204 were on par. Entry CoH 13263 were good, Entry CoPant 13224 was better & CoPb 13182 was poor. The trial was excellent.

Faridkot- The trial was laid out as per the technical programme. The maintenance of the trial was good. Among the standard Co 05011 was best, CoS 767 & CoS 8436 were good while CoPant 97222 were on par. Among the entries Co 13035, CoPant 13224 & CoLk 13204 were on par. Entries CoH 13263 & CoPb 13182 were good. The trial was excellent.

Sriganganagar- The trial was laid out as per the technical programme. Among the standard CoPant 97222 were at par, Co 05011 was better while CoS 767 & CoS 8436 were poor. Among the entry Co 13035 were at par, CoPant 13224 was better & CoH 13263 & CoLk 13204 were good.

Kota- Not conducted*****

Entries	**Lucknow**	**Shahjahanpur**	**Pantnagar**	**Muzaffarnagar**	**Uchani**	**Kapurthala**	**Faridkot**	**Sriganganagar**	**Kota**
Co 13035	**The trial is to be abandoned on account of very poor population**	G	G	**The trial is to be abandoned on account of very poor population**	On Par	On Par	On Par	At Par	**Not conducted**
CoH 13263		G	G		G	G	G	G	
CoPant 13224		On par	G		On Par	Better	On Par	Better	
CoPb 13182		G	P		P	P	G	P	
CoLk 13204		On Par	G		P	On Par	On Par	G	
CoS 767(std)		Best	On par		Best	G	G	P	
CoPant 97222(std)		G	G		On par	G	On Par	At Par	
Co 05011 (std)		On Par	Best		On Par	Best	Best	Better	
CoS 8436 (std)		P	P		P	G	G	P	

Fluff supply programme:

Uchani :- A total of 1503 seedlings were field transplanted in July 2018.
Lucknow :- About 5000 seedlings were successfully transplanted for 2018-2019.
Shahjahanpur :- 3300 seedlings were obtained and transplanted
Pantnagar :- A total of 1400 seedlings were transplanted in 2018.
Uchani :- A total of 1503 seedlings were field transplanted in 2018.
Kapurthala :- A total of 5587 seedlings were successfully raised and transplanted.

General Observations:

1. There was severe incidence of wilt at IISR, Lucknow centre.
2. In some of the centres viz., Karnal, Uchani, Kapurthala and Faridkot, the plant population and maintenance of trial was excellent & higher yields may be expected at these centre. In Sriganganagar and Kota, plant population was moderate in most of the trials. In other centre such as Lucknow, Shahjahanpur, Pantnagar, Muzaffarnagar invariability problem of gaps, lodging etc. was observed. It is desired that for meaningful comparison, these issues may be taken into account.

B. CROP PRODUCTION

1) Centre-wise status of trials allotted and conducted

Experiment No	AS68	AS70	AS71	AS72	AS73	AS74
Title of Experiment	Impact of integrated application of organic and inorganic in improving soil health and sugarcane productivity	Scheduling irrigation with mulch under different sugarcane planting methods	Carbon sequestration assessment in sugarcane based cropping system	Agronomic performance of elite sugarcane genotypes	Assessment of climate change impact on sugarcane productivity	Evaluation of sugarcane varieties for drought tolerance
Lucknow	Conducted	Conducted	Conducted	Conducted	Conducted	Conducted
Shahjhanpur	Conducted	Conducted	Conducted	Conducted	Conducted	Conducted
Pantnagar	NA					
Muzaffarnagar	NA					
Uchani	Conducted	Conducted	Conducted	Conducted	Conducted	Conducted
Kapurthala	NA					
Faridkot	Conducted	Conducted	Conducted	Conducted	Conducted	Conducted
Srigangapur	NA					
Kota	Not conducted	Conducted	Conducted	Conducted	Conducted	Conducted

* NA- Not allotted (No Agronomy Post)

2) Salient observations made

Centre	AS68	AS70	AS71	AS72	AS73	AS74
Lucknow	T6, i.e. application of FYM @20 t/ha with soil test based inorganic fertilizer was looking better	Paired row trench planting with mulching was showing good	Experiment was harvested and soil analysis is being conducted	Midlate varieties are planted but in Early maturing trial only Cos 13231 is planted. 90 cm spacing is looking better than 120 cm	Data is being compiled	The experiment has average growth. CoLk 92204 is looking

	and was at par with T9 having 10t/ha FYM along with soil test based inorganic fertilizers	growth.		spacing. Trial has average growth.		better in growth.
Shahjhanpur	T9 having 10t/ha FYM along with soil test based inorganic fertilizers is looking at par with T6, i.e. application of FYM @20 t/ha with soil test based inorganic fertilizer	Paired row trench planting with mulching and convention al flat planting with mulch at 1.0 IW/CPE ratio is showing good growth		Early: CoPb 13181 has more number of shoots but Co238 has better canegrowth 90 cm spacing is looking better than 120 cm	Data is being compile d	1.0 I W/CPE ratio is better than 0.3 IW/CPE ratio CoS 13231 has good growth Rainfall is sufficient
Uchani	Treatment T6 and T9 were looking better in growth	Paired row planting with mulch at 30: 120 cm spacing has better overall growth performanc e as compared to 75 cm spacing. There was no significant difference between the irrigation levels (1.0, 0.8 and 0.6 IW/CPE) due to continuous rainfall	The data has been submitted to the concerned quarter. Pooled analysis will be done and will be presented in next AICRP workshop	**Early:**. Co 0238 (Highest cane yield expected) followed by Co 05009 and CoJ64, CoS 13231 and CoPb 13181 showed similar performance. Higher girth was noticed in all the varieties at 120 cm spacing as compared to 90 cm spacing. **Mid late trial:** On an average, tillers reduced when spacing was increased from 90 cm to 120 cm. Higher girth was noticed	Data is being compile d	Six entries (3 from Early (Co 0118, Co 0238 and CoH 160) and 3 from midlate (CoH 119, Co 05011 and CoH 167) were planted. at two irrigation levels (1.0 and 0.3 IW/CPE ratio). There were no

		from April to June months.		in all the varieties at 120 cm spacing as compared to 90 cm spacing. Varieties CoPant 13224, CoH 13263 and Co 13035 showed better and similar performance as compared to rest of the varieties.		significant differences in growth at 1.0 and 0.3 IW/CPE ratio due to frequent rainfall from April to July months.
Faridkot	T5, T6, T7, T8 and T9 were looking better in growth	Paired row trench planting with mulching was looking better than flat planting	The data will be presented next AICRP workshop	The experiment has excellent growth. At 120 cm spacing varieties were showing better girth and overall growth but number of canes per plot were better at 90 cm spacing	Data is being compiled	Three early maturing varieties (CoPb 92, Co 118 and CoJ 64) and Midlate maturing varieties (CoPb 91, CoPb 93 and CoPb 94) were planted at two irrigation levels. Due to sufficient rain in the season no much effect of irrigation was visible although the growth

						was better at 1.0 IW/CPE ratio
Kota	Not conducted	120 cm spacing was better Mulching was better than no mulch treatments Variety planted was CoPk 5191	T1 and T2: Soybean-wheat-moong – wheat was sown instead of Rice –wheat system	Early: Co 13034was better in growth and plant population than other varieties. Co 5009 was better check. In R1, CoPb 13181 was having lodging Midlate: Co 5011 was better in growth but tip drying and yellowing was there. Co Pant 97222was not having good growth. CoPb 9181 was planted instead of CoPb 13182. Co 13035 and CoPant 13224 was having excellent growth.	Data is being compiled	CoH 9264 was very good followed by CoS 8436

C. PLANT PATHOLOGY

A monitoring team constituted has visited at all the respective centres under NWZ of AICRP during 27.11.18 to 07.12.18. Out of ten, only six centres had taken up Pathology experiments. Observations of the centres are presented below.

Brief Summary of Plant Pathology Division under NWZ

The experiments of Plant Pathology under AICRP (S) allotted and conducted during 2018-19 by various centre/institute of North Western Zone. Brief summary is as fallow:

Sl. No.	Experiments	IISR, Lucknow	SRI, Shahjahanpur	GBPUAT Pantnagar	HAU Uchani	SBI-RC Karnal	PAU, Kapurthala
1.	PP-14	C	C	NA	C	C	C
2.	PP-14 (a)	C	C	NA	C	C	C
3.	PP-17 (a)	C	C	C	C	C	C
4.	PP-17 (b)	C	C	C	C	NA	C
5.	PP-17 (c)	C	NA	NA	NA	NA	C
6.	PP-17 (d)	C	C	C	C	C	C
7.	PP-22	C	C	C	C	C	C
8.	PP-23	C	C	NA	C	C	C
9.	PP-31	NA	C	NA	C	NA	C
10.	PP 33	**NC**	NA	**NC**	C	NA	NA

Abbreviations: C = Conducted, NA= Not allotted, NC= Not conducted

1. ICAR-Indian Institute of Sugarcane Research, Lucknow (UP)

PP 14: Identification of pathotypes of red rot pathogen

This experiment was conducted with planting of 18 host differentials on **20 Oct – 25 Oct, 2018** for the testing of the behaviour against **fourteen** local isolates excluding Cf 08 and Cf 09. Experiment was harvested and observations had been taken. Data compilations are in progress.

PP 14 (a): Maintenance of isolates of red rot pathogen

Red rot cultures of designated pathotypes and local isolates have been maintained on oat meal agar medium in *in-vitro* condition.

PP 17 (a): Evaluation of zonal varieties for resistance to red rot

This experiment was planted on 21-22 February 2018 with 39 entries of 6 trials along with check varieties. Inoculation was done on 23-25 August 2018 with two pathotypes Cf 08 and Cf 09 by plug and Nodal cotton swab methods of inoculation, separately. Data compilations are going on.

PP 17 (b): Evaluation of zonal varieties for resistance to smut
Thirty nine entries of 6 trials along check varieties were conducted and planted on21-22 February 2018. Smut was noticed on some entries viz; Co 13035, Co 15027, CoS 13231, CoPant 13224, CoS 14233, CoLk 15207 and CoLk 15209.

PP 17 (c & d): Evaluation of zonal varieties for resistance to wilt and YLD
These experiments were planted and data compilation is in progress.

PP 22: Survey of sugarcane diseases naturally occurring in the area on important Sugarcane varieties
Survey work carried out in various sugar mill zones. Red rot, smut, GSD, Pokkah boeng and LSD were reported from different sugar mill zones in natural conditions.

PP 23: Assessment of elite and ISH Genotypes for resistance to red rot of sugarcane
Twenty six ISH genotypes were tested against Cf 08 and Cf 09 by plug and nodal method of inoculation. Red rot was evaluated on 19-20 November, 2018. Data compilations are going on.

PP 33: Management of YLD through meristem culture
This experiment was not conducted**.**

2. Sugarcane Research Institute (UPCSR), Shahjahanpur (UP)

PP 14: Identification of pathotypes/races in red rot pathogen
Ten isolates/pathotypes of *C. falcatum* were tested for their behaviour on 19 host differentials by plug method under field conditions. Seven existing pathotypes viz; Cf 01, Cf 02, Cf 03, Cf 07, Cf 08, Cf 09 and Cf 11 and three local isolates R 1102 (CoS 8436), R 1304 (CoS 07250) and R 1602 (Co 0238) were inoculated. Experiment was harvested and data compilation work is in progress.

PP 17 (a): Evaluation of zonal varieties for resistance to red rot
Total thirty nine entries were planted on 30.03.2018 and inoculation was carried out with Cf 08 and Cf 09 pathotypes by plug and nodal method of inoculation. Data were evaluated on 15.11.2018. Varieties such as CoPb 13181, CoH 13263, CoLk 13204, CoPb 15212 and CoPb 15214 were reported as susceptible against red rot. Some entries of IVT were not germinated.

PP 17 (b): Evaluation of genotypes/varieties against smut disease
Thirty nine entries of six trials were planted for smut testing. Variety Co 1158 was used as smut susceptible check. Incidence of the smut was recorded in Co14034, Co 13035, CoS 13231, CoPb 15213, CoS 15231 and CoS 15234 during monitoring. Data compilation work is in progress.

PP 17 (d): Evaluation of varieties/genotypes against yellow leaf disease
The incidence of Yellow leaf disease was carried in breeding trial. Data compilation work is going on.

PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties
Survey works were conducted in various sugar mill zones of Central UP during pre and post monsoon. Incidence of red rot reported on variety Co 0238 from various sugar factory zones of central UP. Mix infection of red rot and wilt were also reported in Co 0238. Smut, GSD, Pokkah boeng, Mosaic and YLD were reported from various sugar factories zones.

PP 23: Assessment of elite and ISH genotypes for resistance to red rot
Total of twenty three ISH genotypes were tested for red rot resistance against Cf 08 and Cf 09 by plug method of inoculation. Two ISH genotypes AS 04-245 and GU 07-3774 were found susceptible to Cf 08 and Cf 09. Data compilation work is going on.

PP 31: Screening, epidemiology and management of pokkah boeng in sugarcane
Nineteen genotypes/varieties were tested for pokkah boeng. Variety Co 0238 was used as susceptible check for pokkah boeng. Of seventeen, CoSe 15455, CoSe 8436, CoS 11271, CoSe 13452, CoPb15234 and S. 4619/07 were affected by pokkah boeng.

3. G.B. Pant University of Agriculture & Technology, Pantnagar, (Uttarakhand)

PP 17 (a): Evaluation of zonal varieties for resistance to red rot
Total thirty six entries were planted on 20 March, 2018 and inoculation was done on 21-22 August 2018 with Cf 08 and Cf 09 pathotypes by plug and nodal method of inoculation. Experiment was harvested and data evaluated on 15.11.2018. Data was not compiled.

PP 17 (b): Evaluation of genotypes/varieties against smut disease
Thirty six entries of six trials were planted for YLD testing. Variety Co 1158 was used as smut susceptible check. Incidence of the smut was observed in **Co**Pb 14211, Co 14034, CoPb 15213, Co 15027 and Co 14035 during monitoring. Data compilation work is in progress.

PP 17 (d): Evaluation of varieties/genotypes against yellow leaf disease
Thirty six entries of six trials were planted for YLD testing. Data was not taken.

PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties
Survey works were conducted. Data was not compiled.

PP 33: Management of YLD through meristem culture
Experiment was allotted and not accepted due to lack of facilities.

4. Chaudhary Charan Singh Haryana Agricultural University Regional Research Station, Uchani, Karnal (Haryana)

PP 14: Identification of pathotypes of red rot pathogen
Nineteen differentials were planted on 28.03.2018 and inoculated with designated pathotypes (Cf 01, Cf 02, Cf 03, Cf 07, Cf 08, Cf 09, Cf 11) and five local isolates by plug method of inoculation. Observation had been taken and not compiled during monitoring.

PP 14 (a): Maintenance of isolates of red rot pathogen
Seven designated pathotypes viz; Cf 01, Cf 02, Cf 03, Cf 07, Cf 08, Cf 09, Cf 11 and five local isolates were maintained.

PP 17 (a): Evaluation of zonal varieties for resistance to red rot
Total thirty nine entries were planted on 15.03.2018 and inoculation was done with Cf 08 and Cf 09 pathotypes by plug and nodal method of inoculation. Observation was taken and data compilation is in progress.

PP 17 (d): Evaluation of varieties/genotypes against yellow leaf disease
Thirty six entries of six trials were planted for YLD testing. Data was not taken.

PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties

Survey works were conducted in various sugar factories zones of Haryana during pre and post monsoon. Incidence of red rot reported on varieties viz; Co 89003, CoS 8436, CoJ 85 in various places of Haryana. Severe infection of smut was reported in Co 023. Smut was also reported in Co 89003 and CoH 119 in various sugar factories zones. Wilt was reported in Co 89003 and pokkah boeng was reported in CoS 8436, Co 0238, CoH 119, Co 0118, CoH 160 and CoJ 85. GSD, Mosaic, eye spot were reported on various ruling varieties from different sugar factories zones.

PP 23: Assessment of elite and ISH genotypes for resistance to red rot

Total of twenty five ISH genotypes were planted on 13.03.2018 for red rot resistance against Cf 08 by plug method of inoculation. Data work not compiled.

PP 31: Screening, epidemiology and management of pokkah boeng in sugarcane

One hundred five varieties were tested for pokkah boeng disease. Pokka boeng was reported in CoS 8436, CoH 110, CoH 156, CoH 152, Co 7717, CoH 164, CoH 119, CoH 167, CoH 160, Co 0237, CoH 56 and CoH 133. Variety Co 0238 was reported highly susceptible to pokkah boeng. Management of pokkah boeng experiment was conducted with three standard treatments. Two varieties (Co 0238 and CoS 8436) were used for experimentation. Treatment soaking with 0.1 per cent carbendazim and foliar spray with carbendazim were reported most effective to check pokkah boeng and also enhance germination.

PP 33: Management of YLD through meristem culture

This experiment was conducted and varieties viz: CoH 160, Co 89003, Co 0238, CoH 119 and Co 0118 were raised through meristem culture for the management of YLD. Data was not compiled.

5. ICAR- Sugarcane Breeding Institute, Regional Research Centre, Karnal (Haryana)

PP 14: Identification of pathotypes of red rot pathogen

Nineteen host differentials were planted and inoculation was done with 7 existing pathotypes and 5 new isolates by plug method under field conditions. Data compilation work is in progress.

PP 17 (a): Evaluation of zonal varieties for resistance to red rot

Thirty nine zonal varieties were planted with eight standards and inoculation was done by using Cf 08 and Cf 09 pathotypes by plug and nodal method of inoculation. Data was not compiled.

PP 17 (d): Evaluation of varieties/genotypes against yellow leaf disease

The incidence of Yellow leaf disease had been taken. Data was not compiled.

PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties

Survey works were conducted in various sugar mill zones of Haryana and UP. Data compilation work is in progress.

PP 23: Assessment of elite and ISH genotypes for resistance to red rot

Total of twenty seven ISH genotypes were tested for red rot resistance against Cf 08 and Cf 09 by plug method of inoculation. Data compilation work is going on.

6. Punjab Agricultural University, Regional Research Station Kapurthala (Punjab)

PP 14: Identification of pathotypes/races in red rot pathogen
Nineteen host differentials were planted and inoculation was done with existing pathotypes Cf 08 and Cf 09 by plug method under field conditions. Data compilation work is in progress.

PP 17 (a): Evaluation of zonal varieties for resistance to red rot
Total thirty nine entries were planted and inoculation was done with Cf 08 and Cf 09 pathotypes by plug and nodal method of inoculation. Data compilation work is in progress.

PP 17 (b): Evaluation of genotypes/varieties against smut disease
Thirty nine entries of six trials were planted for smut testing. . Incidence of the smut was reported in CoLk 15203, CoLk 15204, CoLk 15205, CoLk 15208, CoLk 15209, Co 15026, CoLk 14203, CoPb 14184, CoS 14233 and CoS 13231. Data compilation work is in progress.

PP 17 (c): Evaluation of genotypes/varieties against wilt
Total thirty nine entries were planted in infected soil with *Fusarium sacchari* culture. Initial symptom of wilt was reported on Co 7717 and Co 89003. Data compilation work is in progress.

PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties
Survey works were conducted in sixteen sugar mill zones. Incidence of red rot reported on variety CoJ 6, CoJ 85, CoJ 88, Co 89003 from various sugar factory zones. Smut was reported in Co 0238 (Ratoon). GSD and Pokkah boeng were also reported in Co 0238.

PP 23: Assessment of elite and ISH genotypes for resistance to red rot
Total of twenty seven ISH genotypes were inoculated against Cf 08 and Cf 09 by plug method of inoculation. Data compilation work is going on.

PP 31: Screening, epidemiology and management of pokkah boeng in sugarcane
Nineteen genotypes/varieties were planted and tested for pokkah boeng. Management of pokkah boeng in sugarcane was also planted with three treatments. Data was not compiled.

General observations:
The experiments under Plant Pathology division of each center were good in condition and well labeled during monitoring. At Ganganagar and Kota center it was observed that the most of the entries of Breeding trial were affected with YLD. GSD and Smut was also noticed in some entries at Ganganagar and Kota center.

