

**ANNUAL REPORT**  
**Division of Plant Pathology, GSSBRI, Seorahi, Kushinagar.**  
**2014-2015**

**Experiment No. 1**

**Survey of Sugarcane Diseases in Eastern U.P.**

Survey was conducted to adjudge the performance of approved and promising varieties of sugarcane against diseases. During the year 2014-2015, 8 Sugar Factories viz; Seorahi, Ramkola (P), Dharha, Babhanan, Mankapur, Balarampur, Akabarpur and Rozagao have been surveyed. During the course of survey cultivar CoLk 8102, CoSe 95422 were found affected with red rot (5-10%) in Kushinagar and CoS 07250 was found affected with red rot (5-10%) in Gorakhpur, Deoria, and Khalilabad and CoSe 92423 were found affected with red rot (3-5%) in Babhanan (Gonda) districts. The incidence of wilt (1-2%) was found on cultivars, viz., CoSe 92423 and UP 9530 in same districts. The incidence of smut (5-10%) was recorded on cultivars, viz., CoSe 92423, CoSe 96436, CoSe 01424, CoSe 98231, CoS 767, CoS 88230, CoS 95255, BO 91 and UP 9530 particularly in ratoon crops in Kushinagar, Gonda, Basti, Maharajganj and Deoria districts. Grassy shoot (1-2%) was also recorded in same districts on cultivars, viz., UP 0097, CoSe 92423, CoS 767, CoS 8436, BO 91, CoS 95255, CoSe 98231 and UP 9530. Leaf scald (0.2-0.5%) was recorded on CoS 8436 and UP 9530 in Kushinagar district. Top rot (0.1-0.5%) was recorded on CoS 767 and UP 9530 in Maharajganj and Kushinagar districts. Pokkah boeng disease (0.1-0.2%) was recorded on CoS 8436, CoSe 92423, CoSe 95422, CoSe 96436 and Co 0238 in Eastern Districts of U.P. Knife-cut were reported in cultivars viz; CoSe 96436 and CoS 8436.

The incidence of various diseases of sugarcane are listed in Table - 1

**Experiment No. 2**

**Collection and maintenance of pathogenic mycoflora particularly of red rot disease through field survey in Eastern U.P.**

A survey of various districts of Eastern U.P. was undertaken during 2014-2015 to collect different varieties of infected canes in order to collect isolates of C. falcatum prevalent in this area. An isolate from CoSe 95422, CoS 07250, CoLk 8102 and CoSe 92423 were purified for further studies.

**Experiment No. 3**

**To study the resistance of different outstanding genotypes of sugarcane against red rot C. falcatum Went. Under Varietal evaluation programme**

**Standard Varietal Trial (red rot)**

**(A) S.V.T. (Early)**

In this experiment, 17 varieties including pathological standards were tested at Seorahi by different red rot inoculation techniques (Plug and Nodal) against ten pathotypes, viz., CF 07, CF 08, CF 09, CF 11, CoLk 8102, CoSe 95422, CoSe 92423, CoSe 98231, CoS 8436 and CoS 07250 (Mixed inoculums) of red rot pathogen. Out of 17, twelve varieties, viz., CoSe 08452, CoSe 13451, CoSe 13452, Seo 2719/07, Seo 6186/08, Seo 6580/08, Seo 1890/09, Seo 3906/09, Seo 693/10, Seo 2000/10 and BO 130 were found moderately resistant (**MR**) by plug method and resistant (**R**) by nodal method. 01 genotype, viz; Seo 3370/08 was rated as moderately susceptible (**MS**) and remaining were susceptible or highly susceptible to red rot disease (Table 2).

## **(B) S.V.T. (Mid-late)**

In this experiment, 17 varieties including standards were tested at Seorahi by plug and nodal methods of inoculation against mixed inoculums of ten pathotypes and Isolates of red rot pathogen.

Out of these, 17 varieties, 12 varieties, viz., CoSe 11453, CoSe 12452, CoSe 12453, CoSe 13454, Seo 2771/08, Seo 3128/08, Seo 52/09, Seo 89/09, Seo 2635/09, Seo 1349/10, Seo 2885/10 and CoP 9301 were found moderately resistant (**MR**) by plug and Resistant (**R**) by nodal method and remaining were susceptible to highly susceptible to red rot disease (Table 3).

