



**MAHATMA PHULE KRISHI VIDYAPEETH,
RAHURI-413 722, DIST- AHMEDNAGER**

REPORT OF THE RESEARCH WORK DONE

ON

SUGARCANE PATHOLOGY

ALL INDIA CO-ORDINATED RESEARCH PROJECT

(2011-2012)

**SUGARCANE PATHOLOGIST
CENTRAL SUGARCANE RESEARCH STATION, PADEGAON-415521
TAL. PHALTAN. DIST. SATARA (M.S.)**

Sugarcane Pathology Section, C.S.R.S. Padegaon		
STAFF POSITION (2011-12)		
Sugarcane Specialist -- Dr. S.M.Pawar (From 1.10.12)		
ALL INDIA CO-ORDINATED RESEARCH PROJECT: (AICRP)		
1.	Sugarcane Pathologist:	Dr. D.V. Indi (from 20/12/2010)
2.	Jr. Res. Asstt	Vacant (w.e.f. 24.06.2005)

RESEARCH HIGHLIGHTS (2010-11)

AICRP on Sugarcane (ICAR):

1. In the “Evaluation of zonal and inter zonal varieties/genotypes for resistance to smut under artificial conditions”, 2 genotypes from IVT (Early), 4 from AVT Early-I Plant, 4 from AVT Early-II Plant, 12 from IVT Midlate, 3 from AVT Midlate (I Plant) and 2 from AVT Midlate (II Plant) recorded resistant reaction to smut disease.
2. In the survey work conducted during the year 2011-12, rust was a major problem observed predominantly in Sangli and Kolhapur districts. The grassy shoot disease (GSD) was noticed in Kolhapur, Sangali, Ahmednagar and Pune regions. The incidence of Pokkah boeng was noticed on variety CoM 0265 and Co 86032 in Satara, Sangali and Kolhapur districts. Fe deficiency symptoms were noticed on CoM 0265 and eye spot was observed both on Co 86032 and CoM 0265.

ALL INDIA CO-ORDINATED RESEARCH PROJECT

Expt. No.1: Evaluation of zonal varieties / genotypes for resistance to smut (PP: 17 - B)

Objective : To gather information on the relative resistance of the entries in zonal varietal trial to smut disease.

Experimental Details

- 1 **Plot size :** 6 M x 2 Rows 4 **Season :** *Suru*
- 2 **Fertilizer dose:** 250:115:115 Kg N, P₂O₅ & K₂O/ ha 5 **Date of planting:** 01/ 02 /2011
- 3 **No. of genotypes:** 49+ 6 Ch.= 55
- 5 **Date of harvesting :** 29/03/2012

Results:

- 1) **IVT-(Early):** The results are presented in Table 3. Out of 5 genotypes included in IVT (Early), 2 genotypes *viz.*, CoN 08071 and VSI 08121 showed resistant reaction to smut. Two genotypes *viz.*, Co 08006 and PI 8131 showed moderately resistant reaction. One genotype *i.e.* Co 8001 showed moderately susceptible reaction to smut disease.
- 2) **AVT-Early (I Plant):** All genotypes *viz.*, Co 07012, Co 07015, CoN 07071 and PI 07131 showed resistant reaction to smut.
- 3) **AVT-Early (II Plant):** Out of 05 genotypes, 4 genotypes *viz.*, Co 06001, Co 06002, Co 06022 and CoM 06082 showed resistant reaction whereas one genotype *i.e.* PI 06132 showed moderately susceptible reaction to smut disease.
- 4) **IVT-Midlate:** Out of 18 genotypes tested, 12 genotypes *viz.*, Co 08007, Co 08008, Co 08009, CoJn 08091, CoM 08081, CoN 08072, CoR 08141, CoSnk 08101, CoVc 08062, CoVc 08064, CoVSI 08122 and CoVSI 08123 showed resistant reaction to smut. Three genotypes *viz.*, Co 08016, Co 08018, and Co 8020 showed moderately resistant reaction, whereas one genotype *i.e.* Co 8019 was moderately susceptible and two genotypes *viz.*, CoVc 08061, CoVc 08063 showed highly susceptible reaction to smut.
- 5) **AVT-Midlate I (Plant):** Out of 06 genotypes, 3 genotypes *viz.*, Co 07006, Co 07007 and Co 07008 showed resistant reaction to smut. One genotype each showed moderately resistant, moderately susceptible and highly susceptible reaction to smut.
- 6) **AVT-Midlate -II Plant:** Out of 11 genotypes tested, 2 genotypes *viz.*, Co 6015 and CoM 06082 showed resistant reaction, 5 genotypes *viz.*, Co 06010, Co 06013, Co 06014, Co 06027, and CoSnk 03632 showed moderately resistant reaction and two genotype each showed moderately susceptible and susceptible reaction to smut.

Smut Reaction Assessment key:	Incidence (%)
1. Resistant (R):	0.00
2. Moderately Resistant (MR):	0.01 to 10.00
3. Moderately Susceptible (MS):	10.01 to 20.00
4. Susceptible (S):	20.01 to 30.0
5. Highly Susceptible (HS):	More than 30.00

Table 3. Incidence of smut on sugarcane genotypes from AICRP under artificially inoculated conditions