D. ENTOMOLOGY

Center-wise status of trials allotted and conducted

A: Allotted C: Conducted NC: Not Conducted

Grading of Entomology Experiments at different location

Experiment No.	E 4.1		E. 28		E. 30		E. 34		E. 38		E. 39	
Centres	Alloted	Conducted	Alloted	Conducted	Alloted	Conducted	Alloted	Conducted	Alloted	Conducted	Alloted	Conducted
IISR Lucknow	A	C	A	C	A	C	A	C	A	NC	A	NC
UPCSR Shahjahanpur	A	C	A	C	A	C			A	C	A	C
Panthnagar	-	-	-	-	-	-	-	-	-	-	-	
Muzaffarnagar	-	-	-	-	-	-	-	-	-	-	-	-
Uchani	A	NC	A	NC	A	NC	A	NC	A	NC	A	NC
Karnal	A	C	A	C	A	C			A	NC		
Kapurthala	A	NC	A	NC	A	NC			A	NC	A	NC
Faridkot	-	-	-	-	-	-	-	-	-	-	-	-
Sri Ganganagar	-	-	-	-	-	-	-	-	-	-	-	-
Kota	-	-	-	-	-	-	-	-	-	-	-	-

Centeres **Experiments**	**IISR Lucknow**	**UPCSR Shahjahanpur**	**Uchani**	**SBI-Karnal**	**Kapurthala**
E 4.1					
IVT (Early) IVT (Midlate)	Excellent	NC	NC	Excellent	NC
AVT (E)-I P	Good	Good	NC	Excellent	NC
AVT (E)-II P	Average	Good	NC	Good	NC
AVT (E)-Ratoon	Average	Average	NC	Good	NC
AVT (ML)-I P	Good	Good	NC	Excellent	NC
AVT (ML)-II P	Good	Good	NC	Good	NC
AVT (ML)-Ratoon	Average	Average	NC	Good	NC
E. 28	Good	Good	NC	Good	NC
E. 30	Good	Good	NC	Good	NC
E. 34	Excellent	NA	NC	NA	NC
E. 38	NC	Excellent	NC	NC	NC
E. 39	NC	Excellent	NC	NA	NC

Note: Each trial was rated in three point scales as 1. Excellent, 2. Good, 3. Average and 4. Poor

NA-not allotted NC- not conducted

Rating was observed on (i) weather the trial was conducted as per the technical programme (ii) general growth and maintenance of the trial and (iii) If the trial was unfit for evaluation grade POOR was given.

Detailed report of the Individual Centers

IISR Lucknow

- As per the technical programme of 2018-19, six experiments were allotted to this centre. However, only four experiments were conducted.

- Project E.38 and E.39 were not conducted.

- In the experiments, crop stand was not uniform and crop was affected by the incidence of termite (35.68%) and grazing by wild animals. Wilt was another problem which has affected the crop stand. Crop stand was also affected because of low germination percentage (43.22%).

- In Project **E.4.1** Evaluation of zonal varieties/genotypes for their reaction against major insect pests,

  IVT Early trial nine entries and three checks with three replications

  AVT Early first plant trial, four entries and three checks with three replication

  AVT Early ratoon trial wirh, three entries and three checks with four replication

  IVT Midlate trial with eleven entries and three checks with two replications

  AVT Midlate First plant trial with seven entries and three checks with two replications

  AVT Midlate Second plant trial with five entries and four checks with three replications in CRBD design were conducted as per the technical programme.

- In project E.28, Rowing survey was conducted in different sugar factory areas to identify the key insect pests of sugarcane in the area

- In Project **E.30** Experiment on Monitoring of insect pests and bio agents in sugarcane agro-ecosystem was carried out with Variety COLK 94184. Low to moderate incidence of ESB, TSB and Termite was noticed.

- In Project **E.34** Standardization of simple and cost effective technique for the mass multiplication of bio agents of sugarcane pests, *Eumicrosoma sp* was successfully mass multiplied by using black bug eggs in the laboratory at this centre.

UPCSRI Shahajahanpur

- Five entomological trials were allotted to this centre and all the trials were conducted as per the specifications mentioned in the technical programme.

- In Project **E.4.1** Evaluation of zonal varieties/genotypes for their reaction against major insect pests, except IVT early and IVT midlate experiments all other genotype trials were conducted as per the technical programme. Incidence of borer pests was low. All the genotypes including standards showed less susceptible reaction to shoot borer and top borer.

- In project E.28, Rowing survey was conducted in different sugar factory areas of Shahajahanpur to identify the key insect pests of sugarcane in the area.

- In Project **E.30** Experiment on Monitoring of insect pests and bio agents in sugarcane agro-ecosystem was carried out with the Variety UP 05125. Top borer incidence was low. Sugarcane leaf hopper Pyrilla incidence was in the range of 2-3 adults/nymphs/leaf.Pyrilla population was kept under check by the parasitoids *Telenomas beneficiens* and *Epiricania melanoleuca.*

- In project E.38 Formulation of IPM module of sugarcane insect pests UP 05125 variety was used .IPM block was found better than farmers practice block with lower incidence of pests and higher number of healthy millable canes.

- In project E.39 Pilot evaluation of waterless pheromone trap and water basin trap against sugarcane borer was conducted. Maximum stalk borer adults were trapped in waterless delta plus trap (5no.) while minimum number of adults (2 no) were trapped in water basin trap.

Pantnagar

- No entomological trials were assigned to this centre.

- In this centre top shoot borer incidence was more. Apart from this lower incidence of mealy bug was also observed in many entries(Co 14034,CoLk 14201,Co Pb 13181,CoJ 64and CoLk 15201)

Muzaffarnagar

- No entomological trials were assigned to this centre.

- In this centre, rodent problem was very severe. Because of rodent problem, lodging of canes was seen in almost all the breeding trials.

- Incidence of a un identified coccid/whitefly? was observed more frequently in this centre. Its incidence was comparatively more on genotype CoLk 13204.

- Smut, pakka boeng and YLD diseases were also observed at this centre.

Uchani

- As per the technical programme of 2017-18, all the six entomological experiments were allotted to this centre. But entomology programme was not implemented because of non availability of entomologist.

- Breeding experiments were implemented in a good manner.

- Among the insect pests, activity of whitefly and top borer was observed

- Among the diseases,Smut, pakka boeng and YLD diseases were also observed at this centre.

Karnal

- As per the technical programme of 2017-18, four entomological experiments viz; E. 4.1,E.28,E.30 and E.38were allotted to this centre. But project E.38 was not implemented.

- In Project **E.4.1** Evaluation of zonal varieties/genotypes for their reaction against major insect pests,

  IVT Early trial nine entries and three checks with three replications

  AVT Early first plant trial, four entries and three checks with three replication

  AVT Early ratoon trial with, three entries and three checks with four replication

  IVT Midlate trial with eleven entries and three checks with two replications

  AVT Midlate First plant trial with seven entries and three checks with two replications

  AVT Midlate Second plant trial with five entries and four checks with three replications in CRBD design were conducted as per the technical programme.

- In this centre during the period of report both borers and sucking pests did not cross the threshold level. Hence all the genotypes including standards showed less susceptible reaction to borers and sucking pests. But the incidence of termites has affected the crop stand in some patches.

- In project E.28, Rowing survey was conducted in different sugar factory areas around Karnal to identify the key insect pests of sugarcane in the area

- In Project **E.30** Experiment on Monitoring of insect pests and bio agents in sugarcane agro-ecosystem was carried out with the Variety Co 0238.This experiment was in good condition with LS reaction from different sugarcane pests, except for the incidence of termites in some patches. Natural incidence of egg parasitoid *Trichogramma acheae* was also found parasitizing all the borer eggs and kept them under check

Kapurthala

- As per the technical programme of 2017-18, all the six entomological experiments were allotted to this centre. But entomology programme was not implemented because of non availability of entomologist.

- Breeding trials were found in excellent condition

- Incidence of sugarcane leaf hopper, Pyrilla was more but its parasite *Epiricania meoanoluca* also appeared in good numbers and kept the hoppers under check.

Faridkot

- No entomological trials were assigned to this centre.

- All the breeding trials including ratoons were in excellent condition. Expression of all the genotypes was at its best in this centre.

- Early shoot borer, Pyrilla and mealy bug occurred below threshold level.

Sriganganagar

- No entomological trials were assigned to this centre.
- In breeding experiments whitefly incidence was observed across different experiments and in all entries including checks.
- Below threshold incidence of Top shoot borer and grasshoppers was also observed at this centre.
- Higher incidence of stalk borer in entries Co 15023, Co 15026 and CoLk 15207 resulted in poor growth and lodging of those entries.

Kota

- No entomological trials were assigned to this centre.
- All the Agronomy experiments were conducted at this centre were in excellent condition and were conducted as per the specification defined in the technical programme.
- YLD incidence was observed in all the experiments. Growth and plant population was adequate.
- Whereever the genotype CoPk 05191 was used the grassy stunt incidence was more.

MONITORING REPORT OF NORTH CENTRAL & NORTH EASTERN ZONES (CROP SEASON 2018-19)

The monitoring ream comprising the Team Leader and members /facilitator executed monitoring work of experimental trials of North Central & North Eastern Zones for the crop season 2018-19 as per following schedule.

Team members	Centres visited	Date of visit
Team Leader • Dr. K. N. Mandal Senior Breeder (Plant Breeding) Sugarcane Research Station, Bethuadahari **Members** • Dr. A. Baitha Principal Scientist (Entomology) ICAR-IISR, Lucknow • Dr. M. K. Tripathi Principal Scientist (Agronomy) ICAR-IISR, Lucknow • Dr. D. Dutta Scientist (Plant Pathology) Sugarcane Research Station Buralikson **Facilitator** • Dr**.** S. K. Awasthi Chief Technical Officer ICAR-IISR, Lucknow	Genda Singh Sugarcane Breeding and Research Institute, UPCSR, Seorahi, U.P.	02.12.2018
	ICAR-IISR Regional Centre, Motipur, Bihar	03.12.2018
	Sugarcane Research Institute, CRAU, Pusa, Bihar.	04.12.2018
	Sugarcane Research Station, Bethuadahari, W.B.	06.12.2018
	Sugarcane Research Station, AAU, Buralikson, Assam.	08.12.2018

Summary:

1. **G.S. Sugarcane Breeding & Research Institute, Seorahi, Kushinagar (U.P): Date of Visit 02.12.2018:** The Centre has laid out all the trials allotted to the Centre which includes Breeding, Agronomy and Plant Pathology. Overall the trails were very good. However, little more attention is required for weed management and maintenance of plant population.
2. **ICAR-IISR Regional Centre, Motipur, Muzaffarpur, Bihar: Date of visit 03.12.2018**: The Centre has laid out all the trials allotted which include trials of Breeding and Plant Pathology. Overall the trials were Excellent. Fields were well

maintained, weed free and the crop growth was very good with good population and dark green canopy.

3. **Sugarcane Research Institute (Rajendra Central Agril. University), Pusa, Bihar: Date of Visit 04.12.2018:** The Centre has laid out all the trials of Breeding, Agronomy, Plant Pathology and Entomology. Overall the trails were good. Little more attention is required for management and maintenance of plant population and growth.
4. **Sugarcane Research Station (Department of Agriculture), Bethuadahari, West Bengal: Date of Visit 06.12.2018:** This is the only Centre in West Bengal catering to the needs of sugarcane farmers in the State. The Centre functions under Department of Agriculture. Logistic support from the Department of Agriculture for research is nominal. Since this is the only Centre carrying out sugarcane research in the state, the Centre needs strong financial and technical support for enhancing sugarcane production and productivity in the state. A strong linkage with the only sugar factory in the state needs to be strengthened for varietal trials and demonstration plots for the benefits of the farmers in the area. The Centre has laid out the trials of Breeding and Agronomy. Overall the trails were very good.
5. **Sugarcane Research Station, Buralikson, Assam: Date of Visit 08.12.2018:** The Centre has laid out three trials of Breeding and two trials of Pathology. In AVT (Early)-I Plant and AVT (Early)-II Plant, local variety CoBln 9103 and local entry CoBln 14501 were planted in place of standard CoLk 94184 and CoSe 01421. In AVT (Early)-Ratoon in place of standard CoLk 94184 and CoSe 01421 local variety CoBln 9103 and local entries CoBln 15501 and CoBln 502 were planted. Heavy weed population in all the trials hampers the expression of genetic potential of the genotypes.

A. CROP IMPROVEMENT

Specific Remarks

- Breeding trials at all locations were laid out as per the technical programmes, except Buralikson
- The overall comparative rating of the Centres with respect to various trials is: **Excellent** at Motipur, **Good** at Seorahi, Pusa and Buralikson and **Very Good** at Bethuadahari. It is possible to improve the trials at Buralikson by lifting adequate seed materials from Pusa centre well in time.
- The rating of entries in individual trial / Centre is as follows:

1. Overall Grading of Trials

Trials/ Centre	Seorahi	Pusa	Motipur	Bethuadhari	Buralikson
IVT (Early)	Good	Good	Excellent	Very good	--
AVT(Early) I Plant	Very good	Very good	Excellent	Very good	Good
AVT (Early) II Plant	Good	Very good	Very good	Very good	Good
AVT (Early) Ratoon	Good	Average	Very good	Very Good	Average
IVT (Midlate)	Good	Very good	Excellent	Very good	--
AVT (Midlate) I Plant	Very good	Good	Excellent	Very good	--
Remarks / Pest and Disease	Minor incidence of white fly was observed in breeding trials.	The incidence of top borer (5-6%), Plassey borer (2-3%), white fly, mealy bug, pyrilla, scale insects (traces) was observed.	Minor incidence of termites, Plassey borer and top borer was observed	The incidence of scale insect (2%) was observed in CoP 14438, CoSe 14455, CoP 06436, CoP 9301.There was minor incidence of Plassey borer and mealy bug in breeding trials.	The severe damage of sugarcane by parrot in breeding trials. There was minor incidence of aphids, Plassey borer, woolly aphids and top borer in trials.

*Scoring of the trial was based on (i) whether the trial was conducted as per the technical programme and (ii) general growth and maintenance of the trial.

PERFORMANCE OF ENTRIES IN EACH TRIAL

2. Initial Varietal Trial (Early)

Entry / Locations	Seorahi	Pusa	Motipur	Bethuadhari	Buralikson*	Other information
CoBln 15501	Poor	Poor	Poor	**Not Planted**		Severe Wilt infestation recorded all the centres
CoLk 15466	Good	Very good	Very good	Very good		Performs well across the centres except Seorahi
CoLk 15467	Average	Average	Good	Good		Short plant height all the centers
CoP 15436	Very good	Good	Excellent	Very good		Performs well across the centres except Pusa
CoP 15437	Average	Good	Good	Very good		
CoSe 15451	Poor	Average	Poor	Good		
CoSe 15452	Average	Average	Excellent	Very good		Very good Performance at Motipur & Bethuadahari, but average other two centres
CoSe 15455	Good	Very good	Very good	Very good		
CoSe 15456	Very good	Very good	Very good	Very good		Performs well across the centres
Standards CoLk 94184	Very good	Average	Excellent	Excellent		
CoSe 95422	Average	Very good	Very good	Good		
CoSe 01421	Average	Good	Very good	Average		
Overall Performance of the Experiment	Good	Good	Excellent	Very good		

***** Not planted as the planting material from Pusa has not reached the station in time for planting.

3. AVT (Early)-I Plant

Entry / Locations	Seorahi	Pusa	Motipur	Bethuadhari	Buralikson	Other information
CoLk 14206	Very good	Average	Excellent	Very good	Good	
CoP 14437	Good	Good	Excellent	Excellent	Very good	Performs well at Motipur, Bethuadahari & Buralikson
CoSe 14451	Very good	Very good	Very good	Very good	Good	Lodging at Motipur
CoSe 14454	Excellent	Very good	Excellent	Very good	Very good	Performs well across the centres but Lodging at Motipur
Standards CoLk 94184	Very good	Poor	Very good	Excellent	**Not Planted**	Local variety CoBln 9103 planted at Buralikson
CoSe 95422	Very good	Very good	Excellent	Very good	Very good	
CoSe 01421	Good	Good	Very good	Good	**Not Planted**	Local entry CoBln 14501 planted at Buralikson
Overall Performance of the Experiment	Very good	Very good	Excellent	Very good	Good	

4. AVT (Early)-II Plant

Entry / Locations	Seorahi	Pusa	Motipur	Bethuadhari	Buralikson	Other information
CoP 13437	Average	Very good	Average	Average	Very good	
CoSe 13451	Very good	Very good	Very good	Very good	Good	The entry performs very well in many centres except Buralikson
CoSe 13452	Excellent	Good	Very good	Excellent	Average	Very good performance at Seorahi & Bethuadahari but poor plant stand at Pusa & Buralikson
Standards CoLk 94184	Good	Good	Excellent	Very good	**Not Planted**	Local variety CoBln 9103 planted at Buralikson
CoSe 95422	Average	Very good	Excellent	Very good	Very good	
CoSe 01421	Poor	Very good	Good	Good	**Not Planted**	Local entry CoBln 14501 planted at Buralikson
Overall Performance of the Experiment	Good	Very good	Very good	Very good	Good	

5. AVT (Early)-Ratoon

Entry / Locations	Seorahi	Pusa	Motipur	Bethuadhari	Buralikson	Other information
CoP 13437	Good	Average	Good	Good	Good	
CoSe 13451	Average	Poor	Poor	Very good	Average	
CoSe 13452	Good	Poor	Very good	Good	Average	
Standards CoLk 94184	Excellent	Good	Very good	Excellent	**Not Planted**	Local variety CoBln 9103 was planted at Buralikson
CoSe 95422	Average	Good	Excellent	Very good	Good	Poor plant population at Seorahi
CoSe 01421	Poor	Poor	Good	**Not Planted**	**Not Planted**	Local entries CoBln 15501 and CoBln15502were planted at Buralikson
Overall Performance of the Experiment	Good	Average	Very good	Very good	Average	

6. IVT (Midlate)

Entry / Locations	Seorahi	Pusa	Motipur	Bethuadhari	Buralikson*	Other information
CoBln 15502	Poor	Poor	Average	Average		Severe wilt infestation across the centres
CoLk 15468	Good	Good	Excellent	Very good		
CoLk 15469	Good	Good	Very good	Good		Poor Plant population at Seorahi
CoP 15438	Very good	Good	Very good	Good		
CoP 15439	Good	Good	Excellent	Very good		
CoP15440	Good	Good	Very good	Very good		
CoP 15441	Good	Very good	Very good	Excellent		Performs well all the centres except Seorahi
CoSe 15453	Very good	Excellent	Excellent	Very good		Performs well across the centres
CoSe 15454	Good	Good	Very good	Very good		
CoSe 14457	Very good	Good	Very good	Very good		Very good performance at Seorahi, Motipur & Bethuadahari but poor plant population at Pusa
Standards BO 91	Good	Very good	Very good	Good		
CoP 9301	Average	Good	Very good	Very good		
CoP 06436						
Overall Performance of the Experiment						

***** Not planted as the planting material from Pusa has not reached the station in time for planting.

7. AVT (Midlate)-I Plant

Entry / Locations	Seorahi	Pusa	Motipur	Bethuadhari	Buralikson*	Other information
CoLk 14208	Very good	Good	Excellent	Excellent		Performs well across the centres except Pusa
CoLk 14209	Very good	Good	Excellent	Very good		Very good entry with thick canes and good NMC but Poor plant population at SRI, Pusa
CoP 14438	Very good	Good	Excellent	Very good		
CoP 14439	Very good	Average	Excellent	Very good		
CoSe 14455	Excellent	Excellent	Excellent	Excellent		Very good entry with thick canes and good NMC
Standards BO 91	Very good	Very good	Excellent	Very good		
CoP 9301	Average	Good	Excellent	Good		
CoP 06436	Excellent	Poor	Excellent	Very good		
Overall Performance of the Experiment	Very good	Good	Excellent	Very good		

***** Not planted as the planting material from Pusa has not reached the station in time for planting.

B. CROP PRODUCTION

1) Centre-wise status of trials allotted and conducted

Experiment No& Title	AS-68	AS-70	AS-71	AS-72 (Early & Mid-late)	AS-73	AS-74
Gorakhpur	Not Conducted	Not Conducted	Not Conducted	Not Conducted	Not Conducted	Not Conducted
Seorahi	Conducted	Conducted	Not Conducted	Conducted	Not Conducted	Not Conducted
Pusa	Conducted	Conducted	Not Conducted	Conducted	Not Conducted	Conducted
Motipur	Not-allotted/ conducted	Not-allotted/ conducted	Not-allotted/ Conducted	Not-allotted/ conducted	Not-allotted/ conducted	Not-allotted/ Conducted
Bethuadahari	Not Conducted	Conducted	Not Conducted	Conducted	Not Conducted	Conducted
Buralikson	Not-allotted/ conducted	Not-allotted/ conducted	Not-allotted/ Conducted	Not-allotted/ conducted	Not-allotted/ conducted	Not-allotted/ Conducted

2) Salient observations:

AS-68: Impact of integrated application of organics and inorganics in improving soil health and sugarcane productivity

- The performance of crop (Ratoon-I) was observed best under application of FYM @ 10 tonnes / ha + biofertilizer (*Azotobacter* + PSB) + NPK application on soil test basis (T9) followed by application of FYM @ 10 tonnes / ha + biofertilizer (*Azotobacter* + PSB) + 100% RDF (T8) and application of FYM @ 10 tonnes / ha + 100% RDF through in-organic sources (T5) at Seorahi centre.
- However, at Pusa centre, crop performance under treatment T6, receiving application of FYM @ 20 tonnes / ha alongwith soil test based fertilizer application was superior followed by treatment T5 which received FYM@ 20 tonnes /ha alongwith 100% RDF.