## **Preliminary Varietal Trial (Red rot)**

### **(C) P.V.T. (Early):**

In this experiment, 26 genotypes were tested at Seorahi including standards by plug and nodal methods of inoculation against mixed inoculums of ten pathotypes and Isolates of red rot pathogens.

Out of these, 26 genotypes, 19 genotypes, viz., Seo 384/10, Seo 520/10, Seo 1595/10, Seo 2038/10, Seo 197/11, Seo 637/11, Seo 746/11, Seo 1432/11, Seo 1542/11, Seo 1861/11, Seo 2076/11, Seo 2113/11, Seo 2343/11, Seo 2460/11, Seo 3105/11, Seo 3509/11, Seo 3552/11, Seo 2755/11 and BO 130 were found moderately resistant (**MR**) by plug method and Resistant (**R**) by nodal method of inoculation, Seo 1367/10 was MS and remaining were susceptible or highly susceptible to red rot disease (Table 4).

### **(D) P.V.T. (Mid-late):**

At Seorahi 31 genotypes including standards were tested by plug and nodal methods of inoculation against mixed inoculums of ten pathotypes and Isolates of red rot.

Out of these, 35 genotypes, 18 genotypes, viz., Seo 01/11, Seo 04/11, Seo 95/11, Seo 100/11, Seo 121/11, Seo 677/11, Seo 1518/11, Seo 2475/11, Seo 2502/11, Seo 2760/11, Seo 2869/11, Seo 3086/11, Seo 3252/11, Seo 3259/11, Seo 3508/11, Seo 3554/11, Seo 3559/11 and CoP 9301 were found moderately resistant (**MR**) by plug method and Resistant (**R**) by nodal method of inoculation. 01 genotype, viz., Seo 2899/11 was found moderately susceptible (**MS**) by plug method and moderately resistant (**MR**) by nodal method of inoculation, remaining were found susceptible or highly susceptible to red rot disease (Table 5).

## **Zonal varietal trial**

To study the behavior of Popular Varieties against prevailing isolates of C. falcatum (Red Rot) at Seorahi

In this experiment, 06 Popular varieties, viz; CoSe 08452, CoS 08272, CoS 08279, Co 0118, Co 0238 and Co 98014 were tested with two pathotypes viz; CF 07 and CF 08 of red rot and all the test varieties were found moderately resistant to red rot disease.

**Red rot Testing In C2 generation:** To study the resistance of different genotypes of Sugarcane in C2 generation against Red rot and smut disease during 2014-2015.

In this experiment, Out of **538** clones, **502** clones were inoculated and **144** clones were found **MR**, **109** clones were **MS**, **117** clones were **S**, and **132** clones were found **highly susceptible** to red rot as well as smut disease where as **36** clones were not tested.

#### **Experiment No. 4**

#### **Resistance of promising varieties/genotypes of Sugarcane against Smut.**

The total of 39 early and mid-late varieties including standards were tested by primary and secondary methods of inoculation against smut disease of sugarcane. One mycological standard was also planted for their comparative control.

##### **(i) S.V.T. (Early) :**

Out of 17 varieties evaluated, 14 were rated as resistant (**R**), 01 was rated as moderately resistant (**MR**), 01 was rated as moderately susceptible (**MS**) and only the standard was highly susceptible to smut (Table 8).

##### **(ii) S.V.T. (Mid-late):**

Out of 17 varieties evaluated, 10 were rated as resistant (**R**), 05 were rated as moderately susceptible(**MS**), 01 was susceptible and the standard was highly susceptible to smut (Table 9 ).

