

JAWAHARLAL NEHRU KRISHI VISHWA VIDYALAYA
Zonal Agriculture Research Station
Powarkheda, Hoshangabad 461 001 (M.P.)

Pawan Kumar Amrate <i>Scientist – Plant Pathology</i> AICRP ON SUGARCANE		Tele - fax – 07574-227257 Mobile- 08224821863 Email: pawanamrate@gmail.com
No ZARS/Sugar/PP/2013/..../ADR/.....		Date 21.06.2013

To,

Dr. R. Viswanathan, Head Division of Crop Protection &
Principle Investigator - AICRP on Sugarcane
Sugarcane Breeding Institute (ICAR),
COIMBATORE – 641 007 (Tamil Nadu)
E-mail: hdprot@sugarcane.res.in/rasaviswanathan@yahoo.co.in

Through: Proper channel.

Sub: Annual Report of AICRP on Sugarcane –Plant Pathology for the year of 2012-13
Sir,

Please find enclosed herewith a copy of “Annual Report - 2012-13” of AICRP on sugarcane (Plant Pathology), ZARS, Powarkheda (M.P.) for compilation and necessary action.

Kindly acknowledge the same.

With regards,

Yours faithfully

(Pawan K. Amrate)

No ZARS/Sugar/PP/2013/.../ADR/.....

Dated: **21.06.2013**

C.C to:

1. Dr. O. K. Sinha, Project Coordinator, AICRP on Sugarcane, Indian Institute of Sugarcane Research, P.O. Dilkusha, LUCKNOW- 225 002 (U. P.)
2. Director Research Services, J. N. K. V. V., Adhartal, Jabalpur (M.P.)
3. I/C AICRP on sugarcane, Z.A.R.S., Powarkheda - 461 001 (M.P.)

-for information & action please.

(Pawan K. Amrate)

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ANNUAL PROGRESS REPORT 2012-13

SUGARCANE-PLANT PATHOLOGY



***ALL INDIA COORDINATED RESEARCH PROJECT
ON SUGARCANE***



***JAWAHARLAL NEHRU KRISHI VISHWA VIDYALAYA
ZONAL AGRICULTURAL RESEARCH STATION
POWARKHEDA – 461 110 (M. P.)***

Annual Report of AICRP on Sugarcane Plant Pathology
For 2012- 2013

PP.17 (b): Evaluation of zonal varieties/genotypes for their resistance against smut disease

Objectives: To evaluate the entries of zonal varieties, AVT-I (E), AVT –II (E), AVT-I (ML) and AVT-II (ML) for their resistance to smut.

Plot size: Three meter long row planted with 10, three-bud setts with 2 replications.

Location: Zonal Agriculture Research Station, Powarkheda

Entries: All available entries (early and mid-late)

Inoculum: Freshly *Ustilago scitimineae* teliospores collected.

Inoculation: The method of inoculation consists of steeping of setts for 30 minutes in a spore suspension of over 90 % viability and with a spore load of one million spores per ml.

Observation: Incidence of smut was recorded as below:

0.0%	: Resistant (R)
More than 0.0 to 10%	: Moderately Resistant (MR)
More than 10 to 20%	: Moderately Susceptible (MS)
More than 20 to 30%	: Susceptible (S)
More than 30 %	: Highly Susceptible (HS)

Standards: Variety Co.7219 was used as check

Date of Planting: 22-01-2012

Year of Reporting: 2012 - 2013

Result:

Total 31 entries, early and mid-late along with one check namely Co.7219 was planted for their reaction to smut disease. The per cent incidence of smut on different genotypes was recorded and presented in table 1 & 2. Among the early genotypes, one entry i.e., PI 06132 exhibited resistance, eight moderately resistance and two moderately susceptible. The highest incidence of 14.47 per cent was recorded on Co 06022. Among the mid-late group of genotypes, four namely Co 07006, Co 06012, Co M 06082 and Co 07008 exhibited resistance, thirteen moderately resistance, three moderately susceptible. The standard check, namely Co 7219 showed 12.7 per cent incidence.

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

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

Location: Zonal Agriculture Research Station, Powarkheda.

Year of Reporting: 2012-2013

Observations:

Survey of different places of sugarcane growing were undertaken to record the incidence of major diseases like smut, red rot, wilt, GSD, YLSD and Pokkah boeng. Diseases recorded along with area, variety and location are given in Table no. 3.