AS-70: Scheduling irrigation with mulch under different sugarcane planting methods

- The crop performance under paired row trench planting (30:120 cm row spacing) with organic mulching @ 6 t/ha and irrigation scheduling at 1.0 IW:CPE ratio was best at all the centres.

AS-72: Agronomic performance of elite sugarcane genotypes

- At Seorahi centre, among different test genotypes CoSe 13452 performed best followed by CoSe 13451. Among different row spacing 90 cm was more appropriate as compared to 120 cm of row spacing. The performance of different genotypes improved with use of 125% RDF in comparison to 100% RDF.
- At Pusa centre, genotype CoP 13437 performed best at 90 cm row spacing compared to others whereas in case of fertility level 125% RDF was observed better than 100% fertility level. Similarly at 120 cm row specing genotype CoP 13437 again performed better compared to others whereas 125% RDF was found better than 100% RDF.
- At Bethuadahari centre, the performance of genotype CoSe 12451 was found better in case of early maturing genotype whereas in mid-late genotype CoLk 12209 performed better compared to other test genotypes.

AS-74: Evaluation of sugarcane varieties for drought tolerance

- This experiment was conducted at two centres only.
- At Pusa centre, the variety CoP 16437 performed better followed by CoP 112 and CoP 9437. The performance of crop was seen better in IW:CPE ratio of 1.00.
- At Bethuadahari centre, variety CoLk 94184 with irrigation at 1.0 IW: CPE ratio was seen better closely followed by variety BO 91 with irrigation at 0.3 IW: CPE ratio.

Rating of the crop production experiments

Centres	**Experiments (allotted and conducted)**					
	AS-68	**AS-70**	**AS-71**	**AS-72 (Early & Mid-late)**	**AS 73**	**AS 74**
Gorakhpur	Not Conducted	Not Conducted	Not Conducted	Not Conducted	Not Conducted	Not Conducted
Seorahi	Very Good	Very Good	Not Conducted	Very Good	Not Conducted	Not Conducted
Pusa	Good	Very Good	Not Conducted	Very Good	Not Conducted	Very Good
Motipur	Not-allotted/ conducted	Not-allotted/ conducted	Not-allotted/ Conducted	Not-allotted/ conducted	Not-allotted/ conducted	Not-allotted/ conducted
Bethuadahari	Not Conducted	Very Good	Not Conducted	Very Good	Not Conducted	Very Good
Buralikson	Not Conducted	Not Conducted	Not Conducted	Not Conducted	Not Conducted	Not Conducted

C. ENTOMOLOGY

1) Centre-wise status of trials allotted and conducted

Experiment No& Title	**E4.1**-Evaluation of Zonal varieties /genotypes for their reaction against major insect pests	**E28:** Survey and surveillance of sugarcane insect pests	**E30:** Monitoring of insect pests and bio-agents in sugarcane agro-ecosystems	**E38:** Formulation and validation of IPM Module of sugarcane insect pests
Gorakhpur	Not Allotted			
Seorahi	Not Allotted			
Pusa	Conducted	Conducted	Conducted	Conducted
Motipur	Not Allotted			
Bethuadhari	Not Allotted-			
Buralikson	Not Allotted-			

2. Salient observations

Seorahi: Minor incidence of white fly was observed in breeding trials.

Motipur: Minor incidence of termites, Plassey borer and top borer was observed in breeding trials.

Pusa: The incidence of top borer (5-6%), Plassey borer (2-3%), white fly, mealy bug, pyrilla, scale insects (traces) was observed.

Bethuadahari: The incidence of scale insect (2-%) was observed in CoP 14438, CoSe 14455, CoP 06436, CoP 9301.There was minor incidence of Plassey borer and mealy bug in breeding trials.

Buralikson: The severe damage of sugarcane by parrot in breeding trials. There was minor incidence of aphids, Plassey borer, woolly aphids and top borer in trials.

Rating of the Entomology experiments conducted by the Centres of North Central and North-Eastern zones

Centre	**E4.1**-Evaluation of Zonal varieties /genotypes for their reaction against major insect pests	**E28:** Survey and surveillance of sugarcane insect pests	**E30:** Monitoring of insect pests and bio-agents in sugarcane agro-ecosystems	**E38:** Formulation and validation of IPM Module of sugarcane insect pests
Gorakhpur	Not Allotted	Not Allotted	Not Allotted	Not Allotted
Seorahi	Not Allotted	Not Allotted	Not Allotted	Not Allotted
Pusa	**Very good**	**Very good**	**Good**	**Good**
Motipur	Not Allotted	Not Allotted	Not Allotted	Not Allotted
Bethuadhari	Not Allotted	Not Allotted	Not Allotted	Not Allotted
Buralikson	Not Allotted	Not Allotted	Not Allotted	Not Allotted

D. PATHOLOGY

The following trails were allotted to the centres of North Central and North Eastern Zone.

- PP14: Identification of pathotypes of red rot pathogen.
- PP 17 A: Evaluation of zonal varieties for resistance to red rot
- PP 17 B: Evaluation of zonal varieties for resistance to smut
- PP 17 C: Evaluation of zonal varieties for resistance to wilt
- PP 17 D: Evaluation of zonal varieties for resistance to YLD
- PP 22: Survey of sugarcane diseases naturally occurring in the area on important Sugarcane varieties
- PP 23: Assessment of elite and ISH genotypes for resistance to red rot.
- PP 31: Screening, epidemiology and management of pokkah boeng in sugarcane.

Rating of the Pathology experiments conducted by the Centres of North Central and North-Eastern zones

Center	PP14	PP17A	PP17B	PP17C	PP17D	PP22	PP23	PP31
Gorakhpur	-	-	-	-	-	-	-	-
Seorahi	C	C	C	-	C	C	C	C
Motipur	NA	C	C	C	NA	NA	NA	NA
Pusa	C	C	C	C	C	C	C	C
Bethuadahai	-	-	-	-	-	-	-	-
Buralikson	NA	C	NA	NA	NA	C	NA	NA

C= conducted, NA= Not allotted

1. G. S. SUGARCANE BREEDING AND RESEARCH INSTITUTE, SEORAHI

- **PP14: Identification of pathotypes of red rot pathogen**
  Nineteen differentials were planted on 15/02/2018. Eleven pathotypes were inoculated on 24/08/2018. Plant population is low with weed infestation..
- **PP 17 A: Evaluation of zonal varieties for resistance to red rot**
  The trail was conducted with 34 clones including 5 standards. The clones were inculcated on 24/8/2018 by both plug and cotton method with Cf 07 and CF 08. Crop growth is good.
- **PP 17 B: Evaluation of zonal varieties for resistance to smut**
  All total 26 clones were inoculated on 16/2/2018. Smut infestation was observed in Co1158, CoSe 01421. Plant population was not up to the mark.
- **PP 17 D: Evaluation of zonal varieties for resistance to YLD**
  YLD was observed in CoP 15439, CoSe 15454, CoLk 15469. Weed infestation and low plant population.

- **PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties**
  Survey was conducted in UP. Red rot was recorded on CoSe 92423, CoSe98231, UP 9530 and Co 0238. Wilt was recorded in CoP 9301, CoPk 5191, CoS 08272, Co 0238, CoBln 51501 and CoBln 15502
- **PP 23: Assessment of elite and ISH genotypes for resistance to red rot**
  All total 25 genotypes were planted on 23/2/2018. Red rot inoculation was done on 26/8/2018 with Cf 07 and Cf 08 by plug method. Plant growth was poor.
- **PP 31: Screening, epidemiology and management of pokkah boeng in sugarcane**
  All total 25 genotypes were planted on 17/ 02/2018. Pokkah boeng infestation was observed on CoS 08279, Co 0238, CoSe 15454, CoP 15439. Combined infection of pokkah boeng and wilt was observed on CoS 08279 and Co 0238.

2. ICAR-IISR REGIONAL CENTRE, MOTIPUR, BIHAR

- **PP 17: Evaluation of zonal varieties for resistance to red rot, smut and wilt**

All total 35 genotypes were planted on 25/03/208 and were evaluated against red rot, smut and wilt with pathotypes Cf 07 and Cf 08.

General observations:

- Wilt was observed in CoBln 15502 but plant height was good. Wilt (in trace) was also observed in CoBln 16502, CoP 14437, CoLk 16471, CoP 16438 and Co 0238.
- YLD (in trace) was observed on CoP 15438, CoP15439, CoSe 15454, CoLk 15467, CoP 15437, CoSe 15451, CoSe 15456.
- Overall crop condition is good, well maintained and weed free.

3. SUGARCANE RESEARCH INSTITUTE, PUSA, BIHAR

- **PP14: Identification of pathotypes of red rot pathogen.**
  Twenty canes of ten differentials were inoculated on 17/08/2018by plug method. Crop condition was good.
- **PP 17 A: Evaluation of zonal varieties for resistance to red rot**
  All total 50 genotypes were evaluated against red rot by plug as well cotton swab method with two designated pathotypes Cf 07 and Cf 08. Date of inoculation was 18/08/2018.
- **PP 17 B: Evaluation of zonal varieties for resistance to smut**
  All total 50 genotypes were evaluated against smut disease with BO 147 as check. No smut symptom was observed.
- **PP 17 C: Evaluation of zonal varieties for resistance to wilt**
  All total 50 genotypes were evaluated against wilt disease with CoSe 95422 as check. Wilt was observed in CoBln 15502.

- **PP 17 D: Evaluation of zonal varieties for resistance to YLD**
  YLD (in traces) was observed in CoSe 95422, CoS 8436, CoLk 94184, CoLk 14206, CoP 15437, CoSe 15452, CoSe 14451, CoBln 15501, CoSe 01412, CoP 14437, CoP 14437.
- **PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties**

The concerned scientist has reported the following disease during survey.

Disease	**Variety**
Red Rot	Co 0235, CoS 8436
Wilt	BO 110,Co 118, CoLk 94184, Co 0238
Smut	BO 141, Co 3234
YLD, Pokkah Boeng, GSD, Wilt	Co 0238

- **PP 23: Assessment of elite and ISH genotypes for resistance to red rot.**
  All total 27 clones were inoculated on 17/08/2018 with Cf 07 and Cf 08 by plug method with CoSe 95422 as check. Crop was good.
- **PP 31: Screening, epidemiology and management of pokkah boeng in sugarcane**
  Twelve genotypes were screened under natural condition. Out of which two genotypes CoSe 95422 and CoP 16440 showed moderately susceptible to pokkah boeng.

General observations:

- Weed infestation reduced crop growth
- Brown spot was observed on CoSe 14454, CoLk 94184.
- Ring spot was observed on CoLk 94184
- Rat damage was recorded on CoSe 16452.

4. SUGARCANE RESEARCH STATION, BETHUADAHARI, WEST BENGAL

General Observations:

- YLD was observed on CoLk 14209, CoP 14439, and CoLk 14209.
- Brown spot and Ring spot were observed on CoLk 14209, CoP 06439, CoP 14439, CoSe 14454, CoSe 14455
- Wilt was observed on CoP 9301, CoSe 13451
- Red rot (in traces) was observed on CoSe 01421 in trace amount.

5. SUGARCANE RESEARCH STATION, BURALIKSON

- **PP 17 A: Evaluation of zonal varieties for resistance to red rot**
  All total 34 entries were inoculated by Cf 07and Cf 08 on 24/04/2018 by plug as well as nodal cotton method. The crop condition was good.

2. PP 22: Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties

The following diseases has been reported during the survey

Disease	**Variety**
Wilt	CoSe 01421, Cose 13451, CoSe 15454, CoBln 94063, CoBln 9103
YLD	CoSe 15452, CoSe 15456, CoP 13437
Pokkah Boeng	CoBln 9103
Ring spot	CoSe 14454, CoLk 15469,CoSe 15454

Wilt was not recorded on CoBln 15501 and 15502 in Buralikson

Rating of plant pathology experiment conducted by centres of North Central and North Eastern Zone

Centers	**Experiment conducted**							
	PP14	**PP17A**	**PP17B**	**PP17C**	**PP17D**	**PP22**	**PP23**	**PP31**
Seorahi	Good	Good	Good	-	Good	Good	Good	Good
Motipur	-	Very Good	Very Good	-	-	-	-	-
Pusa	Good	Average	Good	Good	Good	Good	Good	Good
Bethuadahari	-	-	-	-	-	-	-	-
Buralikson	-	Good	-	-	-	Good	-	-

MONITORING REPORT OF EAST COAST ZONE
(CROP SEASON 2018-19)

Monitoring team constituted by the Project Coordinator vide letter no. F No. 12-11 (M)/2018-PCS dated September 11, 2018 for assessment of performance of the AICRP trials at regular as well as voluntary centres of East Coast Zone with the following scientists.

Name, Designation & Address of the Members	Visit of centres	Visit of date
Team Leader • Dr. P.K. Nayak Sugarcane Breeder & OIC Sugarcane Research Station Nayagarh-752070 (Odisha.) **Members** • Dr. Mehar Chand Principal Scientist (Agronomy) Regional Research Station (CCSHAU) Uchani-132001, Karnal (Haryana) • Dr. R. G. Yadav Principal Scientist & Head (Entomology) Vasantdada Sugar Institute Pune, Manjari (BK)-412307, Distt.- Pune (MS) • Dr. R.K. Sahu Professor & PI Sugarcane (Pathology) G.B. Pant University of Agril. & Technology Pantnagar-263145, Distt.- U.S. Nagar **Facilitator** • Dr. V. K. Gupta Principal Scientist (Breeding) ICAR-Indian Institute of Sugarcane Research Lucknow – 226 002(U.P.)	EID Parry, Nellikuppam	30.11.2018
	SRS, Cuddalore	01.12.2018
	SRS, Vuyyuru	03.12.2018
	RARS, Anakapalle	04.12.2018
	SRS, Nayagarh	05.12.2018

The team executed the monitoring work of East Coast Zone comprising Nellikuppum, SRS, Cuddalore; SRS, Vuyyuru; RARS, Anakapalle and SRS, Nayagarh from 30th November to 05th December'2018. The discipline-wise observations made during the visit of different Research Stations and recommendations are reported here under.

General Observations:

- There was a deficit of 20 to 30 per cent of rainfall in whole Tamilnadu especially the area surrounding Nellikuppum and Cuddalore during June & July months of 2018.
- The crop condition was rates as 'very good' at all the centres of the Zone.
- White ant and wilt disease was observed in many entries of AVT at Vuyyuru centre especially in CoC 15336, Co 06030, CoC 14337,Co 13031,CoV 92102 and Co 86249
- Natural occurrence of smut was noticed in entries CoV 16356 and CoC 14336 at RARS, Anakapalle.
- Flowering was noticed in CoC 16336 and Co 13031 at Cuddalore and CoV 16356 both at Cuddalore and Vuyyuru centres.
- The incidence of Yellow Leaf Disease Syndrome was observed in AP and Odisha. .

A. CROP IMPROVEMENT

1. Parrys Sugarcane Research & Development Center, EID Parry (India) Ltd., Nellikuppam (T.N.)

This voluntary centre conducted all the 7 trials as per the technical programme. The six rows of plants in IVT(E) and IVT(ML) were planted at 90 cm apart. Similarly 8 rows of plants in AVT(E) I Plant Crop, AVT(E) II Plant Crop, AVT(E) Ratoon, AVT(ML) II Plant Crop and AVT(ML)Ratoon were planted at 90cm apart. Drought prevailed in this centre as compared to last year and growth was little affected. In general, conductance of the trials was excellent. Performance of the entries at nine months age for field stand, tillering and cane traits compared to the best standards are given in Table 1-7. Two tiered T.T. propping was done nicely in all the trails. Alternate row mulching with trash was done in all the trials. Seed multiplication of 04 Early and 05 Midlate entries accepted during group meeting of AICRP(S) held at TNAU, Coimbatore in 2017 along with entries selected from IVT(ML) for promotion to AVT(ML) IPC *viz.,* CoC 15339 and CoOr 15346 were carried out as per the technical programme.

2. Sugarcane Research Station , Cuddalore (T.N.)

The centre conducted all the 7 trials as per the technical programme. Drought prevailed in this centre as compared to last year and growth was little affected. All the trials were very good in establishment and were maintained very well. Performance of the entries at nine months age for field stand, tillering and cane traits compared to the best standards are given in Table 1-7. Some of the clones were lodged as there was no propping. There was flowering in entries CoC 16336, CoV 16357and Co 13031(both plant and Ratoon). Seed multiplication of 04 Early and 05 Midlate entries accepted during group meeting of AICRP(S) held at TNAU, Coimbatore in 2017 along with entries selected from IVT(ML) for promotion to AVT(ML) IPC *viz.,* CoC 15339 and CoOr 15346 was carried out as per the technical programme. A total of 11,328 seedlings were raised and transplanted in .the main field.

3. Sugarcane Research Station, Vuyyuru (A.P.)

The centre has conducted all the 7 trials as per the technical programme . All the trials were good in establishment at early stages and were maintained very well. Performance of the entries at ten months age for field stand, tillering and cane traits compared to the best standards are given in Table 1-7. Flowering was noticed in CoV 16357. Incidence of white ant, wilt and Yellow Leaf disease (YLD) was also observed in some clones of AVT and total plot dried. No cane will be harvested in CoC 15336 (AVT-E-I PC), Co 06030 (AVT-ML-II PC), CoC 14337 (AVT-ML-II PC),Co 13031(AVT-ML-II PC),CoV 92102 (AVT-ML-II PC), and Co 86249(AVT-ML-II PC) . Seed multiplication of 04 Early and 05 Midlate entries accepted during group meeting of AICRP(S) held at TNAU, Coimbatore in 2017 along with entries selected from IVT(ML) for promotion to AVT(ML) IPC *viz.,* CoC 15339 and CoOr 15346 are carried out as per the technical programme. A total of 2,204 seedlings were raised from the fluff received from SBI, Coimbatore and planted in the main field and the survival per cent is 46.37.

4. Regional Agricultural Research Station, Anakapalle (A.P.)

The centre has conducted all seven trials of Crop Improvement as per the technical programme of AICRP (Sugarcane). The trials were excellent in establishment. Performance of the entries at nine months age for field stand, tillering and cane traits compared to the best standards are given in Table 1-7. Two tiered T.T. propping was done nicely in all the trails. Incidence of Yellow Leaf disease (YLD) was observed in some of the test and standard clones in the AVT(E) I PC. There was natural occurrence of smut in CoV 16356 and CoC 14336 (AVT-E-Ratoon). Seed multiplication of 04 Early and 05 Midlate entries accepted during group meeting of AICRP(S) held at TNAU, Coimbatore in 2017 along with entries selected from IVT(ML) for promotion to AVT(ML) IPC *viz.,* CoC 15339 and CoOr 15346 are carried out as per the technical programme. A total of 5080 seedlings were raised and planted in the main field and the survival per cent is 84.05.