#### **ANNUAL REPORT OF THE EXPERIMENTS CONDUCTED UNDER AICRP ON SUGARCANE PATHOLOGY AT GENDA SINGH SUGARCANE BREEDING AND RESEARCH INSTITUTE, SEORAH, KUSHINAGAR, U.P. DURING 2014-2015**

**PP- 14** Identification of pathotypes of red rot pathogen.

**Objective:** To gather information on the major pathotypes of red rot from different areas/zones.

**Location:** North Central Zone, G.S.S.B.R.I., Seorahi, Kushinagar, U.P.

**Year of start:** 1989-90(Continuing project)

**Differentials/Varieties/genotypes:**

1-Co 419	2- Co 975	3- Co 997	4-Co 1148
5- Co 7717	6- Co 62399	7-CoC 671	8-CoJ 64
9-CoS 767	10-CoS 8436	11-BO 91	12-Baragua (S. officinarum)
13-Khakai (S. sinence)	14-SES 594 (S. spontanium)		15-CoSe 95422
16-CoSe 92423	17-CoS 07250		

**No. of isolates:** Virulant isolates collected from red rot affected canes of commercially cultivated varieties in zones.

**Date of inoculation:** 25/26-08-2014

**Method of inoculation:**

Plug method of inoculation is to be used (details vide pp 17). Inoculation with one isolate to be done on all the differentials with same spore suspension . All inoculations to be completed in 2 days by last week of August. 30 canes of each of 17 differentials were inoculated with each of the above cited isolates of red rot fungus individually. Observations to the extent of disease development were recorded after 60 days of inoculations. The canes were split open longitudinally 60 days after inoculation along the point of inoculation. Inoculated canes free from borer infestation and other changes are taken for evaluation. Based on the parameters, viz; Nodal transgression, lesion width, white spots, condition of top green/ yellow/dry, rind infestation and sporulation over the rind, the host reaction is categorized into three groups, viz;(R) Resistant,(S)Susceptible,(I) Intermediate as follows:

**Resistant(R):** Lesion width laterally restricted, nodal transgression up to 2 nodes; white spots; rind infection, sporulation over the rind and yellow/dry of top absent.

**Susceptible (S):** Lesion width laterally spreading, Nodal transgression more than 2 nodes; white spots progressive or restricted; in case of progressive white spots, rind infection, sporulation over the rind and yellow/dry of top absent or present.

**Intermediate(I):** Lesion width laterally restricted or spreading, nodal transgression more than 2 nodes; white spots absent or present( restricted type); rind infection, sporulation over the rind and yellow/ drying of tops absent.

**RESULT**

The final data recorded 60 days after inoculation are presented in table 1. At Seorahi, 4 pathotypes, viz; CF 07, CF 08, CF 09 and CF 11 along with three isolates ,isolate-1 (isolated from CoSe 95422, isolate-2 (isolated from CoLk 8102 ) and isolate-3 ( isolated from CoSe 98231,) isolate-4 (isolated from CoS 07250)and isolate-5 (isolated from CoSe 92423 were inoculated on 17 differentials, viz; Co 419,Co 975, Co 997, Co 1148, Co 7717, Co 62399, Coc 671, CoJ 64, CoS 767, CoS 8436, BO 91, Baragua, Khakai , SES 594, CoSe 95422, CoLk 8102, CoSe 98231, CoS 07250 and CoSe 92423 were tested by plug method of inoculation with 7 days old culture of red rot pathogen. The reaction of isolate-1 resembled with the reaction of CF 07 and the reaction of isolate-2 resembled with CF 08 on all differentials whereas the reaction of isolate-3, 4 and 5 were differ with any of the tested pathotypes.

**PP 17(a):** Evaluation of I.V.T./A.V.T./Zonal varieties for resistance to red rot.

**Objective :** To gather information on the relative resistance to red rot of the enteries in zonal varietal trials of the respective zones.

**Location :** North Central Zone, Seorahi.

**Year of commencement :** 1989-90 (Continuing project).

Varieties :