Sr. No.	Genotype	% Smut	Reaction	Sr. No.	Genotype	% Smut	Reaction
IVT – Early (05)				AVT– Midlate I Plant(06)			
1	Co 08001	12.20	MS	33	Co 07006	0.00	R
2	Co 08006	6.90	MR	34	Co 07007	0.00	R
3	CoN 08071	0.00	R	35	Co 07008	0.00	R
4	PI 08131	7.32	MR	36	Co 07009	8.33	MR
5	VSI 08121	0.00	R	37	Co 07010	17.02	MS
AVT – Early I Plant (04)				38	CoSnk 07103	31.25	HS
6	Co 07012	0.00	R	AVT– Midlate II Plant(11)			
7	Co 07015	0.00	R	39	Co 06007	22.22	S
8	CoN 07071	0.00	R	40	Co 06010	8.00	MR
9	PI 07131	0.00	R	41	Co 06012	18.75	MS
AVT – Early II Plant (23)				42	Co 06013	8.33	MR
10	Co 06001	0.00	R	43	Co 06014	7.69	MR
11	Co 06002	0.00	R	44	Co 06015	0.00	R
12	Co 06022	0.00	R	45	Co 06020	21.67	S
13	CoM 06082	0.00	R	46	Co 06027	4.08	MR
14	PI 06132	10.53	MS	47	Com 06082	0.00	R
AVT– Midlate (18)				48	CoM 06084	13.33	MS
15	Co 08007	0.00		49	CoSnk 03632	4.17	MR
16	Co 08008	0.00	R	Checks			
17	Co 08009	0.00	R	Early Group			
18	Co 08016	3.70	MR	Midlate Group			
19	Co 08018	8.57	MR	1	Co 94008	18.42	MS
20	Co 08019	13.64	MS	2	Coc 671	0.00	R
21	Co 08020	3.33	MR	3	Co 85004	0.00	R
22	CoJN 08091	0.00	R	Midlate Group			
23	CoM 08081	0.00	R	4	Co 86032	8.00	MR
24	CoN 08072	0.00	R	5	Co 99004	31.03	HS
25	CoR 08141	0.00	R	6	Co 7219	32.79	HS
26	CoSnk 08101	0.00	R	7	Co 740	41.67	HS
27	CoVc 08061	52.00	HS				
28	Co Vc 08062	0.00	R				
29	Co Vc 08063	46.30	HS				
30	Co Vc 08064	0.00	R				
31	CoVSI 08122	0.00	R				
32	CoVSI 08123	0.00	R				

2) Expt.No: 2 Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties. (PP-22)

Objective: To gather information on the diseases naturally occurring in the area on varieties for compiling an all India disease status report yearly

Table No 4. Survey of sugarcane diseases in the region during 2011

Sr. No.	Area Surveyed	Variety	Different diseases/disorders noticed					
			Smut	GSD	Pokkah boeng	Rust	Fe def.	Eye Spot
1	Gooshatwadi, Tal. Phlatan, Dist. Satara.	Co 86032			Y			Y
2	Rajarambapu Patil SSK, Sakaralae, Tal. Walva, Dist. Sangli.	CoM 0265 Co 86032		Y	Y	Y		
3	Mahakali SSK, Kavatemahankal, Dist. Sangli	CoM 0265 Co 86032						
4	Seed plot at Agril. Tech. School, Kasbe Digaraj, Dist. Sangli	CoM 0265						Y
5	Kaleshwar, Mola, Ichalkaranji, Tal. Shirol, Dist. Kolhapur.	CoM 0265		Y		Y		
6	Kurundwad, Dattawad, Danwad, Takali, Kandale, Tal. Shirol, Dist. Kolhapur.	CoM 0265		Y				
7	Rajapur, Jaysingpur, Barwad, Hupri, Ingali, Taleage, Rangoli, Shirguppi, Yalgud, Tal. Shirol, Dist. Kolhapur.	CoM 0265		Y				
8	Kandale, Barwad, Bedkihal, Tal. Shirol, Dist. Kolhapur.	Co 86032		Y				
9	Kuuwar, Tal. Shirol, Dist. Kolhapur.	CoC 671		Y				
10	Mangavati, Borgaon, Tal. Shirol, Dist. Kolhapur.	CoC 671				Y		
11	Borgaon, Tal. Shirol, Dist. Kolhapur.	CoVSI 9805				Y		
12	Seed plot, college of Agril., Kolhapur.	Co 92005			Y	Y		
13	Seed plot RSJRS, Kolhapur	Co 92005 Co 94012				Y Y		
14	Seed plot at College of Agril. Pune	CoM 0265		Y				
15	Bodhegaon, Mungi, Tal. Shewagaon, Dist. Ahmednagar	CoM 0265					Y	
16	Seed plot at MPKV, Rahuri, Dist. Ahmednagar	Co 86032 CoM 0265		Y Y				

Results: The results have been presented in Table 4.

During the year 2011-2012, the incidence of various diseases like smut, grassy shoot, Pokkah boeng, rust, eye spot and brown spot and disorders like Fe deficiency were observed.

The rust disease was noticed on almost all the cultivated sugarcane varieties viz., Co 86032, CoM 0265, CoVSI 9805, Co 92005, CoC 671 and Co 94012. Rust was a major problem observed predominantly in Sangli and Kolhapur districts. The grassy shoot disease (GSD) was noticed in Kolhapur, Sangali, Ahmednagar and Pune regions. The incidence of Pokkah boeng was noticed on variety CoM 0265 and Co 86032 in Satara, Sangali and Kolhapur districts. Fe deficiency symptoms were noticed on CoM 0265 and eye spot was observed both on Co 86032 and CoM 0265.

PART-II: TECHNICAL PROGRAMME FOR THE YEAR 2012 -2013

ALL INDIA CO-ORDINATED RESEARCH PROJECT (ICAR)

- 1. PP 17. B** Evaluation of Zonal varieties / genotypes for resistance to smut.
- 2. PP 22.** Survey of sugarcane disease naturally occurring in the area on important sugarcane varieties.
- 3. PP 28.** Management of rust of sugarcane.