5. Sugarcane Research Station, Nayagarh (Odisha)

The centre has conducted all the seven trials as per the technical programme. The trials were excellent in establishment and were maintained very well. Performance of the entries at nine months age for field stand, tillering and cane traits compared to the best standards are given in Table 1-7. Over all crop growth was very good in all the trails. Flowering was noticed in CoV 16357. Natural occurrence of smut in CoM11082 was noticed. Woolly aphid was noticed in Co09007 and CoN09072. Seed multiplication of 04 Early and 05 Midlate entries accepted during group meeting of AICRP(S) held at TNAU, Coimbatore in 2017 along with entries selected from IVT(ML) for promotion to AVT(ML) IPC *viz.,* CoC 15339 and CoOr 15346 are carried out as per the technical programme. Under fluff supply programme, the centre has transplanted more than 2300 seedlings raised from fluff received from SBI, Coimbatore and the establishment was very good.

List of trials conducted during 2018– 2019 in East Coast Zone

Sl. No.	Trials	Nellikuppam	Cudallore	Vuyyur	Anakapalle	Nayagarh
1.	IVT(E)	Conducted	Conducted	Conducted	Conducted	Conducted
2.	AVT(E)-I PC	Conducted	Conducted	Conducted	Conducted	Conducted
3.	AVT(E)-II PC	Conducted	Conducted	Conducted	Conducted	Conducted
4.	AVT(E)-R	Conducted	Conducted	Conducted	Conducted	Conducted
5.	IVT(ML)	Conducted	Conducted	Conducted	Conducted	Conducted
6.	AVT(ML)-II PC	Conducted	Conducted	Conducted	Conducted	Conducted
7.	AVT(ML)-R	Conducted	Conducted	Conducted	Conducted	Conducted

Performance of the AICRP (S) trials at different centres in the East Coast Zone

Sl. No.	Trials	Nellikuppam	Cuddalore	Vuyyuru	Anakapalle	Nayagarh
1.	IVT(E)	Excellent	Good	Good	Excellent	Excellent
2.	AVT(E)-I PC	Excellent	Good	Good	Good	Good
3.	AVT(E)-II PC	Excellent	Good	Good	Excellent	Excellent
4.	AVT(E)-R	Good	Good	Good	Excellent	Good
5.	IVT(ML)	Excellent	Good	Good	Good	Good
6.	AVT(ML)-II PC	Excellent	Good	Good	Excellent	Excellent
7.	AVT(ML)-R	Good	Good	Good	Good	Good

EVALUATION OF ENTRIES IN TRIALS

Table 1: Initial Varietal Trials (Early)

Entries	Nellikuppam	Cuddalore	Vuyyuru	Anakapalle	Nayagarh
CoA 16321	Better	On par	On par	On par	Better
CoC 16336	On par	On par	Better	On par	Better
CoC 16337	Better	On par	On par	Better	Better
CoV 16356	Better	On par	On par	Better	On par

CoA 92081	Poor	Better	Better	Better	Poor
CoC 01061	On par	Better	Better	On par	Better
CoOr 03151	Best	Best	Best	Best	Best
Dt. of Planting	23.02.18	14.03.18	06.01.18	20.02.18	17.01.18

Table 2: Advanced Varietal Trial (Early) I Plant Crop

Entries	**Nellikuppam**	**Cuddalore**	**Vuyyuru**	**Anakapalle**	**Nayagarh**
CoC 15336	On par	On par	Poor	Better	On par
CoC 15338	Poor	Better	On par	Better	On par
CoV 15356	Better	Better	On par	Better	On par
CoA 92081	On par	Poor	Poor	Better	Better
CoC 01061	Better	Better	Better	Better	Better
CoOr 03151	Best	Best	Best	Best	Best
Dt. of Planting	01.03.18	02.02.18	23.01.18	14.03.18	26.02.18

Table 3: Advanced Varietal Trial (Early) II Plant Crop

Entries	**Nellikuppam**	**Cuddalore**	**Vuyyuru**	**Anakapalle**	**Nayagarh**
Co 13023	On par	On par	On par	Better	On par
CoA 14321	Better	On par	Better	On par	On par
CoC 14336	On par	On par	Poor	On par	On par
CoA 92081	Poor	Poor	Poor	Better	On par
CoC 01061	Better	Better	Better	Better	Better
CoOr 03151	Best	Best	Best	Best	Best
Dt. of Planting	01.03.18	19.02.18	12.01.18	15.03.18	16.01.18

Table 4: Advanced Varietal Trial (Early) Ratoon

Entries	Nellikuppam	Cuddalore	Vuyyuru	Anakapalle	Nayagarh
Co 13023	On par	On par	Poor	On par	On par
CoA 14321	On par	On par	On par	On par	Poor
CoC 14336	Better	On par	Poor	Better	On par
CoA 92081	Poor	Better	Best	Best	Poor
CoC 01061	Better	On par	Better	Better	Better
CoOr 03151	Best	Best	Not available	Not available	Best
Dt. of Ratooning	15.03.18	07.04.18	08.03.18	08.04.18	22.01.18

Table 5: Initial Varietal Trials (Midlate)

Entries	Nellikuppam	Cuddalore	Vuyyuru	Anakapalle	Nayagarh
CoA 16322	Better	On par	On par	On par	Better
CoC 16338	On par	On par	Better	On par	Better
CoC 16339	Better	On par	On par	Better	Better
CoV 16357	Better	On par	On par	Better	On par
CoV 92102	On par	Better	Better	Better	Poor
Co 86249	Poor	Better	Better	On par	Better
Co 06030	Best	Best	Best	Best	Best
Dt. of Planting	23.02.18	15.03.18	06.01.18	20.02.18	17.01.18

Table 6: Advanced Varietal Trials (Midlate) II PC

Entries	Nellikuppam	Cuddalore	Vuyyuru	Anakapalle	Nayagarh
Co 13028	On par	On par	On par	On par	Better
Co 13029	On par	Better	On par	Better	On par
Co 13031	Better	Better	Poor	On par	On par
CoA 14323	On par	Better	On par	On par	On par

CoC 14337	Poor	On par	Poor	On par	Better
PI 14377	On par	Better	On par	On par	On par
CoV 92102	Best	Better	Best	Poor	Better
Co 86249	Poor	Better	Poor	Better	Best
Co 06030	Better	Best	Poor	Best	Better
Dt. of Planting	03.03.18	24.03.18	08.01.18	29.03.18	25.02.18

Table 7: Advanced Varietal Trials (Midlate) Ratoon

Entries	Nellikuppam	Cuddalore	Vuyyuru	Anakapalle	Nayagarh
Co 13028	On par	On par	Poor	On par	On par
Co 13029	On par	On par	On par	Better	Better
Co 13031	Poor	Poor	Poor	On par	Better
CoA 14323	On par	Better	On par	On par	On par
CoC 14337	Better	Poor	Poor	On par	Poor
PI 14377	On par	Better	On par	On par	Better
CoV 92102	Best	Better	Poor	Poor	Poor
Co 86249	Better	Better	Best	Best	Best
Co 06030	On par	Best	Not available	Not available	Not available
Dt. of Planting	15.03.18	07.04.18	08.03.18	08.04.18	15.02.18

B. CROP PRODUCTION

Centre	Allotted	Conducted	Experiment status/ overall crop status at the farm
Nellikuppam	NA	NA	Very good
Cuddalore	NA	NA	Very good
Vuyyuru	NA	NA	Very good
Anakapalle	Not allotted, but conducted all experiments as per approved technical programme	All	Excellent
Nayagarh	AS-68, AS-70, AS- 72 and AS-74	All	Very good

Nellikuppam, Cuddalore and Vuyyuru centre**s** were not assigned the any trials on Crop Production. However Anakapalle centre conducted all the trials without the post of Agronomist. All the trials (AS-68, AS -70, AS-71, AS- 72 and AS-74) were conducted as per approved technical programme. The overall crop condition at the farm was excellent. The post of Agronomist was withdrawn last year by the Project Coordinator (Sugarcane) IISR, Lucknow. Keeping in view of crop condition and maintenance of trials at this centre, the committee recommends for reviving the post of Agronomist at this centre.

Nayagarh

All the allotted experiments (AS-68, AS-70, AS-74, AS-72- Mid late) were conducted. AS 72- Early trial was not conducted due to non availability of sufficient seed of new entries.

i) AS-68: Impact of integrated application of organics and inorganics in improving soil health and sugarcane productivity.

The ratoon of CoOr 10346 mid late variety was initiated during last week of January 2018. The crop condition was very good. Plants stand was satisfactory. Treatments T8- FYM at 10 t/ha + biofertilizers + 100 RDF and T9- FYM at 10 t/ha+ biofertilizers + soil test based fertilizer application were found best. The treatments were executed as per technical programme. There was no deviation from the approved technical programme.

ii) AS-70: Scheduling irrigation with mulch under different sugarcane planting methods

Early maturing variety CoOr 12346 was planted on 15/12/2018. Among planting methods P4- Furrow planting at 120 cm spacing with alternate skipped furrow irrigation + green manuring / brown mulching was found best treatments in terms of tillers, NMC and cane height. Among irrigation levels, 1.0 and 0.8 IW/CPE ratio being at par produced higher number of tillers, NMC and cane height as compared to 0.6 IW/CPE ratio. The treatments were applied as preapproved technical programme. There was no deviation from approved technical programme.

iii) AS-72 B: Agronomic performance of elite sugarcane genotypes (Mid late)

Only Mid late trial was conducted and trial on early entries was not conducted due to non availability of sufficient seed. Mid late varieties approved for East-Coast zone were planted on 25/2/2018 at 90 and 120 cm spacing. Spacing of 90 cm was found better as compared to 120 cm spacing in all the mid late varieties.

iv) AS-74: Evaluation of sugarcane varieties for drought tolerance

The trial was planted on 24-12-2017 with six recently released varieties for the zone. The performance of irrigation regimes of 1.0 and 0.3 IW/CPE ratio were similar in terms of tillers, NMC and cane height. Among early maturing varieties, the growth of CoOr 03151 was better whereas, in mid late entries, CoOr 04152 performed better. No interaction was observed between varieties and irrigation levels.

C. PLANT PATHOLOGY:

A brief summary of technical programme of Plant Pathology, 2018-19 of AICRP (Sugarcane) assigned and conduction of trails by the different centres under East Coast Zone are as fallows:

Sl. No.	Experiments	Nellikuppam	Cuddalore	Vuyyuru	Anakapalle	Nayagarh*
1.	PP-14	NA	C	NA	C	NC
2.	PP14(A)	NA	C	NA	C	NC
3.	PP-17 (A)	NA	C	NA	C	NC
4.	PP-17 (B)	NA	C	NA	C	NC
5.	PP-17 (C)	NA	C	NA	C	NC
6.	PP-17 (D)	NA	C	NA	C	NC
7.	PP-22	NA	C	NA	C	NC
8.	PP-23	NA	C	NA	C	NC
9.	PP-31	NA	C	NA	C	NC
10.	PP-33	NA	C	NA	C	NC

Note: C-Conducted, NA- Not Allotted, NC- Not Conducted

***Withdrawal of Post of Plant Pathologist in 2018-19**

Detail Report of Plant Pathology Trial, 2018-19 of East Coast Zone

Sl. No.	Name of the Centre and date of visit	Experiment No.	Description	Remarks
1.	EID Parry (India) Ltd. **Nellikuppam** Distt. Cuddalore 30.11.2018	Not allotted	Visited fields	• All assigned experiments of other disciplines were well laid. • Incidence of YLD in some clone was mild to lesser level. • Some variety like PA 1110 A, leading variety was deficient with iron. • Rust and Wilt incidence was also noticed.

2.	SRS (TNAU), **Cuddalore** (TN) 01.12.2018	PP14 & PP14 (A) Identification of pathotypes & maintenance of red rot pathogen	Date of Planting : 22.02.2018 No. of differentials : 19 Date of inoculation : 16.10.2018 & 17.10.2018 Method of inoculation : Plug method Pathotypes used : *CF 06* & *CF 12* Maintenance of Pathotypes is in progress	• All experiments conducted as per technical programme • Experiments were well laid • Incidence of YLD, Wilt and Pokkah Bong has been seen scanty to mild level. • Due to Cyclone the experimental field, as well as the entire farm was filled with water. Therefore, due to flooding conditions proper visit of the field was very difficult.
		PP 17 (A): Red Rot Screening	No. of genotype planted :20+3 Checks Date of Planting : 03.03.2018 Date of inoculation : 10.10.2018 (Plug method), 11.10.2018 (Cotton swab Nodal Method) Pathotype used : C F 0 6	
		PP 17 (B): Smut Screening	No. of genotypes planted :20+2 Checks Date of Planting : 07.03.2018 Inoculation: Steeped in freshly prepared Smut spore suspension for ½ hour before planting. Evaluation : In progress	
		PP 17 (D): Evaluation for YLD	No. of genotype : 20+3 checks Observation to be recorded : 8^{th}, 10^{th} & 12^{th} months on	

			natural incidence	
		PP 22: Survey	In progress	
		PP 23: Assessment of elite & ISH genotypes for Resistance to Red Rot	No. of genotypes : 27 + 1 Check Date of Planting : 01.03.2018 Pathotype used : *CF 06* Method of Inoculation : Plug Method	
		PP 33: Management of YLD through meristem culture	Sugarcane variety used for Meristem tip culturing : CoC25 Medium used : As per technical programme	
3.	Sugarcane Research Station, **Vuyyuru** (AP) 03.12.2018	Not allotted	Nil	• All allotted experiments of other discipline were well laidout. • Mild to high incidence of wilt has been seen in many genotypes and varities. • Incidence of Red Rot has also noticed in many genotypes and varities • Incidence of YLD & Pokkah has also seen in many genotypes and verities • Incidence of termite(mild to high) noticed in entire form • Suggested to take appropriate management technique to over come these problemes.

4.	RARS (ANGRAU), **Anakapalle** (AP) 04.12.2018	PP 14 & 14(A): Identification of pathotypes & Maintenance of red rot pathogen.	Date of planting : 24.02.2018 No. of Differential : 19 Pathotype used : *CF06* (Procured from SBI Coimbatore) Method of inoculation : Plug method Date of inoculation : 26.09.2018 Maintenance of pathotypes is in progress	• All experiments/trials were well laid as per technical programme • Crop effected by water stress • Lesser to high infestation of termits has been noticed in entire farm including trials of each discipline • Low to Severe incidence of wilt has been witnessed • Incidence of YLD Rust red rot wilt Musaic and RingSpot has also seen /noticed form stanty to mild level
		PP17 (A): Screening for red rot	No. of genotypes planted : 20+6 check Date of planting : 10.03.2018 Date of inoculation (1) Plug method : 22.09.2018 (2) Cotton Swab) : 23.09.2018 Pathotypes used : C F 0 6	
		PP 17(B): Screening for Smut	No. of genotypes planted : 20+6 check Date of planting : 10.03.2018 Date of inoculation : 10.03.2018 (Steeped in freshly prepared Smut spore Suspension for ½ hour before planting Evaluation : In progress	
		PP 17(C): Screening	No. of genotypes planted :20+6	

		against wilt	check Date of planting : 10.03.2018 Date of inoculation : 19.09.2018 Inoculants : *Fusarium sacchari*	
		PP 17(D): Evaluation for YLD	Assessment is in progress.	
		PP 22: Survey	In progress : In genral the incidence of different diseases like Red Rot Wilt Smut, Top rot, Mosaic, GSD and YLD have been recorded in varying intensities fram various mill zone of AP	
		PP 23: Assessment of elite & ISH genotype against Red Rot	No. of genotype planted : 27 ISH + 3 check Date of planting : 13.03.2018 Date of inoculation : 22.09.2018 Pathotypes used : C F 0 6 Method of inoculation : Plug method	
		PP 31: Screening, Epi & Management. of Pokkah Boeng	Date of planting : 13.03.2018 Genotype for Screening : 20 +6 check. Initiation of data recording : 21.05.2018 followed by 10 days interval and up to 30.10.2018 No. of treatment :	

			4 as per technical programme Expt- In progress	
		PP 33: Management of YLD through meristem culture	This experiment was well laid as per technical programme. I visited the tissue culture lab and seen the progress. It was evident that the fields which was transplanted with tissue culture seedlings were almost free from the disease. However, 1-2% incidence was observed in the fields transplanted with tissue culture seedlings from Sugarcane cultivar viz 2003 V 4 6 , which is in close proximity to ratton crop with severe YLD Symptoms	
5.	Sugarcane Research Station (OUAT). Nayagarh (Odisha) 05.12.2018	No any experiment trials were allotted, though in pathological technical programme there was allotment of the trials, but as told by the OIC Nayagarh that pathological discipline was with drawn	Visited entire fields & trial of Breeding & Agronomy.	• Experiments/ trials of Breeding & Agronomy discipline were laid properly • But, due to lack of water and heavy infestation of termite. experiments seems not in very nice condition • Mild to high incidence of wilt has also witness • Incidence of Red rot, YLD, Wilt & Ring spot also seen in some cultivar from scanty to mild level.

D. ENTOMOLOGY

Projects allotted v/s conducted at different centres of East Coast Zone

S. No.	Centre	E. 4.1	E. 28	E. 30	E. 34	E. 38	E. 39	Total
1	Nellikuppam	NA	NA	NA	NA	NA	NA	0
2	Cuddalore	NA	NA	NA	NA	NA	NA	0
3	Vuyyuru	NA	NA	NA	NA	NA	NA	0
4	Anakapalle	A/C	A/C	A/C	A/C	A/C	A/C	0
5	Nayagarh	NA	NA	NA	NA	NA	NA	0

A/C: Allotted and conducted; NA: Not Allotted

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Sr. No.	Name of the center & Date of Visit	Expt. No.	Description	Remarks
1	EID Parry (India) Nellikuppam Dist. Cuddalore (TN) Dt.30.11.2018	Not allotted	Visit fields	• All assigned Expt. of other disciplines were well laid out. • Low to medium incidence of borers.
2	SRS, Cudddalore,(TN) Dt.01.12.2018	Not allotted	Visit fields	• All assigned Expt. of other disciplines were well laid out. • Low incidence of borers.
3	SRS, Vuyyuru (AP) Dt.03.12.2018	Not allotted	Visit fields	• All assigned Expt. of other disciplines were well laid. • Medium to high incidence of borers. • low to high incidence of, scale insect, mealybug and termite.
4	RARS(ANGRAU), Anakapalle (AP) Dt.04.12.2018	E 4.1	Date of planting- 4.03.2018 No of Genotypes -19 Replication -3 Design- RBD	• Trail laid as per technical programme. • Incidence of early shoot borer below 15 % in all genotype, low Incidence

			Plot size- 6.0m X0.8 m X 4 R	of internode borer
		E 28	Survey on insect pest in adjoining area at monthly interval	• Recordedincidence of Early shootborer, internode bore, mealybug, sugarcane aphid, rusty plum aphid, pyrilla and whitefly
		E 30	Date planting 17-5-18 (Ratoon)	• Recorded incidence of Early shoot borer, Sugarcane aphid, Rusty plum aphid, Derbid leaf hopper. • Also recordedBio-agent(*T. chilonis, Epricania,* and *Encarsia*)of insect pest of sugarcane.
		E 34	IPM Laboratory	• Rearing of host insect, *Pyrilla*of *Epricania* is under progress.
		E 38	Date of planting-10.05.2018 Variety: Co A 99082 Spacing: 0.90 Treatments: T1- IPM Module T2- Zonal recommendation T3 untreated control	• Trail laid as per technical programme. • Incidence of early shoot borer was below ETL (15%) in all treatments.
		E 39	Date of planting-19.03.2018 Variety- 93 A 145 Plot size – 10.0 m X 0.9m X15R Treatment -4 Replication - 5	• Trail laid as per technical programme. • Early shoot borer and Internode borer incidence below ETL in all treatments. • Early shoot borer moth catches during May month indicated that the moth catches were more

				in T2 – delta – Plus trap with Windows. • Early shoot borer catches were zero, internode borer moth catches during August monthwere more in T2 delta – Plus trap with Windows.
5	SRS (OUAT), Nayagarh (Odisha) 5.12.2018	Not allotted	Visit fields	• All assigned Expt. of other disciplines were well laid . • Low to Medium incidence of borers, scale insect, mealybug and termite. • Low to medium incidence of borers and mealybug, while Medium to high incidence of scale insect and termites in ratoon crop.