**1-Initial Varietal Trial (Early)**

**Enteries (4):** CoP 11436, CoP 11437, CoP 11438 and CoSe 11451

**2-Advanced Varietal Trial (Early) II Plant**

**Enteries (4) :** BO 153, CoP 08436, CoSe 09452 and UP 09453

**3-Initial Varietal Trial (Mid-late)**

**Enteries (7):** BO 155, CoP 11439, CoP 11440, CoSe 11453,CoSe 11454, CoSe 11455 and CoSe 11456

**4- Advanced Varietal Trial (Mid-late) I Plant:**

**Enteries (3) :** CoSe 10451, CoSe 10452 and CoSe 10453

**5- Advanced Varietal Trial (Mid-late) II Plant:**

**Enteries (2):** BO 154 and CoP 09437

## RESULTS

At G.S.S.B.R.I; all the varieties including checks of different trials were evaluated by Plug, Nodal and Cotton swab methods of inoculation using pathotypes; viz, CF 07 and CF 08 separately and mixed inoculums of CF 07 and CF 08 pathotypes for Initial varietal trial (Early), Advanced varietal trial (Early) II Plant, Initial varietal trial (Mid- late), Advanced Varietal trial (Mid-late) I Plant and Advanced Varietal trial (Mid-late) II Plant. The inoculation was done in 2<sup>nd</sup> week of July by Nodal /Cotton swab method and in the last week of August by Plug method.

### Plug method

**Initial Varietal Trial (Early):** 4 varieties were evaluated against red rot, none behaved as resistant, 4 varieties, viz; CoP 11436, CoP 11437, CoP 11438 and CoSe 11451 were rated as moderately resistant to red rot disease.

**Advanced Varietal Trial (Early) II Plant :** 4 varieties were evaluated against red rot, none behaved as resistant, 4 varieties, viz; BO 153, CoP 08436, CoSe 09452 and UP 09453 were rated as moderately resistant to red rot disease.

**Initial Varietal Trial (Mid-late):** 7 varieties were evaluated against red rot, none behaved as resistant, BO 155, CoP 11439, CoP 11440, CoSe 11453, CoSe 11454, CoSe 11455 and CoSe 11456 were rated as moderately resistant to red rot disease.

**Advanced Varietal Trial (Mid-late) I Pant:** 3 varieties were evaluated against red rot, none behaved as resistant, 3 varieties, viz., CoSe 10451, CoSe 10452 and CoSe 10453 were rated as moderately resistant to red rot disease.

**Advanced Varietal Trial (Mid-late) II Plant:** 2 Varieties were evaluated against red rot, none behaved as resistant, CoP 09437 was rated as Moderately resistant where as BO 154 was rated as susceptible to red rot disease.

### SUMMARY

By Plug method ( Table -2 ), out of 20 varieties evaluated, none behave as resistant, 19 varieties were rated as moderately resistant and only BO 154 was susceptible to red rot.

### NODAL METHOD

**Initial Varietal Trial (Early):** 4 varieties were evaluated against red rot, 4 varieties, viz; CoP 11436, CoP 11437, CoP 11438 and CoSe 11451 were rated as resistant to red rot disease.

**Advanced Varietal Trial (Early) II Plant :** 4 varieties were evaluated against red rot, 4 varieties, viz; BO 153, CoP 08436, CoSe 09452 and UP 09453 were rated as resistant to red rot disease.

**Initial Varietal Trial (Mid-late):** 7 varieties were evaluated against red rot, BO 155, CoP 11439, CoP 11440, CoSe 11453, CoSe 11454, CoSe 11455 and CoSe 11456 were rated as resistant.

**Advanced Varietal Trial (Mid-late) I Pant:** 3 varieties were evaluated against red rot, 3 varieties, viz., CoSe 10451, CoSe 10452 and CoSe 10453 were rated as resistant to red rot disease.

**Advanced Varietal Trial (Mid-late) II Plant:** 2 Varieties were evaluated against red rot, CoP 09437 was rated as resistant where as BO 154 was rated as moderately susceptible to red rot disease.

### SUMMARY

By nodal method (table 2), out of 20 varieties evaluated, 19 varieties were rated as resistant, and one was rated as moderately susceptible to red rot disease.

## COTTON SWAB METHOD

Results recorded by cotton swab method were the same as the results recorded by Nodal method of inoculation.

**P 17 (b)** : Evaluation of pre-zonal/zonal varieties/genotypes for resistance to smut.

**Objective** :To gather information on the relative resistance to smut of the entries in pre-zonal/zonal trials of the respective zones.