- 1. Red rot:** The incidence of red rot disease was observed at Betul (1-2 and 2-4 per cent) on Co C 671 and Co 62175 variety, respectively.
- 2. Smut:** The smut was observed at almost all locations and on almost all varieties of sugarcane crop. The disease ranged in between 1 to 9 per cent at various locations. The highest incidence of smut was recorded at Narshinghpur (Kareli) on Co J 64.
- 3. Wilt:** The incidence of wilt was observed at Betul, Narshinghpur (Kareli) and Bankhedi up to 7 per cent.
- 4. Grassy Shoot Disease:** The incidence of GSD was recorded up to 15 per cent at Betul on the ratoon crop of Co 62175 variety.
- 5. Yellow Leaf Syndrome Disease:** The YLSD was observed in traces at most of the locations.
- 6. Pokkah Boeng:** Pokkah Boeng incidence was also noticed at various locations and the highest (5-7 per cent) was observed at hoshangabad on Co 99004.

Table 1. Reaction of different sugarcane early genotype/varieties against smut disease.

S.N.	Group	Genotype/ Variety	Per cent Incidence	Grade
1	AVT- (E) I	Co 08001	0.99	MR
2	AVT- (E) I	VSI 08121	5.75	MR
3	AVT (E) II	Co 07012	3.45	MR
4	AVT (E) II	Co 07015	3.16	MR
5	AVT (E) II	Co N 07071	7.69	MR
6	AVT (E) II	P I 07131	3.68	MR
7	AVT- (E) I (2010-11)	Co 06002	11.30	MS
8	AVT- (E) I (2010-11)	Co 06022	14.47	MS
9	AVT- (E) I (2010-11)	PI 06132	0.00	R
10	AVT- (E) I (2010-11)	Co 06007	1.92	MR
11	AVT- (E) I (2010-11)	Co 06001	6.06	MR
12	Check	Co 7219	12.70	MS

Table 2. Reaction of different sugarcane mid-late genotype/varieties against smut disease.

S.N.	Group	Genotype/ Variety	Per cent Incidence	Grade
1	AVT (M) I	Co 08008	2.22	MR
2	AVT (M) I	Co 08009	5.48	MR
3	AVT (M) I	Co 08016	0.78	MR
4	AVT (M) I	Co 08020	3.53	MR
5	AVT (M) I	Co Snk 08101	5.88	MR
6	AVT (M) II	Co 07006	0.00	R
7	AVT (M) II	Co 07007	6.75	MR
8	AVT (M) II	Co 07008	0.00	R
9	AVT (M) II	Co 07009	5.45	MR
10	AVT (M) II	Co 07010	18.60	MS
11	AVT (M) II	Co Snk 07103	2.06	MR
12	AVT (M) I (2010-11)	Co 06010	9.71	MR
13	AVT (M) I (2010-11)	Co 06012	0.00	R
14	AVT (M) I (2010-11)	Co 06013	13.60	MS
15	AVT (M) I (2010-11)	Co 06014	1.45	MR
16	AVT (M) I (2010-11)	Co 06015	7.53	MR
17	AVT (M) I (2010-11)	Co 06020	12.50	MS
18	AVT (M) I (2010-11)	Co 06027	8.30	MR
19	AVT (M) I (2010-11)	Co M 06084	6.00	MR
20	AVT (M) I (2010-11)	Co M 06082	0.00	R
21	Check	Co 7219	12.70	MS

Table: 3. Incidence of naturally occurring diseases on sugarcane

S.N.	Disease	Name of area	Per cent Disease Incidence	Varieties/location	Stage of Crop(month)	Any other information
1	Red rot	Betul	1-2 2-4	Co C 671 Co 62175	8-9 month	
2	Smut	Hoshangabad	4-5 2-3 1-4	Co 86032, Co 99004, Co C 671	8-10 month	
		Betul	3-5 4-5 1-3	Co 86032, Co 62175, Co C 671		
		Bankhedi	2-7 1-5 3-9	Co Lk 8001, Co 86032 Co J 64		
3	Wilt	Betul	0-7 0-5	Co C 671 Co 62175	8-9 month	
		Narshinghpur (Kareli)	2-5 1-4 traces 1-2	Co J 64 Co Lk 8001 Co 86032 Co 434		
		Bankhedi	1-5	Co Lk 80017&Co J 64		
4	GSD	Bankhedi	2-12 %	Co 95005 (Ratoon)	4-5 month	
		Betul	10-15 traces 2-3	Co 62175(ratoon), Co 86032, Co C 671		
		Hoshangabad	1-2 2-3 2-3	Ratoon of Co 86032, Co 7219, Co C 671		
		Narshinghpur	1-6 1-2	Co J 64 Co 88230		
5	YLS D	Hoshangabad	1-3 traces traces	Co 99004, Co 86032, Co 7318,	8-9 month	
		Betul	traces	Co C 671		
		Bankhedi,	2-4 1-4	Co 86032 Co J 64		
6	Pokkah Boeng	Hoshnagabad	5-7 1-2	Co 99004 Co 86032,	8-9 month	
		Kareli	2-3	Co 99004		
		Betul	3-4 traces	Co 86032 Co C 671		