Suggestions:

Based on the visit to different centres and discussion with the scientists working in AICRP(Sugarcane), the following suggestions are made for consideration-

- The centre RARS Anakapalle requested for restoration of post of Junior Scientist (Agronomy). Looking to their performance, the request may kindly be considered.
- The post of Junior Scientist (Plant Pathology) may be restored at SRS, Nayagarh for evaluation of the clones to red rot otherwise entries for IVT will not be submitted .
- In some centres, growth of the standards is not appreciable due to continuous use of same seed materials. The seed materials may be treated with MHAT/aerated steam therapy.

The monitoring team expresses sincere thanks to all the Station In-charges & their team for the facilities extended during the visit. We are also thankful to Dr. S.K. Sukla, Project Coordinator, AICRP (Sugarcane), ICAR-Indian Institute of Sugarcane Research, Lucknow for constituting the team, inspiring guidance and support.

MONITORING REPORT FOR PENINSULAR ZONE-I
(Crop Season 2018-19)

The team constituted by Project Co-ordinator, AICRP on Sugarcane (Ref.: F.No. 12-11(M)/2018-PCS dtd. 11.09.2018 of P.C(S), IISR, Lucknow) executed the monitoring work of peninsular zone-I centers as per following details and schedule.

Team members	Centers	Date of visit
Team Leader • Dr. Sanjay.B.Patil, Breeder, ARS, Sankeshwar, **Members** • Dr. S.K.Pandey, Entomologist, SBI, RC, PB No. 52, Karnal (Haryana) • Dr. Dinesh Singh, Pathologist, ICAR, IISR, Raebareli Road, Lucknow • Dr.S.K.Yadav, Scientist (Agronomy), Coordination Unit (S), IISR, Lucknow	Agricultural Research Station Perumalapalle	04.12.2018
	E.I.D. Parry (India) Ltd., Sugarcane Research & Development Centre, No. 43, Annai Nagar, Pugalur	06.12.2018
	ICAR-Sugarcane Breeding Institute, Coimbatore	07.12.2018
	Sugarcane Research Station, Kallungal, P.O.Thiruvalla	08.12.2018
	Zonal Agricultural Research Station, V.C. Farm, Mandya	10.12.2018
	Agricultural Research Station, Sankeshwar	11.12.2018
	K.J. Somaiya Institute of Applied Agril. Research, Sameerwadi,	12.12.2018
	Regional Sugarcane & Jaggery Research Station, Opp. Shri Shahu Market Yard, Kolhapur	13.12.2018

A. CROP IMPROVEMENT

The detailed report of Crop Improvement technical programmes (2018-19) implemented by the centers of Peninsular zone-I as per format circulated by P.I. (crop improvement) and Director, SBI, Coimbatore is as follows.

Peninsular zone-I

1. Overall grading of trials:

Trials	Perumallpalle	Pugulur	Coimbatore	Thiruvalla	Mandya	Sankeshwar	Sameerwadi	Kolhapur
IVT (E& M)	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Good
AVT (E & M) I Plant	Very good	NC	Excellent	Very good	Excellent	Excellent	Excellent	Very good
AVT (E & M) II Plant	Very good	NC	Excellent	Very good	Excellent	Excellent	Excellent	Excellent
AVT (E & M) Ratoon	Very good	NC	Very good	Good	Very good	Very good	Poor	Very good
Fluff 2017	9436 seedlings in ground nursery	35000 seedlings	NA	Badly affected by flood	1600 seedlings	656 seedlings	NA	NA
Multiplication new IVT entries (E&M)	Sufficient	NA	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient
Multiplication of ISH & IGH	NA	NA	Multiplied	NA	NA	Multiplied	NA	Multiplied
Overall remarks across all trials	Heavy lodging	Heavy lodging, severe INB, scale	--	Low to moderate population	Partial lodging	Partial lodging	Partial lodging & severe rootgrub infestation in ratoon trial	Partial lodging

Each trial rated in five scales

Sl.No	Score (%) obtained	Rating
1	81-100	Excellent
2	61-80	Very good
3	41-60	Good
4	21-40	Average
5	0-20	Poor

Assessment of the trial should be based on

1. Whether conducted as per the technical programme
2. General growth and maintenance of the trial
3. If the trial is unfit for evaluation Grade **POOR** may be given.
4. When the trial is not conducted, it may be indicated as **Not Conducted**

Note: In general lodging in most of centers especially at Perumalpalle, Puguluru, Mandya and Sameerwadi posed little difficulty in assessing performance of trials/entries, hence it was discussed with scientists of respective centers by the team and most of them suggested to execute the monitoring work in September month.

1. Evaluation of entries in trials:

Performance of entries in: **IVT (Early & Midlate)**

	Perumallpalle DOP:25.01.18	**Pugulur DOP:01.01.18**	**Coimbatore DOP:11.01.18**	**Thiruvalla DOP:12.02.18**	**Mandya DOP:29.12.17**	**Sankeshwar DOP:13.12.17**	**Sameerwadi DOP: 21.01.18**	**Kolhapur DOP:24.01.18**
1.Co 14005	**On par**	**On par (Bud sprouting)**	**On par**	**On par (bud sprouting)**	**Poor**	**On par**	**Poor**	**On par (bud sprouting)**
2.Co 15002	**On par**	**Poor**	**Better (profuse flowering)**	**Poor (profuse flowering & bud sprouting)**	**Poor (profuse flowering)**	**Poor**	**Poor**	**Poor (YLD & low NMC)**
3.Co 15005	**Poor**	**Poor**	**Poor**	**On par (profuse flowering & bud sprouting)**	**Poor (profuse flowering & rust)**	**Poor (rust)**	**On par**	**Poor (low NMC)**
4.Co 15006	**On par**	**On par**	**Poor (profuse flowering & YLD)**	**Poor**	**Poor (profuse flowering)**	**Poor (profuse flowering & YLD)**	**Poor**	**Poor (YLD)**
5. Co 15007	**Better**	**Poor**	**Poor (profuse flowering)**	**Poor (profuse flowering & bud sprouting)**	**On par (profuse flowering)**	**Better (smut)**	**On par (rust)**	**On par**
6. CoSnk 15101	**Better**	**Better**	**Better**	**On par**	**Better**	**Better**	**Better**	**Better**
7.CoSnk 15102	**Better**	**On par**	**On par**	**Better**	**Better**	**Better**	**Better**	**Poor**
8. CoVSI 15121	**Better**	**On par (Bud sprouting)**	**Poor (profuse flowering & bud sprouting)**	**On par (profuse flowering & bud**	**Better (profuse flowering)**	**Better**	**Better**	**Better (pokkah boeng & bud sprouting**

				sprouting)				
9.Co 15009	**On par**	**On par (Bud sprouting)**	**Better (profuse flowering)**	**Poor (profuse flowering & rust)**	**Better (profuse flowering)**	**Better**	**On par**	**Poor**
10. Co 15010	**Poor (drying)**	**On par**	**On par**	**On par (profuse flowering & leaf spot)**	**Better (profuse flowering)**	**Better**	**Poor (YLD & rust)**	**Poor (YLD)**
11.Co 15015	**On par (drying)**	**On par**	**On par**	**Poor (profuse flowering)**	**On par (profuse flowering)**	**On par**	**Poor**	**Poor (smut)**
12. Co 15017	**Better (pyrilla)**	**On par (Bud sprouting)**	**Poor**	**Poor (profuse flowering)**	**Poor (profuse flowering & leaf spot)**	**Poor**	**Poor**	**On par**
13. Co 15018	**Better**	**Poor (Bud sprouting)**	**On par (profuse flowering)**	**Poor (profuse flowering)**	**Better (profuse flowering)**	**Better (profuse flowering)**	**Better**	**Better (low NMC & drying)**
14. Co 15020	**On par (YLD, Pyrilla)**	**Better**	**On par (bud sprouting)**	**Better (profuse flowering & bud sprouting)**	**Poor (drying)**	**On par (smut)**	**On par**	**On par**
15. Co 15021	**On par**	**Better (Bud sprouting)**	**On par**	**Poor (Low NMC)**	**Poor**	**Poor**	**On par**	**On par (bud sprouting)**
16. CoN 15071	**Better (YLD)**	**Better (Bud sprouting)**	**Better**	**On par (profuse flowering)**	**Better**	**Better**	**Better**	**Poor (bud sprouting)**
17.CoN 15072	**On par**	**Poor (Bud sprouting & rust)**	**Poor (rust)**	**Poor (Low NMC)**	**Poor (profuse flowering & leaf spot)**	**Poor**	**On par (rust)**	**Poor**
18.CoSnk	**Better**	**Better**	**Better**	**Better**	**Better**	**Better**	**Better**	**Better ***

15103				**(profuse flowering & bud sprouting)**				
19.CoSnk 15104	**Better**	**Better**	**On par**	**Better**	**Better**	**Better**	**On par**	**Better**
20. CoVC 15061	**On par**	**Poor (Bud sprouting)**	**On par**	**Poor (profuse flowering)**	**On par**	**On par (YLD)**	**On par**	**Poor (YLD)**
21. CoVC 15062	**Better (drying)**	**On par (YLD & wilt)**	**Poor (YLD)**	**Poor (leaf spot)**	**Better**	**Poor (YLD)**	**Poor (YLD)**	**On par (YLD)**
22. CoVC 15063	**On par (profuse flowering)**	**Poor (Bud sprouting & stunted)**	**Poor (profuse flowering)**	**On par (profuse flowering)**	**Poor (profuse flowering & leaf spot)**	**Poor (YLD & profuse flowering)**	**Poor (YLD)**	**Poor (profuse flowering)**
23.CoVC 15064	**Poor**	**Poor (Stunted)**	**Poor (drying)**	**Poor (low NMC, YLD & Rust)**	**Better (profuse flowering)**	**Poor (YLD)**	**Poor (YLD)**	**Poor (drying, YLD & low NMC)**
24. PI 15131	**Better**	**Poor (Bud sprouting, YLD, flowering)**	**On par**	**Poor (profuse flowering & leaf spot)**	**On par (profuse flowering)**	**Poor (profuse flowering & rust)**	**Better (profuse flowering & rust)**	**Poor (profuse flowering & drying)**
25. PI 15132	**On par (YLD)**	**On par**	**On par**	**Better (profuse flowering)**	**On par (profuse flowering)**	**Poor (YLD)**	**Poor**	**Poor (profuse flowering & YLD)**
26.VSI 15122	**Better**	**Better (profuse flowering)**	**Better (profuse flowering)**	**On par (profuse flowering & leaf spot)**	**On par (profuse flowering & YLD)**	**Better (profuse flowering & rust)**	**Better**	**Better (profuse flowering & smut)**
Standards								
27.Co 86032			**(YLD)**			**Best**		**Best**
28. CoC 671	**(drying)**	**(Bud sprouting)**	**(profuse flowering &**	**(profuse flowering &**	**(profuse flowering)**			

			YLD)	**bud sprouting)**				
29.CoSnk 05103	**Best (pyrilla)**	**Best**	**Best (profuse flowering)**	**Best (profuse flowering & bud sprouting)**	**Best (profuse flowering)**		**Best**	
30.Co 85004	**(YLD)**			**(leaf spot)**	**(profuse flowering)**			

*** CoSnk 05103 (check) added in place of CoSnk 15103 in the trial, and later corrected by planting as an additional entry besides the trial for comparison and data collection**

a) Among the standards the best should be indicated

b) The entries should be compared with the best standard based on cane characters and field stand and rated as

1. Better
2. On par
3. Poor

* Other specific information if any like incidence of pest and diseases, cane traits like thickness, splits, spines, flowering, lodging, tillering, incidence of pests and diseases in specific centres can be given in the column or as separate foot notes.

4. Fluff Supply Programme: Number of seedlings produced and specific information if any on the different stages of selection trials.

2. Evaluation of entries in trials:

Performance of entries in : **AVT (Early & Midlate) I plant**

	Perumallpalle DOP:27.01.18	**Pugulur DOP:**	**Coimbatore DOP:18.01.18**	**Thiruvalla DOP:25.01.18**	**Mandya DOP:29.12.17**	**Sankeshwar DOP:03.01.18**	**Sameerwadi DOP: 19.02.18**	**Kolhapur DOP:29.12.17**
1.Co 13002	**Poor**	**Not conducted**	**Poor (profuse flowering & rust)**	**Poor (profuse flowering)**	**Poor (profuse flowering leaf spot)**	**Poor (YLD)**	**Poor**	**Poor (bud sprouting)**
2. Co 13003	**Poor (drying & yellowing)**		**Poor**	**On par (leaf spot)**	**Poor**	**On par**	**Poor**	**On par (drying)**
3.Co 13004	**Poor (pyrilla)**		**On par (profuse flowering)**	**On par (profuse flowering)**	**Poor (profuse flowering)**	**On par**	**Poor (YLD & rust)**	**Better**
4. CoN 13072	**On par (drying)**		**Poor**	**On par (profuse flowering & bud sprouting)**	**Poor(profuse flowering)**	**Poor**	**Better**	**On par**
5. CoSnk 13101	**Poor (drying)**		**Poor**	**On par (bud sprouting)**	**Poor (YLD)**	**On par**	**Better**	**On par**
6.MS 13081	**Poor (pyrilla & low NMC)**		**On par (profuse flowering)**	**Poor (profuse flowering)**	**Poor**	**On par (bud sprouting)**	**Better**	**Better (bud sprouting)**
7.Co 13006	**Poor**		**On par**	**Poor (profuse flowering)**	**Poor**	**Poor**	**Better**	**On par**
8. Co 13008	**On par (smut)**		**On par**	**Poor (bud sprouting)**	**Poor (YLD)**	**On par**	**On par**	**Poor**
9. Co 13009	**Poor (drying)**		**Poor (profuse flowering)**	**On par (rust)**	**Poor (profuse flowering)**	**Poor**	**Poor**	**Poor (rust)**
10. Co 13013	**Poor (pyrilla & smut)**		**Poor (profuse flowering)**	**On par (profuse**	**Poor (profuse flowering)**	**On par (profuse**	**Better**	**On par (profuse**

				flowering)		**flowering)**		**flowering)**
11.Co 13014	**On par**		**On par**	**On par (profuse flowering)**	**Poor (profuse flowering**	**On par**	**On par**	**Poor**
12. Co 13018	**Poor**		**Poor**	**On par (profuse flowering)**	**Poor (profuse flowering)**	**Poor**	**Better**	**Poor**
13. Co 13020	**Poor**		**On par (profuse flowering)**	**On par**	**Poor (profuse flowering)**	**Poor**	**Poor (YLD)**	**Poor (YLD)**
14. CoN 13073	**Better**		**On par (profuse flowering)**	**On par**	**Better (profuse flowering)**	**On par**	**Better**	**Better (profuse flowering & leaf spot)**
15.CoSnk 13103	**Better (drying)**		**Better**	**Better**	**Poor (YLD)**	**On par**	**Better**	**Better**
16.CoSnk 13106	**Better**		**Better**	**Better**	**On par**	**On par**	**Better**	**On par**
17.PI 13132	**Poor**		**Better (smut)**	**Better (rust)**	**On par leaf spot)**	**On par**	**On par**	**Poor (drying & leaf spot)**
Standards								
18.Co 86032	**Best (drying)**		**(YLD)**			**Best**		**(YLD)**
19. CoC 671	**(drying & pyrilla)**		**(profuse flowering)**	**(profuse flowering)**	**(profuse flowering)**			**(YLD)**
20.CoSnk 05103			**Best (profuse flowering)**	**Best (profuse flowering)**	**Best (profuse flowering)**		**Best ***	**Best (profuse flowering)**

- **Separately added the check CoSnk 05103 by Sameerwadi center**

3. Evaluation of entries in trials:

Performance of entries in: **AVT (Early & Midlate) II plant**

	Perumallpalle DOP:09.01.18	**Pugulur DOP:-**	**Coimbatore DOP:13.01.18**	**Thiruvalla DOP:17.01.18**	**Mandya DOP:26.12.17**	**Sankeshwar DOP:15.12.17**	**Sameerwadi DOP: 19.01.18**	**Kolhapur DOP:25.12.17**
1. Co 12007	**Poor (YLD & dried)**	**Not conducted**	**Poor (profuse flowering)**	**Poor (bud sprouting)**	**Poor (profuse flowering)**	**Poor**	**On par (YLD)**	**Poor (profuse flowering & smut)**
2. Co 12008	**Poor**		**Poor (YLD)**	**On par (profuse flowering)**	**Poor**	**Poor (YLD)**	**Poor**	**Poor (smut)**
3. Co 12009	**Poor**		**On par (profuse flowering)**	**On par(profuse flowering)**	**Better (profuse flowering & leaf spot)**	**Poor (rust)**	**Better (profuse flowering & rust)**	**On par (smut)**
4. Co 12012	**On par**		**Better (profuse flowering)**	**On par(profuse flowering)**	**On par (profuse flowering)**	**Poor**	**Better**	**On par (profuse flowering)**
5. Co 12019	**Poor (drying)**		**Poor**	**Poor**	**Poor**	**Poor (YLD)**	**Poor (YLD & stunted)**	**Poor (rust & YLD)**
6. Co 12024	**Poor (dried)**		**Poor (YLD)**	**Poor (rust)**	**Poor (YLD & leaf spot)**	**Poor**	**On par (YLD)**	**Poor (YLD)**
7. CoM 12085	**Poor (drying)**		**On par**	**On par**	**Better**	**On par**	**Better (YLD)**	**On par**
8. VSI 12121	**On par (YLD)**		**On par**	**On par**	**Better (YLD)**	**On par**	**On par**	**On par (YLD)**
Standards								
9.Co 86032	**(YLD)**		**(YLD)**	**(profuse flowering)**	**(YLD)**	**Best**	**Best**	**(YLD)**
10. CoC 671	**(YLD)**		**(profuse flowering)**	**(profuse flowering)**	**(profuse flowering & leaf spot)**		**(YLD)**	**(YLD)**
11.CoSnk 05103	**Best**		**Best (profuse flowering)**	**Best (profuse flowering)**	**Best (profuse flowering)**		**(profuse flowering)**	**Best (profuse flowering & smut)**

4. Evaluation of entries in trials:

Performance of entries in: **AVT (Early & Midlate) Ratoon**

	Perumallpalle DOP:26.02.18	**Pugulur DOP:-**	**Coimbatore DOP:17.02.18**	**Thiruvalla DOP:15.01.18**	**Mandya DOP:27.02.18**	**Sankeshwar DOP:14.02.18**	**Sameerwadi DOP: 20.01.18**	**Kolhapur DOP:07.03.18**
1. Co 12007	**Poor (YLD & drying)**	**Not conducted**	**Poor (profuse flowering)**	**Poor (profuse flowering & bud sprouting)**	**On par (profuse flowering)**	**Poor (SWA)**	**Poor**	**Poor (smut)**
2. Co 12008	**Poor**		**Poor (YLD)**	**Poor(profuse flowering & bud sprouting)**	**Poor (YLD & drying)**	**Poor (SWA)**	**Poor (low NMC & root grub)**	**Poor (smut)**
3. Co 12009	**Poor**		**Better (profuse flowering)**	**On par (profuse flowering)**	**Better (profuse flowering)**	**On par (rust)**	**Poor (smut & rust)**	**Better (smut)**
4. Co 12012	**Poor**		**Better (profuse flowering)**	**Poor (profuse flowering & bud sprouting)**	**Better (profuse flowering & YLD)**	**Poor (SWA & rust)**	**Poor**	**On par**
5. Co 12019	**Poor (drying)**		**Poor**	**Poor (rust)**	**Poor (YLD & drying)**	**Poor(YLD)**	**Poor**	**Poor**
6. Co 12024	**Poor (YLD)**		**Poor (YLD)**	**Poor (rust & leaf spot)**	**Poor (YLD & leaf spot)**	**Poor (SWA)**	**Poor (stunted & yellowing)**	**Poor**
7. CoM 12085	**Poor (low NMC)**		**On par**	**Poor (profuse flowering)**	**Better**	**Poor (SWA)**	**Poor (root grub)**	**On par (smut)**
8. VSI 12121	**Poor**		**On par**	**Poor (rust & bud sprouting**	**On par (YLD & leaf spot)**	**On par**	**Poor**	**Better**
Standards								
9.Co 86032	**(scale & mealy bug)**		**(YLD)**	**(leaf spot)**	**(YLD)**	**(SWA)**	**(drying)**	
10. CoC 671			**(wild boer damage)**	**(profuse flowering)**	**(YLD)**		**(root grub)**	
11.CoSnk 05103	**Best**		**Best (profuse flowering)**	**Best (profuse flowering & bud sprouting)**	**Best profuse flowering)**	**Best**	**Best**	**Best**

B. CROP PRODUCTION

The committee visited eight centers of Peninsular Zone-I of All India Coordinated Research Project on Sugarcane *viz*., Perumallapalle, Pugulur, Coimbatore, Thiruvalla, Mandya, Sankeshwar, Sameerwadi and Kolhapur from 03.12.2018 to 15.12.2018. As per the technical programme of year 2018-19, following Crop Production experiments were finalized for multi-location trials under AICRP (Sugarcane) programme:

1. **AS-68**. Impact of integrated application of organics and in-organics in improving soil health and sugarcane productivity.
2. **AS-70**. Scheduling irrigation with mulch under different sugarcane planting methods.
3. **AS-71**. Carbon sequestration assessment in sugarcane based cropping system.
4. **AS-72**. Agronomic performance of elite sugarcane genotypes.
5. **AS-73:** Assessment of climate change impact on sugarcane productivity
6. **AS-74**: Evaluation of sugarcane varieties for drought tolerance.