**Location** :North Central zone, Seorahi, Kushinagar, U.P.

**Year of commencement** : 1997-98

**Variety** : As per PP 17

**Method** : The method of inoculation consists of steeping of sets (three budded) for 30 minutes in a spore suspensions of over 90 per cent viability with a spore load of one million spore per milliliter. The data is presented in Table 3 .

**Date of Planting** : 22-02-2014

**Date of inoculation** : 22-02-2014

## RESULTS

**Initial Varietal Trial (Early)**: 4 varieties were evaluated against smut, all the varieties viz; CoP 11436, CoP 11437, CoP 11438 and CoSe 11451 were rated as resistant to resistant to smut disease.

**Advanced Varietal Trial (Early) II Plant** : 4 varieties were evaluated against smut, Out of 04 varieties, 01 variety viz., BO 153 was rated as MS and CoP 08436, CoSe 09452 and UP 09453 were rated as resistant to smut disease.

**Initial Varietal Trial (Mid-late)**: 7 varieties were evaluated against Smut, Out of 07 varieties 05 varieties BO 155, CoP 11439, CoP 11440, CoSe 11455 and CoSe 11456 were rated as resistant while CoSe 11454 was rated as MR and CoSe 11453 was rated as MS to smut disease.

**Advanced Varietal Trial (Mid-late) I Pant**: 3 varieties were evaluated against smut, 3 varieties, viz., CoSe 10451, CoSe 10452 and CoSe 10453 were rated as resistant to smut disease.

**Advanced Varietal Trial (Mid-late) II Plant**: 2 Varieties were evaluated against smut, CoP 09437 was rated as resistant where as BO 154 was rated as moderately resistant to smut disease.

## SUMMARY

Out of 20 varieties evaluated against smut, 16 varieties were rated as resistant, 02 varieties were rated as moderately resistant, 02 varieties were rated as moderately susceptible to smut disease (Table-2).

**PP 22** : Survey of sugarcane diseases naturally occurring in the area on varieties for compiling an All India Disease status report yearly.

**Location** : North Central Zone, Seorahi, Kushinagar, U.P.

**Year of commencement** : 1989-90

**Observation :**

Periodic observation in June, September and December in all locations, to gather information on the incidence of diseases in all the varieties of the area (General survey).

**Disease situation during the current year:**

Survey was conducted to adjudge the performance of approved and promising varieties of sugarcane against diseases. During the course of survey during the year 2014-2015, cultivar CoLk 8102, CoSe 95422 were found affected with red rot (5-10%) in Kushinagar and CoS 07250 was found affected with red rot (5-10%) in Gorakhpur, Deoria, and Khalilabad and CoSe 92423 were found affected with red rot (3-5%) in Babhanan (Gonda) districts. The incidence of wilt (1-2%) was found on cultivars, viz., CoSe 92423 and UP 9530 in same districts. The incidence of smut (5-10%) was recorded on cultivars, viz., CoSe 92423, CoSe 96436, CoSe 01424, CoSe 98231, CoS 767, CoS 88230, CoS 95255, BO 91 and UP 9530 particularly in ratoon crops in Kushinagar, Gonda, Basti, Maharajganj and Deoria districts. Grassy shoot (1-2%) was also recorded in same districts on cultivars, viz., UP 0097, CoSe 92423, CoS 767, CoS 8436, BO 91, CoS 95255, CoSe 98231 and UP 9530. Leaf scald (0.2-0.5%) was recorded on CoS 8436 and UP 9530 in Kushinagar district. Top rot (0.1-0.5%) was recorded on CoS 767 and UP 9530 in Maharajganj and Kushinagar districts. Pokkah boeng disease (0.1-0.2%) was recorded on CoS 8436, CoSe 92423, CoSe 95422 CoSe 96436 and Co 0238 in Eastern Districts of U.P. Knife-cut were reported in cultivars viz; CoSe 96436 and CoS 8436 (Table-3)