Overall grading of trials:

Trials	Perumallapalle	Pugulur	Coimbatore	Thiruvalla	Mandya	Sankeshwar	Sameerwadi	Kolhapur
AS-68	NA	NA	NC	NC	NC	Very good	NA	NC
AS-70	NA	NA	NC	NC	NC	Very good	NA	NC
AS-71	NA	NA	NC	NC	NC	Failed	NA	NC
AS-72	NA	NA	Excellent	NC	NC	Excellent	NA	NC
AS-73	NA	NA	-	NA	NA	-	NA	NA
AS-74	NA	NA	NC	NC	NC	Excellent	NA	NC

(Rating scales 1. Excellent, 2. Very good, 3. Good, 4. Average and 5. Poor)
NA: Not applicable; NC: Not conducted

Salient highlights.

AS 68. Impact of integrated application of organics and inorganics in improving soil ealth and sugarcane productivity

The experiment has been conducted by Sankeshwar centre as per approved technical programme with objective to develop nutrient management practices for sustaining soil health and sugarcane production. Proper agronomic management related to weed management and earthing up were done. Health standard of plants were satisfactory. Sanitation and proper labeling in the experimental plots were done. This trial is assigned to other centers like Thiruvalla, Mandya and Kolhapur but could not conducted due withdrawal of the agronomist post. Coimbatore centre did not conduct this trial due to scarcity of land.

AS 70. Scheduling irrigation with mulch under different sugarcane planting methods

The experiment has been conducted by Sankeshwar centre as per approved technical programme. Proper agronomic management like weed management and earthling etc were followed. Health standard of plants were quite satisfactory. Sanitation and proper labeling in the experimental plots were done. This trial was assigned to other centers like Thiruvalla, Mandya and Kolhapur but could not conduct due to withdrawal of the agronomist post. Coimbatore centre has not conducted this trial due to scarcity of land.

AS 71. Carbon sequestration assessment in sugarcane based cropping system.

The experiment was carried out with the objective to improve soil organic carbon build-up and sustain yield at all the participating centres in Penninsular zones -1. The experiment was executed as per approved technical programme by Sankeshwar centre only but trial was failed due to drought in *kharif* season. Other centers of peninsular zone-1 have not conducted this trial except Sankeshwar.

AS 72. Agronomic performance of elite sugarcane genotypes

The experiments were assigned to all the participating centers however, Coimbatore and Sankeshwar centre conducted the experiments. The objective was to assess the Agronomic performance of sugarcane genotypes promoted from the Advance Varietal Trials (AVT). Different genotypes were planted along with standard local checks. Coimbatore centre has conducted this trail with only two replications instead of three due to scarcity of land. Sankeshwar centre has executed this trail as per approved technical programme with three replications. The crop at maturity phase was very good condition, free from diseases and pest. Other participating centers have not conducted this trial due to withdrawal of Agronomist post.

AS-73: Assessment of climate change impact on sugarcane productivity.

The experiments were assigned to all centers where post of agronomist has been provided as well as voluntary centre with objective to assess long term variability in weather parameter and the change of sugarcane productions. No information has been provided by any centers regarding progress made for collection of weather data either due to lack of agronomist. Sankeshwar centre has agronomist and likely to collect the required weather parameters data in coming days.

AS-74: **Evaluation of sugarcane varieties for drought tolerance.**

The experiment has been conducted by Sankeshwar centre as per approved technical programme with objective to identification of drought tolerant varieties suitable for specific climatic condition. Proper agronomic management like weed management and earthing etc were followed. Health vigor of plants was quite satisfactory. Sanitation and proper labeling in the experimental plots were done. Crop has been reached at maturity stage. Other centers in Penninsular zone -1 could not conduct this trial due to withdrawal of Agronomist post.

Perumallapalle, Pugulur and Sameerwadi centres were not assigned any crop production experiment.

C. PLANT PATHOLOGY

Technical Programme (2018-19):

PP 14: Identification of pathotypes of red rot pathogen
PP 14A: Maintenance of isolates of red rot
PP 17A: Evaluation of zonal varieties for resistance to red rot
PP 17B: Evaluation of zonal varieties for resistance to smut
PP 17C: Evaluation of zonal varieties for resistance to wilt
PP 17D: Evaluation of zonal varieties for resistance to yellow leaf disease (YLD)
PP 22: Survey of sugarcane diseases naturally occurring in the mill area on important sugarcane varieties
PP 23: Assessment of elite and ISH genotypes for resistance to red rot
PP 28(b): Methodology for screening sugarcane genotypes for resistance to brown rust *(P. melanocephala)*
PP 30: Assessment of field resistance of sugarcane varieties to red rot
PP 31: Screening, epidemiology and management of pokkah boeng in sugarcane
PP 32: Management of brown spot disease of sugarcane
PP 33: Management of yellow leaf disease through meristem culture

Project allotted v/s conducted at different centers of zone

Sr. No.	Centre	PP 14& PP 14a	PP 17 A	PP 17B	PP 17C	PP 17D	PP 22	PP 23	PP 28b	PP 31	PP 32	PP 33
1.	Perumallapalle	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3.	Pugalur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2.	Coimbatore	A/C	A/C	A/C	NA	A/C	A/C	NA	NA	NA	NA	A/C
4.	Thiruvalla	A/C	A/C	A/NC	NA	A/C	A/C	NA	NA	NA	NA	NA
5.	Mandya	NA	NA	NA	NA	NA	A/C	NA	NA	NA	NA	NA
6	Sameerwadi	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	Sankeshwar	NA	NA	A/C	NA	A/C	A/C	NA	A/C	NA	A/C	NA
8	Kolhapur	NA	NA	A/C	NA	A/C	A/C	NA	A/NC	NA	A/C	NA

A/C = Allotted and Conducted; **A/NC =** Allotted and Not Conducted; **NA =** Not Allotted

Detail report of Plant Pathology trials 2018-19 of Peninsular zone I

ARS, Perumallapalle

This centre was not assigned any trial of AICRP on Sugarcane under Plant Pathology discipline. However, during field observations minor incidence of mosaic, pokkah boeng and YLD diseases were observed in breeding and station trials. Incidence of YLD was observed in Co 15005, CoC 671

Co12007, Co12008, and CoN 13073 entries. Mosaic disease appears in Co13002, CoVC 15061 and PI 15131. Pokkah boeng was noticed in Co 15020 and CoVSI 15122. Wilt was observed in CoN 15072 and red rot in Coc 671 varieties. Iron deficiency symptoms were also seen in all the AVT early II plant entries.

PSR & DC, EID Parry, Pugalur:

This centre was not allotted any trial of AICRP on sugarcane under Plant Pathology. However, during field observations of breeding trials incidence of mosaic, smut and YLD diseases were observed. Smut was observed in CoN 13072. Pokkah boeng was noticed in Co 15020 and CoVSI 15122. Mosaic was also noticed in most of the varieties including Co13002, CoVC 15061 and PI 15131. YLD was also observed in most of the varieties.

SBI, Coimbatore

Six trials *viz.*, PP 14, 14A ,PP 17A, PP 17 B, PP 17 C, PP 22 and PP 33 were allotted to this centre and all trials were conducted.

PP 14 & 14A:

Identification of pathotypes of red rot pathogen

Nineteen sugarcane differentials namely *Baragua, khakai,* SES 594,CoS 767, BO 91, CoC 671,Co7717, Co 997, CoJ 64, Co 1148, Co 419, Co 62399, Co 975, CoS 8436, Co 7805, Co 86002, Co 86032, CoV 92102 , 19. CoSe 95422 were planted for identification of pathotypes/races in red rot pathogens. Inoculations of two designated plus 9 isolates of red rot will be done by this center by plug method during last week of August. The data was recorded after sixty days of inoculation and the trail was already harvested before visit of the monitoring team.

PP 17(A):

Evaluation of zonal varieties for resistance to red rot

All the IVT& AVT (early, mid late) zonal varieties along with standards were planted (one row per clone during March 2018 for evaluation against red rot. Inoculations was done during last week of August by plug and cotton swab methods by CF 06 and CF 12. Red rot symptoms were not observed under natural conditions. However, YLD was observed was in CoC 671 & CoM 13009 and mosaic in CoSnk 15104 genotypes.

PP 17(B):

Evaluation of zonal varieties for resistance to smut

Fifty nine IVT and AVT (early, midlate) zonal varieties along with standards were also planted (one row per clone) in two replications during March 2018 for evaluation against smut. Inoculations were done by steeping in freshly prepared smut spore suspension for thirty minutes during planting time by the center. Smut symptoms were observed on the standards along with the susceptible genotypes.

PP 17(D)

Evaluation of zonal varieties for resistance to yellow leaf disease (YLD)

Fifty nine IVT and AVT (early, midrate) zonal varieties along with standards were also planted (four rows three meter each) for evaluation against YLD. YLD was observed in Co 15005, CoC 671 Co12007, Co12008, and CoN 13073 entries.

PP 22:

Survey of sugarcane diseases naturally occurring in the mill area on important sugarcane varieties

Survey and surveillance for sugarcane diseases naturally occurring in the area on important sugarcane varieties are being conducting by this center at regular interval.

PP 33: Management of yellow leaf disease through meristem culture

Variety Co 860032 (tissue culture derived material) was planted for management of yellow leaf disease through meristem culture in 25 rows of three meter. For compression yellow leaf disease infected sugarcane variety Co 860032 was also planted in 25 rows. The impact of YLD infection was clearly observed in the field as compare to the healthy crop.

In breeding trials, rust, mosaic, pokkah boeng and YLD diseases were observed in most of the IVT& AVT (early, midlate) zonal plant and ratoon entries ranging from traces to 20 percent. Smut was noticed in CoVSI 15121.

SRS,**Thiruvalla:**

Five trials (PP 14, PP 17(A), PP 17(B), PP 17(D) and PP 22) were allotted to this center. Out of these five trials, four trials PP 14, PP 17(A), PP 17(D) and PP 22 were conducted as per approved technical programme. The smut experiment PP 17(B) was not conducted. General growth and maintenance of the trials was good though heavy rains was received followed by severe flood.

PP 14:

Identification of pathotypes of red rot pathogen

Nineteen sugarcane differentials (*Baragua, khakai,* SES 594,CoS 767, BO 91, CoC 671,Co7717, Co 997, CoJ 64, Co 1148, Co 419, Co 62399, Co 975, CoS 8436, Co 7805, Co 86002, Co 86032, CoV 92102 , 19. CoSe 95422) were planted in two rows during February, 2018 for identification of pathotypes in red rot pathogens. Inoculations was done with seven pathotypes taken from Coimbatore center by plug method. A clear cut susceptible symptoms was noticed in the differential CoC 671 which is designated susceptible standard for the zone.

PP 17 (A)

Evaluation of zonal varieties for resistance to red rot

This experiment was planted separately by the center, all the IVT& AVT (Early, Midlate) zonal varieties along with standards checks February, 2018. Inoculations was done using Cf 06 by plug and cotton swab methods along with the Cf 12 in last week of October due to flood situation of the center. Development of red rot on inoculated standards was observed during the monitoring of trail which establish the virulence of the pathotypes (Cf 06 and Cf 12) used for evaluation.

PP 22:

Survey of sugarcane diseases naturally occurring in the mill area on important sugarcane varieties

Sugarcane diseases survey has been conducted at five places till date by the center. Pokkah boeng, rust, YLD, mosaic and brown spot diseases were observed in Iramallikkara area. Rust and sheath blight and ring spot diseases were noticed in Venpala area on Co 7745varietes.

In breeding trials, ring spot, rust, mosaic, pokkah boeng and YLD diseases were observed in most of the plant and ratoon entries. Ring spot incidence ranged from 5-30 percent

ZARS, Mandya:

This centre was not assigned any trial of AICRP on sugarcane under Plant Pathology discipline. Survey of sugarcane diseases naturally occurring in the mill area on important sugarcane varieties named as PP 22 experiment is being conduct by Mandya scientists at regular intervals. Good rain fall was received in the area. The crop condition was very good. Incidence of ring spot, YLD, mosaic and rust diseases were observed ranging from in most of the IVT and IVT early& midlate entries. Pokkah boeng also observed in most of the IVT genotypes.

ARS, Sankeshwer:

Five trials (PP 17 (B), PP 17 (D), PP 22, PP 28(b) and PP 32 were allotted to this centre and were conducted as per approved technical programme. General growth and maintenance of trials was very good.

PP 17 (B)

Evaluation of zonal varieties for resistance to smut

For evaluation of zonal varieties for resistance to smut disease all fifty nine entries were planted in one row of six meter with two replications during March, 2017. The data on smut incidence was regularly observed. Genotypes Co 15007, CoN 13072, Co 12007, Co 12009, 12024, CoM 12085, VSI 12123, CoC 671, Co86032 , SNK088789 and Co 740 were found infected with the smut during the visit.

PP 17 (D)

Evaluation of zonal varieties for resistance to yellow leaf disease (YLD)

For this experiments all the genotypes were planted as per the recommendation and incidence of YLD was recorded. Incidence of YLD was observed in Co 15005, CoC 671 Co12007, Co12008, CoN 13073 entries and CoC 671varieties.

PP 22: Survey of sugarcane diseases naturally occurring in the mill area on important sugarcane varieties

The survey of diseases naturally occurring in the area on important sugarcane varieties are conducting by Sankeshwer center regularly. Rust, smut and pokkah boeng are commonly occurring diseases in the region. Pokkah boeng was observed in most of the varieties during May to June and gradually decline in the month of July. Smut was recorded in varieties Co8011 and Co 86032 .YLD starts appearing in many parts of North Karnataka especially in Co 86032. GSD was also observed in several location. Rust and brown spot was noticed on all the cultivated varieties viz., Co 86032, CoM 265 and Co 92005.

PP 28(b):

Methodology for screening sugarcane genotypes for resistance to brown rust *(P.melanocephala)*

Experiment on methodology for screening sugarcane genotype for resistance to brown rust by both clip inoculation and leaf whorl inoculation methods were conducted with the susceptible variety Co 86032. The experiment was planted in 10 rows and observations are in progress.

PP 32

Management of brown spot disease of sugarcane

Highly susceptible variety CoM 0265 was planted with plot size (3 lines of 6 meter) in four replications using RBD for the management of brown spot. The trail was found in good condition.

In breeding trials, rust, mosaic, pokkah boeng and YLD diseases were observed in traces to severe condition in most of the IVT& AVT (early, midlate) plant and ratoon of zonal varieties entries.

KIAAR, Sameerwadi:

No pathology experiments were allotted to this center. This centre have only breeding trials. Severe incidence of mosaic, YLD and rust was observed in all most all entries in plant breeding trials. *Pokkha boeng* ranging upto10 per cent was also noticed in some of the entries.

RS & JRS, Kolhapur:

Five trials (PP 17B, PP 17 (D), PP22, PP 28(b), PP 32) were allotted to this centre. Trials PP 28(b) was not conducted by this center due to withdrawn of plant pathology post from the AICRP. Except PP 28 (b) other four trials were conducted nicely. Crop condition was very good at this center.

PP 17(B):

Evaluation of zonal varieties for resistance to smut

For evaluation of zonal varieties for resistance to smut disease all fifty nine entries were planted in one row of six meter with two replications. The data on smut incidence was regularly observed. Genotypes CoN 13072, Co 12007, Co 12009, Co 12024, CoM 12085, VSI 12123, CoC 671, and Co 740 were found infected with the smut during the visit. The standard planted in smut experiments were also showing smut infection.

PP 17 (D),

Evaluation of zonal varieties for resistance to yellow leaf disease (YLD)

For this experiments all the genotypes were planted as per the recommended technical programme and incidence of YLD is being regularly recorded by the concerned scientist. Incidence of YLD was observed in Co 15005, CoC 671 CoSnk 15201, Co 12008, Co 13008 entries and CoC 671varieties.

PP 22:

Survey of sugarcane diseases naturally occurring in the mill area on important sugarcane varieties

The survey of diseases naturally occurring in the area on important sugarcane varieties are conducting by Kolhapur regularly. The incidence of grassy shoot disease is increased due to use of unhealthy seed material in Kolhapur. The smut disease was observed in the zone ranging from 5-20 per cent. Rust and ring spot fungal diseases are also noticed in several varieties. The brown spot disease has also been noticed on CoM 0265 in Kolhapur region. The sugarcane variety Co 86032 is becoming susceptible to YLD in Kolhapur region also.

PP 28(B):

Methodology for screening sugarcane genotypes for resistance to brown rust *(P. melanocephala)*

This experiment on was not conducted by this center.

PP 32:

Management of brown spot disease of sugarcane

Variety CoM 0265 was planted in four replications using RBD. The experiment was planted in the month of December, 2018 for the management of brown spot with five fungicides viz., pripiconazole 0.1 %, hexaconazole 0.1 %, triadimefon 0.1 %, mancozeb 0.3 %, carbendazim 0.1 %. Disease has not appeared till date. Therefore artificial inoculation of pathogen should be done for smooth conductance of the experiment.

Overall rating of the pathology trials in each center of PZ-I (2018-19)									
Sl.N.	**Trial**	**Perumall apalle**	**Pugalur**	**Coimba tore**	**Thiruvalla**	**Mandya**	**Sankesh war**	**Sameerw adi**	**Kolhapur**
1	**PP 14: PP 14A**	-	-	V. Good	V. Good	-	-	-	-
2	**PP 17(A):**	-	-	V. Good	V. Good	-	-	-	-
3	**PP 17(B):**	-	-	V. Good	Not conducted	-	Excellent	-	V. Good
4	**PP 17 (D),**	-	-	V. Good	V. Good	-	V. Good	-	V. Good
5	**PP 22:**	-	-	V. Good	V. Good	-	Excellent	-	V. Good
6	**PP 28(B):**	-	-	-	-	-	V. Good	-	Not conducted
7	**PP 31:**	_	-	_	_	_	-	_	-
8	**PP 32**	_	-	_	_	_	Excellent	_	V. Good
9	**PP 33:**			V. Good	-		-	-	-

D. ENTOMOLOGY

E.4.1: Evaluation of Zonal varieties/genotypes for their reaction against major insect pests
E.28: Survey and surveillance of sugarcane insect- pests
E.30**:** Monitoring of insect pests and their bio-agents in sugarcane agro-ecosystem.
E.34: Standardization of simple and cost effective techniques for mass multiplication of sugarcane bio-agents.
E.38: Formulation and validation of IPM Module of sugarcane insects.

Trials	Perumal lapalle	Pugulur	Coimbatore	Thiruvalla	Mandya	Sankeshwar	Sameerwadi	Kolhapur
E.4.1	NA	NA	C	NA	C	NA	NA	NC
E.28	NA	NA	C	NA	C	NA	NA	NC
E.30	NA	NA	C	NA	C	NA	NA	NC
E.34	NA	NA	C	NA	C	NA	NA	NA
E.38	NA	NA	NC	NA	NC	NA	NA	NC

NA: Not applicable; NC: Not conducted 38

Centre wise Salient highlights.

1. ICAR-Sugarcane Breeding Institute, Coimbatore – 641 007 (T.N.)

Five trials viz., E.4.1: Evaluation of Zonal varieties/genotypes for their reaction against major insect pests; E.28: Survey and surveillance of sugarcane insect-pests E.30: Monitoring of insect pests and their bio-agents in sugarcane agro-ecosystem E.34: Standardization of simple and cost effective techniques for mass multiplication of sugarcane bio-agents and E.38: Formulation of IPM module of sugarcane insect pests. All the experiments were conducted as per the technical proggramme except project number E.38: Standardization of simple and cost effective techniques for mass multiplication of sugarcane bio-agents viz., *Beauveria brongniartii and Metarhizium anisopliae* was in progress and the maintenance of the experimental crop was excellent.

2. Zonal Agricultural Research Station, V.C. Farm, Mandya – 571 405 (Karnataka)

Five trials viz., E.4.1: Evaluation of Zonal varieties/genotypes for their reaction against major insect pests; E.28: Survey and surveillance of sugarcane insect-pests E.30: Monitoring of insect pests and their bio-agents in sugarcane agro-ecosystem E.34: Standardization of simple and cost effective techniques for mass multiplication of sugarcane bio-agents and E.38: Formulation of IPM module of sugarcane insect pests. All the experiments were conducted as per the technical proggramme except project number E.38:

Standardization of simple and cost effective techniques for mass multiplication of sugarcane bio-agents viz., *Chrysoperla carnae* and *Epiricanea melanoleuca* was in progress. Entomology experiments were not conducted separately. The Entomological observations were recorded from breeder's trials. The maintenance of the experimental crop was excellent.

3. Regional Sugarcane & Jaggery Research Station., Opp. Shri Shahu Market Yard, Kolhapur – 416 005

Four trials viz., E.4.1: Evaluation of Zonal varieties/genotypes for their reaction against major insect pests; E.28: Survey and surveillance of sugarcane insect-pests E.30: Monitoring of insect pests and their bio-agents in sugarcane agro-ecosystem and E.38: Formulation of IPM module of sugarcane insect pests. No any experiment was conducted due to vacant post of Entomology.

MONITORING REPORT OF PENINSULAR ZONE-II
(Crop Season 2018-19)

The monitoring team comprising the Team Leader and members / facilitator executed monitoring work of experimental trials of Peninsular Zone-II for the crop season 2018-19 as per schedule given below.

Team	Visit of centres	Date of visit
Team Leader • Dr. S. C. Mali, Unit Head (Sugarcane) MSRS, Navsari, Gujarat **Members** • Dr. K. P Salin, Principal Scientist (Entomology) ICAR-SBI, Coimbatore • Dr.V. P. Jaiswal Sr. Scientist (Agronomy) ICAR-IISR, Lucknow • Dr. Md Minnatullah Assistant Professor cum Scientist (Sugarcane (Pathology) SRI, Pusa **Facilitator** • Dr. Lalan Sharma Scientist (Plant Pathologist) ICAR-IISR, Lucknow	MSRS, Navsari	28.11.2018
	ZARS, Powarkheda	29.11.2018
	RS and RRS, Rudrur	01.12.2018
	VSI, Pune	04.12.2018
	CSRS, Padegaon	05.12.2018
	PDVVPSS, Pravaranagar	07.12.2018
	SRS (PDKV), Akola	08.12.2018

1. Main Sugarcane Research Station, Navsari Agricultural University, Navsari (Gujarat): All the committee members were assembled at Navsari on 27.10. 2018 and the team visited the Centre on 28.11.2018 and the Centre has laid out all the trials allotted to the Centre which includes the trials under the disciplines Breeding and Plant Pathology. Overall the trials were excellent. Agronomic and entomology trials are not conducted because the posts are vacant. The plants were in good health, good tillering with dark green canopy with high NMC.

2. Zonal Agricultural Research Station, Powarkheda, Hoshangabad (M.P.): The Centre has laid out all the trials allotted to the Centre which includes the trials under the disciplines Breeding and Entomology. No pathological trials were conducted as no pathologist is available at the center. Overall the trials were good. The plants were in good health, medium tillering with green canopy, however,

scarcity of water is observed in some trials. There is a necessity of maintaining water sources for the trials.

3. Regional Sugarcane and Rice Research Station, Rudrur, Nizamabad (Telangana):
The Centre has laid out trials allotted to the Centre which includes under the discipline breeding. Overall the trials were very good. Fields were well maintained, however, minor drought condition was noticed in all the fields and attack of wild boar was observed in some trials.

4. Vasantdada Sugar Institute, Manjari (BK), Pune (M.S.): The Centre has laid out all the trials under Breeding, Agronomy, Entomology and Pathology. Overall the trials were excellent. This centre has maintained very good crop growth, plant stand as well as all experiments were free from weeds, disease and pest.

5. Central Sugarcane Research Station, Padegaon Farm, Satara (M.S.): The team visited the Centre on 05.12.2018 and the Centre has laid out all the trials allotted to the Centre which includes the trials under the disciplines Breeding, Plant Pathology and Entomology. Overall the trials were excellent. Agronomic trials are not conducted because the post is vacant.

6. Padmashri Dr.Vitthalrao Vikhe Patil Sahakari Sakhar Karkhana Ltd., Pravaranagar Rahata Distt. Ahmednagar (M.S.): The Centre has laid out all the trials under Breeding. The Breeding trials were laid out as per the technical programme. Overall the trials were very good. No agronomical, pathological and entomological trials were conducted. The plants were in good health, good NMC.

7. Sugarcane Research Centre, Dr. Punjabrao Krishi Vidyapeeth, Akola (M.S.):
The Centre has laid out all the trials under Breeding. The Breeding trials were laid out as per the technical programme. Overall the trials were good. No agronomical, pathological and entomological trials were conducted. The plants were in good health, good tillering. Drought condition was observed and badly affected in all trials. They are trying to shift the centre from Akola to agricultural research Tharsa, Dist. Nagpur for proper conducting of AICRP trials in future.

A. CROP IMROVEMENT

Breeding trials at all locations were laid out as per the technical programmes. The overall comparative rating of the centres with respect to various trials is: **Excellent** at Navsari, Pune and Padegaon, **Very Good** at Pravaranagar and Rudrur and **Good** at Powerkheda and Akola. It is possible to improve the trials at Powarkheda and Akola by giving proper irrigation. The rating of entries in individual trial / Centre is given in the subsequent pages.

1. Overall Grading of Trials

Trials/ Centre	Navsari	Powarkheda	Rudrur	VSI Pune	Padegaon	Pravaranagar	Akola
IVT (Early + Midlate)	Excellent	Good	Very Good	Excellent	Excellent	Very Good	Good
AVT(Early) I Plant	Excellent	Good	Very Good	Excellent	Excellent	Very Good	Good
AVT (Early) II Plant	Excellent	Good	Very Good	Excellent	Excellent	Very Good	Good
AVT (Early) Ratoon	Very Good	Good	Good	Very Good	Very Good	Very Good	Good
Remarks / Pest and Disease	Low incidence of mealy bug, internode borer and top borer was observed in some entries.	The incidence of internode borer and mealy bugs as major pests and damage due to wild boar was observed.	General incidences of internode borer top borer, mealybug and scale insects have been noticed.	Pest incidence was low in trials and Patches of woolly aphid population could be seen in many plots.	The major pests noticed were internode borer and woolly aphid.	Internode borer and woolly aphid are the major pests, however, incidence level of these pests were very low.	The major problem was wild boar incidence which has caused extensive damage of the genotypes.

2. PERFORMANCE OF ENTRIES IN EACH

Initial Variety Trial (Early)

No.	Variety	Navsari	PowerKheda	Rudrur	VSI, Pune	Padegaon	Pravarnagar	Akola	Other information
1	**Co 14005**	Average	Good	Good	Very Good	Average	Good	Average	
2	**Co 15002**	Good	Average	Average	Average	Average	Average	Good	
3	**Co 15005**	Average	Poor	Good	Good	Good	Average	Poor	
4	**Co 15006**	Good	Good	Good	Good	Average	Good	Poor	
5	**Co 15007**	Average	Average	Good	Good	Good	Good	Good	
6	**CoSnK 15101**	Average	Poor	Good	Good	Average	Average	Average	
7	**CoSnk 15102**	Good	Poor	Poor	Good	Average	Good	Average	
8	**CoVSI 15121**	Good	Good	Good	Good	Very Good	Average	Poor	
9	**Co 15009**	Good	Good	Good	Average	Good	Average	Good	
10	**Co 15010**	Average	Very Good	Good	Very Good	Average	Good	Good	
11	**Co 15015**	Very Good	Average	Good	Very Good	Very Good	Very Good	Poor	The entry performs very well in many centers except Akola
12	**Co 15017**	Average	Poor	Good	Average	Average	Good	Poor	
13	**Co 15018**	Good	Good	Good	Very Good	Good	Very Good	Average	
14	**Co 15020**	Good	Good	Good	Good	Good	Good	Poor	
15	**Co 15021**	Average	Average	Average	Average	Good	Very Good	Average	
16	**CoN 15071**	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Good	Very good entry with thick canes and good NMC
17	**CoN 15072**	Very Good	Good	Good	Very Good	Good	Very Good	Poor	
18	**CoSnk 15103**	Very Good	Average	Poor	Average	Very Good	Poor	Good	

19	**CoSnk 15104**	Good	Poor	Poor	Good	Good	Average	Poor	
20	**CoVC 15061**	Good	Poor	Very Good	Good	Very Good	Very Good	Good	
21	**CoVC 15062**	Average	Good	Good	Good	Poor	Good	Poor	
22	**CoVC 15063**	Average	Poor	Poor	Average	Poor	Average	Good	
23	**CoVC 15064**	Poor	Poor	Poor	Poor	Poor	Average	Poor	
24	**PI 15131**	Good	Good	Good	Average	Poor	Poor	Average	
25	**PI 15132**	Good	Good	Poor	Good	Poor	Average	Average	
26	**VSI 15122**	Very Good	Average	Good	Very Good	Very Good	Good	Very Good	Crop stand is very good in all centres
Standards :									
27	**Co 86032**	Very Good	Good	Poor	Very Good	Average	Good	Good	
28	**CoC 671**	Good	Average	Average	Very Good	Poor	Very Good	Good	
29	**CoSnk 05103**	Very Good	Very Good	Good	Good	Good	Average	Very Good	
30	**Co 85004**	Average	Poor	Good	Good	Poor	Good	Poor	

AVT (Early)-I Plant

No.	Variety	Navsari	PowerKheda	Rudrur	VSI, Pune	Padegaon	Pravarnagar	Akola	Other information
1	**Co 13002**	Good	Average	Good	Poor	Average	Average	Poor	
2	**Co 13003**	Very Good	Poor	Poor	Good	Good	Good	Poor	
3	**Co 13004**	Very Good	Average	Average	Good	Average	Good	Good	
4	**CoN 13072**	Very Good	Good	Very Good	Very Good	Very Good	Good	Very Good	Crop stand is very good and performing well across all centres
5	**CoSnk 13101**	Average	Average	Poor	Average	Good	Average	Good	
6	**MS 13081**	Very Good	Average	Poor	Poor	Very Good	Very Good	Good	
7	**Co 13006**	Very Good	Poor	Poor	Average	Very Good	Good	Good	
8	**Co 13008**	Very Good	Average	Good	Very Good	Good	Very Good	Poor	
9	**Co 13009**	Very Good	Average	Good	Good	Very Good	Good	Poor	
10	**Co 13013**	Very Good	Average	Very Good	Good	Very Good	Very Good	Very Good	Very good entry and performs well in all centres
11	**Co 13014**	Very Good	Average	Average	Very Good	Good	Good	Good	
12	**Co 13018**	Good	Average	Good	Average	Good	Good	Average	
13	**Co 13020**	Average	Average	Average	Average	Good	Average	Poor	
14	**CoN 13073**	Very Good	Nil	Very Good	Very Good	Good	Good	Very Good	
15	**CoSnk 13103**	Very Good	Average	Average	Average	Good	Average	Poor	
16	**CoSnk 13106**	Aveage	Average	Good	Average	Average	Very Good	Good	
17	**PI 13132**	Average	Average	Good	Poor	Poor	Poor	Poor	
Standards :									
18	**Co 86032**	Average	Average	Average	Good	Good	Good	Good	
19	**CoC 671**	Very Good	Average	Good	Good	Average	Good	Poor	
20	**CoSnk 05103**	Very Good	Average	Good	Good	Good	Very Good	Very Good	

AVT (Early)-II Plant

No.	Variety	Navsari	PowerKheda	Rudrur	VSI, Pune	Padegaon	Pravarnagar	Akola	Other information
1	**Co 12007**	Average	Average	Poor	Good	Average	Very Good	Average	
2	**Co 12008**	Poor	Good	Average	Good	Average	Good	Poor	
3	**Co 12009**	Very Good	Good	Very Good	Very Good	Very Good	Very Good	Good	Performs well across all centres
4	**Co 12012**	Good	Good	Good	Good	Very Good	Very Good	Good	
5	**Co 12019**	Good	Good	Average	Poor	Average	Average	Poor	
6	**Co 12024**	Good	Good	Poor	Poor	Good	Average	Average	
7	**CoM 12085**	Average	Average	Good	Average	Very Good	Very Good	good	
8	**VSI 12121**	Very Good	Good	Good	Very Good	Good	Very Good	Very Good	Very good performance with good crop stand in all centres
Standards :									
9	**Co 86032**	Good	Poor	Poor	Good	Very good	Very good	Good	
10	**CoC 671**	Good	Good	Poor	Poor	Very good	Poor	Poor	
11	**CoSnk 05103**	Very good	Good	Good	Good	Average	Good	Good	

AVT (Early)-Ratoon

No.	Variety	Navsari	PowerKheda	Rudrur	VSI, Pune	Padegaon	Pravarnagar	Akola	Other information
1	**Co 12007**	Average	Average	Poor	Average	Poor	Poor	Poor	
2	**Co 12008**	Poor	Average	Poor	Average	Average	Good	Poor	
3	**Co 12009**	Good	Poor	Poor	Very Good	Very Good	Good	Good	
4	**Co 12012**	Good	Good	Average	Good	Very Good	Average	Poor	
5	**Co 12019**	Poor	Poor	Poor	Average	Average	Poor	Average	
6	**Co 12024**	Average	Average	Poor	Poor	Poor	Poor	Average	
7	**CoM 12085**	Poor	Poor	Poor	Poor	Very Good	Poor	Poor	
8	**VSI 12121**	Very Good	average	Good	Very Good	Very Good	Very Good	Good	This entry performs well in ratoon in overall trials
Standards :									
9	**Co 86032**	Average	Average	Poor	Good	Good	Good	Poor	
10	**CoC 671**	Good	Poor	Average	Poor	Poor	Poor	Poor	
11	**CoSnk 05103**	Good	Good	Good	Good	Good	Good	poor	

B. CROP PRODUCTION

Following Crop Production experiment were finalized for multi-location trials under AICRP (Sugarcane) programme:

1. **AS 68**. Impact of integrated application of organics and in organics in improving soil health and sugarcane productivity.
2. **AS 70**. Scheduling irrigation with mulch under different sugarcane planting methods.
3. **AS 71**. Carbon sequestration assessment in sugarcane based cropping system.
4. **AS 72**. Agronomic performance of elite sugarcane genotypes.
5. **AS 73**. Assessment of climate change impact on sugarcane productivity.
6. **AS 74**. Evaluation of sugarcane varieties for drought tolerance.

Centre wise experiment allotted V/s Conducted and Experiment rating

Centre	Allotted	Conducted	Experiment rating
Navsari *(Regular centre)*	AS-68, AS-70, AS-71, AS-72, AS-73 and AS-74	Not conducted (No post of Agronomist)	-
Powerkheda *(Regular centre)*	AS-68, AS-70, AS-71, AS-72, AS-73 and AS-74	Not conducted	-
Rudrur *(Voluntary centre)*	AS-68, AS-70, AS-71, AS-72, AS-73 and AS-74	Not conducted	-
VSI Pune *(Voluntary centre)*	AS-68, AS-70, AS-71, AS-72, AS-73 and AS-74	AS-70, AS-71 and AS-72	**Excellent (90)**
Padegaon *(Regular centre)*	AS-68, AS-70, AS-71, AS-72, AS-73 and AS-74	Not conducted (No post of Agronomist)	-
Pravaranagar *(Voluntary centre)*	AS-68, AS-70, AS-71, AS-72, AS-73 and AS-74	Not conducted	-
Akola *(Voluntary centre)*	AS-68, AS-70, AS-71, AS-72, AS-73 and AS-74	Not conducted	-

Salient highlights

AS 70. Scheduling irrigation with mulch under different sugarcane planting methods.

This experiment was carried out only at VSI Pune centre with objective to enhance the crop and water productivity in sugarcane . Four planting methods were evaluated under three levels of irrigation scheduling. The result revealed that planting method (Furrow planting without mulching) showed higher germination percentage as compared to other methods. However, Furrow planting (120 cm row spacing) with green manuring recorded the maximum tiller population. Irrigation scheduling at 1.0 IW/CPE ratio recorded similar trends .Water quantities as per IW/CPE with water depth of 7.5 cm is being applied . The cut throat flume is used for recording the quantities of irrigation water. The moisture content before each irrigation was recorded and it was in the range of 10-19%. The preliminary observations on growth and yield attributes of sugarcane are under progress. Performance of crop was very good

AS 71. Carbon sequestration assessment in sugarcane based cropping system.

The experiment was carried out with the objective to improve soil organic carbon build-up and sustain yield only at VSI Pune centre. The experiment was executed as per approved technical programme. Soil samples has been collected before planting and after harvest of the crop for determine the changes takes place due to various treatment with respect to soil health. Sugarcane (Plant) was planted in the field having organic carbon 0.93% and harvested cane yield was in the range of 119.5 to 121.9 t/ha . Ratoon crop is standing with and without trash mulching and sequence will be followed by soybean crop with and without tillage and use of Trichoderma after harvest of ratoon. Growth and yield attributes of previous and succeeding crops in rotation are being recorded as per technical programme. Performance of crop was very good .After harvest of each crop total soil organic carbon, physical parameters and nutrient status will be analysed to assess carbon sequestration.

AS 72. Agronomic performance of elite sugarcane genotypes.

This experiment was conducted only at VSI, Pune centre with the objective to assess the Agronomic performance of sugarcane genotypes promoted from the Advance Varietal Trials (AVT). Different genotypes of early (5) and midlate (6) were planted on 18/01/2018 along with zonal & standard local checks at wider spacing (150 cm) with application of 125 per cent of recommended dose of NPK. The experiment was executed as per approved technical programme. Although crop is in maturing phase with good condition free from weeds , disease and pest. Performance of crop was very good .Genotypes tested CoM 11084 and CoM 11085 recorded more number of tillers at 300 DAP by 0.88 and 0.90 lac/ha , respectively. The observations on growth and yield attributes of sugarcane genotypes are under progress.

Out of seven centres of regular and voluntary, only one centre **VSI, Pune** as voluntary centre has attempted for conducting agronomical experiments during 2018-19. This centre has maintained very good crop growth , plant stand as well as all experiments were free from weeds , disease and pest. All other centre have not attempted efforts for carrying out the experiments probably due to facing some physical constraints and shortage of manpower. Two regular centres were unable for conducting the experiment due to withdrawal of the agronomist post. However , **Powerkheda** centre having post of agronomist but did not conduct the experiment.

C. ENTOMOLOGY

S.No	Centre	E 4.1	E 28	E 30	E 34	E 38	Total
1	Navsari	A/NC	A/NC	A/NC	NA	A/NC	4
2	Powarkheda	A/NC	A/NC	A/NC	NA	A/NC	4
3	Rudrur	NA	NA	NA	NA	NA	0
4	Pune	A/C	A/C	A/C	A/C	A/C	5
5	Padegaon	A/C	A/C	A/C	A/C	A/C	5
6	Pravaranagar	NA	NA	NA	NA	NA	0
7	Akola	A/C	A/C	A/C	NA	A/C	4

A/C : Allotted and Conducted; A/NC : Allotted and Not Conducted; NA: Not Allotted

I. Centre : Navsari Date of visit: 28/11/2018
Allotted Experiments : 4
1. E.4.1: Evaluation of zonal varieties / genotypes for their reaction against major insect pests.
2. E. 28: Survey and surveillance of sugarcane insect-pests.
3. E.30: Monitoring of insect-pests and bio-agents in sugarcane agro-ecosystem.
4. E.38: Formulation and validation of IPM Module of sugarcane insect-pests.

Since the Entomologist post is vacant under the AICRP, no experiment has been laid out in the current season.

General observations: Low incidence of mealy bug, internode borer and top borer was observed in the entries.

II. Centre : Powarkheda Date of visit : 29/11/2018
Allotted Experiments : 4
As a regular Centre, the following experiments have been allotted to the Centre:
1. E.4.1: Evaluation of zonal varieties / genotypes for their reaction against major insect pests.
2. E. 28: Survey and surveillance of sugarcane insect-pests.
3. E.30: Monitoring of insect-pests and bio-agents in sugarcane agro-ecosystem.
4. E.38: Formulation and validation of IPM Module of sugarcane insect-pests.

However, due to non-appointment of Entomologist to the Centre, no project has been laid out in the current season.

General observations: Observations in the breeders' trial plots indicated the incidence of internode borer and mealybugs as major pests. Wild boar incidence was noticed in many plots and much damage has been done to the genotypes in the trial plots.

III. Centre : Rudrur Date of visit :
01/12/2018 Allotted experiment : Nil

General observations : The voluntary centre of Rudrur has not been allotted any Entomology experiments.

General Observations: General incidence of internode borer was observed to be around <10% in the entries examined in the breeders' trial plots. Apart from INB, top borer, mealybug, and scale insects have been noticed, however, incidence levels were very low. Damage due to wild boar attack was also noticed.

IV. Centre : VSI, Pune Date of visit : 04/12/2018

Allotted Experiments : 5

As a voluntary Centre, the following experiments have been allotted to the Centre:
1. E.4.1: Evaluation of zonal varieties / genotypes for their reaction against major insect pests.
2. E. 28: Survey and surveillance of sugarcane insect-pests.
3. E.30: Monitoring of insect-pests and bio-agents in sugarcane agro-ecosystem.
4. E.34: Standardization of simple and cost effective techniques for mass multiplication of sugarcane bio-agents.
5. E.38: Formulation and validation of IPM Module of sugarcane insect-pests.

Separate Entomology trial was laid-out for screening of genotypes to major pests without insecticide application.

General observations : Pest incidence was low in trial plots which were planted on 31.12.2017. Patches of woolly aphid population could be seen in many plots, but there was serious incidence of the pest as predators such as *Dipha aphidivora* and *Micromus igorotus* were very active preventing further spread of the pest.

V. Centre : Padegaon Date of visit : 05/12/2018
Allotted experiment : 5

1. E.4.1: Evaluation of zonal varieties / genotypes for their reaction against major insect pests.
2. E. 28: Survey and surveillance of sugarcane insect-pests.
3. E.30: Monitoring of insect-pests and bio-agents in sugarcane agro-ecosystem.
4. E.34: Standardization of simple and cost effective techniques for mass multiplication of sugarcane bio-agents.
5. E.38: Formulation and validation of IPM Module of sugarcane insect-pests.

Separate Entomology trial was laid-out for screening of genotypes to major pests without insecticide application.

The Centre has planted separate trial for screening of genotypes against major pests free of insecticide application as per the technical programme.

General observations : The major pests noticed were internode borer and woolly aphid. Patches of woolly aphid could be noticed in the trial plots. Predators such as *Dipha aphidivora* and *Micromus igorotus* were found to be active and prevented further spread of the pest without the need for insecticidal intervention.

VI. Centre : Pravaranagar Date of visit: 07/12/2018
Allotted Experiments : Nil
No Entomology trial has been allotted to this voluntary Centre.

General observations: Observations made in the breeders' trial plot indicated that internode borer and woolly aphid are the major pests, however, incidence level of these pests were very low (<5%). Few

patches of woolly aphid could be noticed in the trial plots which had the activity of *Dipha aphidivora* and *Encarsia flavoscutellum.*

A visit also has been made to the Biological control laboratory of ICAR-IISR, Lucknow at Pravaranagar. The lab presently with limited facilities multiplies *Trichogramma chilonis* and entomophilic nematodes, *Steinernema* and *Heterorhabditis.*

VII. Centre : Akola Date of visit: 08/12/2018
Allotted Experiments : 4
1. E.4.1: Evaluation of zonal varieties / genotypes for their reaction against major insect pests.
2. E. 28: Survey and surveillance of sugarcane insect-pests.
3. E.30: Monitoring of insect-pests and bio-agents in sugarcane agro-ecosystem.
4. E.38: Formulation and validation of IPM Module of sugarcane insect-pests.

Since the Entomology post is vacant at present, no experiment was laid out in the current season.
General observations: Observations in the breeder's trial plot indicated that the major problem was wild boar incidence which has caused extensive damage of the genotypes. Extreme shortage of water coupled with monsoon failure is forcing the Centre to shift the trial to their Research Centre near Nagpur, where the next year trials will be laid out.

D. PATHOLOGY

Sl. No.	Name of centre	Experiments	Remarks
(1)	Navsari (Gujrat) visited on 28/11/18 conducted all allotted trials.	PP-14-conducted Date of Planting-05/01/18 Differentials-19 Date ofinoculation-16/8/18	• Inoculation carried out by plug method with three isolates viz. CF06, (Co 671), Co 86032 and Co 86002 • Observation taken after 60 days of inoculation
		PP-17a-Conducted Date of planting-05/1/18	• Entries-78 • Isolate-CoC 671 • Methods-Plug and nodal Check-Six Four (early) Two (Mid late)
		PP-17 b- Conducted D/P-09/1/18	• Entries-61 • Check-05 • Smut observed-CoSnk-15102, CoSi 95071, Co 86002, Co 97009, VSI-12121 and Co 86032
		PP-17 C-Conducted D/P-05/1/18	• Entries-78 • Planted in wilt Sick plot
		PP-17 (d) conducted	• Observation were taken naturally. The varieties affected with yellow leaf disease are VSI 12121, CoSnK 15104, CoSnK 15102, PI 15132
		PP-23 Conducted D/P-05/01/18	• Clones-28 • Date of inoculation-16/8/18 • Isolate used CF06 (Co 671) • Method-Plug
		PP 22 conducted	• **Smut**(5-10%)-CoSi 95071, Co 99004, Co86002, Co 0238, Co 97009 .
			• **Wilt** (1-3%)-CoM 0265, CoC 671, CoSi 95071, Co 86302, Co 86002
			• **Red rot** (1-2%)-CoVSI-03102,CoVSI-0434, CoC 671, Co 86032, Co 86002

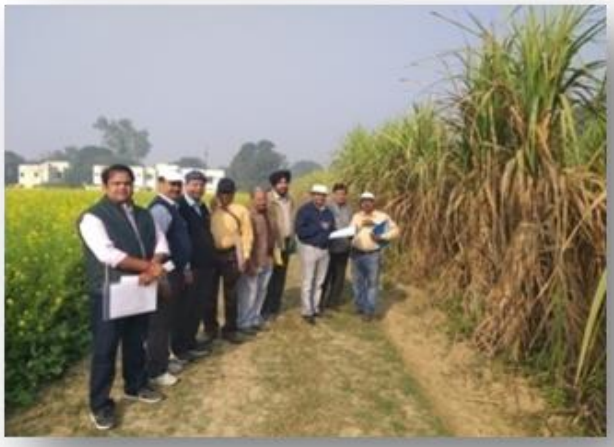
(2)	Powarkheda visited on Madhya Pradesh29/11/18	No Pathological trials were conducted as no Pathologist is available at the centre.	Visited Breeding trials **Under IVT trial** • CoSnk 05103 and Co 86032 were observed **mosaic** in traces . • Co 15005, Co 15006 and Co 15002-**YLD** • Co 15007-**Smut** • Co 85004-**Wilt** **AVT-II Plant** • CoM 12085-**Mosaic** and **wilt** • Co 12024-**Mosaic, YLD** • CoJnk 05103-**Mosaic** **Ratoon** • CoC 671-**Wilt**
3.	Rudrur (Telangana) visited on 01/12/18	No Pathological trials were allotted visited Breeding trials.	**AVT-II** Incidence of **YLD** observed in Co 12007, Co 12008, Co 12009, Co 12024, Co 86032. **Wilt**-Co 12007, Co 12009, Co 12012, CoM 12085, Co 86032 **Smut**-Co 12008, Co 12009, Co 86032 **Mosaic**-Co 671, Co 12019 **IInd Replication** **YLD**-Co 12032, PI 15132, CoVC 15064, CoVC 15062, CoVC 15063. **Wilt**-PI 15132, CoVC 15064, CoVC 15062, **Smut**-Co 12009, Co 15007 **Mosaic**-CoVC 15064, CoVC 15062, CoSnK- 15104. **AVT-I Plant** **YLD**-Co 13009, Co 13018, Co 13004, Co 13008, Co 13003, CoSnK 13103, Co 86032, Co 671. **Wilt**-Co 13009, Co 13006, Co 13004, Co 13003, CoSnk 13101 **Mosaic** Co 13004, Co 13008, CoSnK 05103, CoC 671, Co 86032. **PBD**-Co 13008

4.	VSI, Pune (Maharastra) visited on 04/12/18	PP-17 (b)-Conducted D/P-09/1/18	Out of 42 entries evaluated 23 were found affected with smut rest were free from smut disease. It varies in between 10.0% to 37.5%.
		PP-17(d)-Conducted	Naturally observed. **YLD** observed in Co 15007, CoSnK 13101, CoM 0265, VSI 08005.
		PP-22-Conducted	**During Survey-** □ **CoC 671**-PBD, GSD, Mosaic, YLD □ **Co86032**-Pine apple, GSD, Pokkahboeing, Smut, mosaic, rust. □ **CoVSI9805**-PBD, rust □ **CoM0265**-GSD, Brown spot. □ **Co92005**-Rust, GSD, PBD, Mosaic □ **CoVSI 03102**-GSD, Rust, PBD □ **MS 10001**-PBD, GSD □ **VSI 08005**-PBD, Smut, YLD
		PP 31-Conducted	□ Entries evaluate -14 □ D/P-09/01/18 □ Out of 14 entries evaluated single entry (COVSI 03102) was found free from **Pokkahboeng** disease under natural condition.

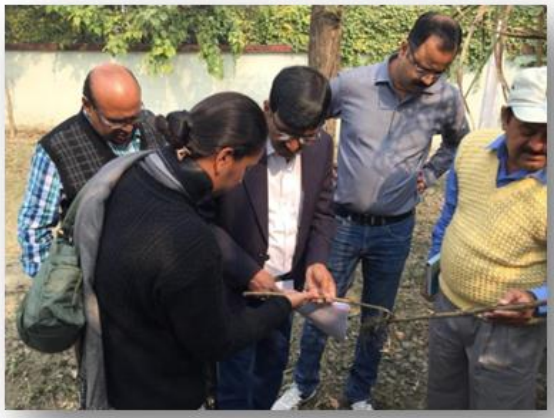
			(A) Epidemiology- Recorded temperature, Relative humidity and rainfall from may to September for the establishing the correlation with disease incidence.
			(B) Management of Pokkah boeng-Conduced D/P- 09/1/18 Replication-04 The treatments are imposed as per the technical programme and observations are being recorded.
	PP-32Conducted	D/P-09/01/18 Variety –COM 0265 Replication – 04	Till date, the disease was not observed and therefore, fungicides were not imposed but YLD in few clumps were observed in variety CoM 0265.
	PP-33Conducted	D/P-09/01/18	The Tissue culture plantslets of two varieties free from disease were planted in the field along with the control. The plots are inspected time to time for the disease observation but till date, the crop in free from YLD.
5.	Padegaon (Maharastra) visited on 05/12/18		No pathological trials were conducted as no pathologist available but visited Breeding and entomological trials. **In Breeding trials** **AVT-II** VSI-12121-**YLD** (Trace) Co 12024-**YLD** (heavy) Co 12008-**YLD** (heavy) Co 86032-**YLD** (Trace) CoSnK 05103, Co 120019-**mosaic**, Co 12009, **Smut** (heavy) **AVT-I** □ Co 13002, CoSnK 05103-**Mosaic** □ Co 13002, Co 13003, CoN 13072, Co 13008, Co 13018, CoSnK 13103, PI 13132, CoC 671-**YLD** □ Co 13020, CoC 671-**GSD** **IVT** □ CoSnK 15102- **Mosaic** □ CoSnk 15102, Co 15002, Co 15017, Co 15018, Co 15020, Co 86032, CoVC 15064, CoVC 15063-**YLD**. □ CoN 15072-**GSD** □ PI-15132-**Wilt** **Ratoon** □ Co 12008, Co 12024, CoC 671, VSI 12121-**YLD** □ Co 12009, VSI 12121-**Smut** **In Entomological Trials** □ Co 15002, Co 15009, CoVc15061,

			CoSnK 13106, Co 12008-**YLD** □ Co 15009, CoC 671, CoSnK 05103-**Mosaic** □ Co 15015, Co 15017-**Pokkah boeng** □ Co 13002, Co 13008, MS 13081, Co 12008-**Rust**.
6.	Parwaranagar (Maharastra) visited on 07/12/18	No Pathological trials were allotted visited breeding trials	**AVT-I** □ Co 13003, Co 13072, CoSnK 13101, Co 13014, Co 86032, CoSnK 13106, CoSnK 13103-**YLD** □ Co 13072, Co 13020-**Mosaic** □ Co 13003, CoSnK 13166-**Pokkah boeng.** **IVT** □ PI 15131, Co 15006, CoN 15071, Co 150102, CoSnK 15104-**YLD**. □ CoN 15071, CoSnK 05103, CoVC 15062-**Mosaic** □ CoSnK 05103, Co 15021, CoVe 15064-**Leaf spot** □ Co 15005, CoVc 15017-**PBD** □ CoVc 15063-**Rust** **AVT-II** □ CoC 671, Co 12024, Co 12007-**YLD** □ Co 12019-**Mosaic** **Ratoon** □ Co 12007, CoC 671, Co 12019-**YLD** □ CoC 671-**Mosaic**
7	Akola (Maharastra) visited on 08/12/18	No pathological trials were conducted as no pathologist available visited Breeding trials.	**AVT-I** □ Co 85004, Co 15018, Co 05103-**YLD** in traces □ Co 15015-**PBD** in traces □ Co 15009-**Wilt** heavy **AVT-II** □ Co 12007-**Wilt** heavy □ Co 12008, Co 12024-**YLD** in traces **IVT** □ VSI 15122, CoC 671 □ **PBD** in traces **Ratoon** □ Co 12019, CoSnK 05103, Co 12024-**YLD** □ Co 12007-**Wilt** heavy

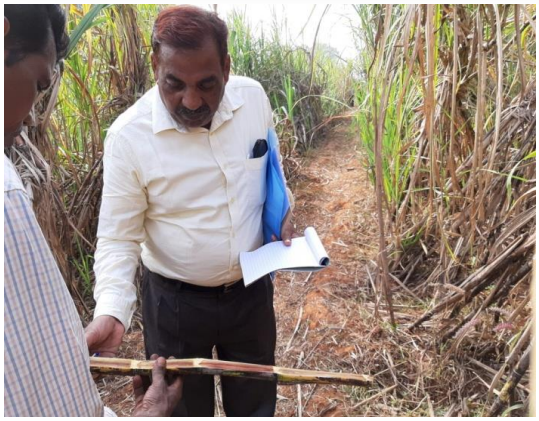
Field Visit of Monitoring Team (North West Zone)

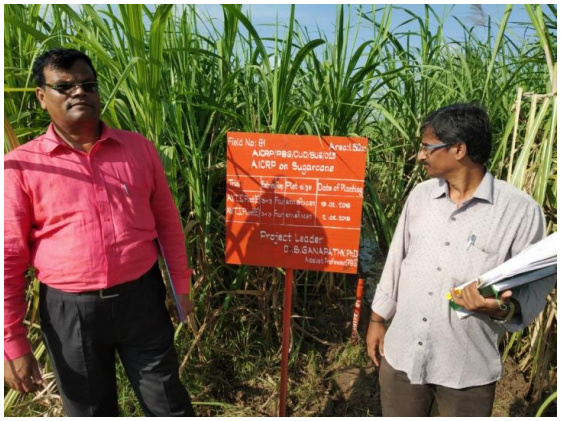


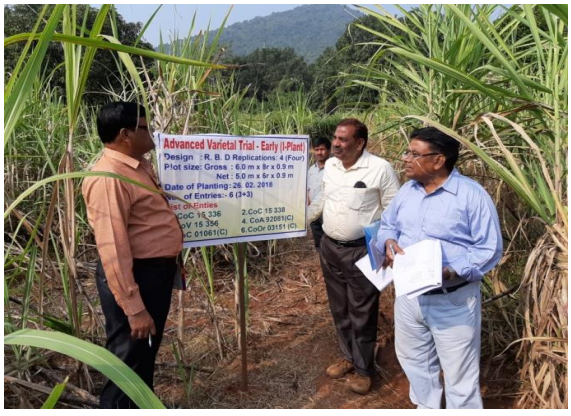
Field Visit of Monitoring Team (North Central & North Eastern Zones)



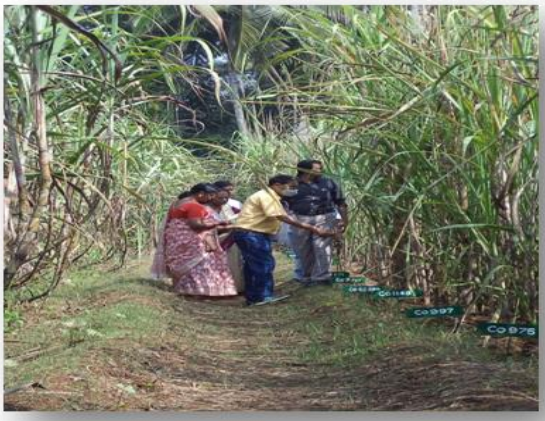
Field Visit of Monitoring Team (East Coast Zone)

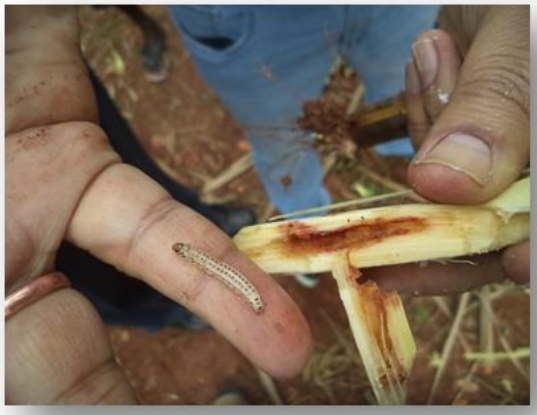




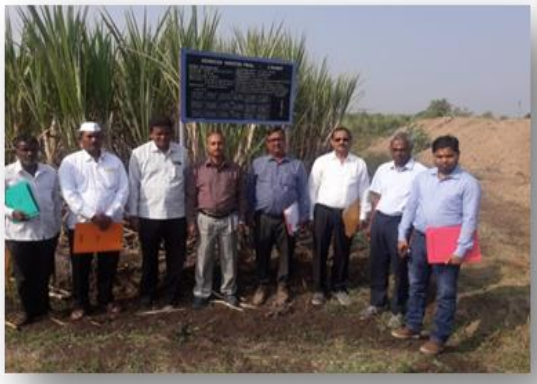


Field Visit of Monitoring Team (Peninsular Zone - I)





Field Visit of Monitoring Team (Peninsular Zone - II)



अखिल भारतीय समन्वित गन्ना अनुसंधान परियोजना
All India Coordinated Research Project on Sugarcane

Published by:

Dr S.K. Shukla, Project Coordinator (Sugarcane)
All India Coordinated Research Project on Sugarcane, ICAR-IISR, Lucknow-226002

Ph. No. 0522-2480787, Mob: 9335303793
E-mail: pcs.iisr@icar.gov.in; sudhirshukla151@gmail.com
www.iisr.nic.in/aicrp.index.htm
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