**Table 1**

**Survey of Sugarcane Diseases in Eastern U.P.  
Incidence of Sugarcane Diseases in Eastern U.P. during 2014-15**

Disease	Affected Varieties	Area	Percent incidence
Red rot	CoLk 8102, CoSe 95422 CoS 07250 and CoSe 92423	KushinagarGorakhpur, Deoria Khalilabad and Gonda	5-10 5-10 3-5
Wilt	CoSe 92423 and UP 9530	-do-	1.0-2.0
Smut	CoSe 92423,CoSe 96436,CoSe 01424, CoSe 98231, CoS 767, CoS 88230, BO 91, CoS 95255 and UP 9530	Kushinagar,Gonda, Basti, Maharajganj and Deoria	5-10
G.S.D.	UP 0097,CoSe 92423,CoS 767,CoS 8436,BO 91,CoS 95255,CoSe 98231 UP 9530 and CoS 91269	-do-  Akbarpur	1.0-2.0  80.00
Leaf Scald	CoS 8436 and UP 9530	Kushinagar	0.2-0.5
Top rot	CoS 767 and UP 9530	Maharajganj and Kushinagar	0.1-0.5
Pokkah boeng	CoS 8436, CoS 767, CoSe 92423 and CoSe 95422 Co 0238	KushinagarGorakhpur, Deoria Khalilabad,Barabanki and Gonda	0.2-0.5
Knife-cut	CoSe 96436 and CoS 8436	Kushinagar	0.1-0.2

**Table 2**

**Varietal Resistance test against red rot disease (S.V.T. Early)**

Variety	Disease Reaction		Variety	Disease Reaction	
	Plug	Nodal		Plug	Nodal
CoSe 05456	S	MS	Seo 6186/08	MR	R
CoSe 08452	MR	R	Seo 6580/08	MR	R
CoSe 95422	S	MS	Seo 1890/09	MR	R
CoSe 11451	S	MS	Seo 3906/09	MR	R
CoSe 13451	MR	R	Seo 693/10	MR	R
CoSe 13452	MR	R	Seo 2000/10	MR	R
Seo 2719/07	MR	R	BO 130	MR	R
Seo 3005/08	S	MS	Co 1148	S	MS
Seo 3370/08	MS	MR			



**Table 3****Varietal Resistance test against red rot disease (S.V.T. Mid-late)**

Variety	Disease Reaction		Variety	Disease Reaction	
	Plug	Nodal		Plug	Nodal
CoSe 11453	MR	R	Seo 89/09	MR	R
CoSe 11454	HS	S	Seo 2635/09	MR	R
CoSe 12452	MR	R	Seo 908/10	S	MS
CoSe 12453	MR	R	Seo 1349/10	MR	R
CoSe 13453	S	MS	Seo 2885/10	MR	R
CoSe 13454	MR	R	CoSe 92423	S	MS
Seo 2771/08	MR	R	CoP 9301	MR	R
Seo 3128/08	MR	R	Co 1148	HS	S
Seo 52/09	MR	R			

**Table4: Varietal Resistance test against red rot disease (P.V.T. Early)**

Variety/genotype	Disease Reaction		Variety/genotype	Disease Reaction	
	Plug	Nodal		Plug	Nodal
Seo 384/10	MR	R	Seo 2031/11	S	MS
Seo 520/10	MR	R	Seo 2076/11	MR	R
Seo 734/10	S	MS	Seo 2113/11	MR	R
Seo 1367/10	MS	MR	Seo 2343/11	MR	R
Seo 1595/10	MR	R	Seo 2393/11	S	MS
Seo 1687/10	S	MS	Seo 2460/11	MR	R
Seo 2038/10	MR	R	Seo 2755/11	MR	R
Seo 197/11	MR	R	Seo 3105/11	MR	R
Seo 637/11	MR	R	Seo 3509/11	MR	R
Seo 746/11	MR	R	Seo 3552/11	MR	R
Seo 1432/11	MR	R	CoSe 95422	S	MS
Seo 1542/11	MR	R	BO 130	MR	R
Seo 1861/11	MR	R	Co 1148	HS	S

**Table 5: Varietal Resistance test against red rot disease (P.V.T. Mid-late)**

Variety/genotype	Disease Reaction		Variety/genotype	Disease Reaction	
	Plug	Nodal		Plug	Nodal
Seo 275/10	HS	S	Seo 2385/11	S	MS
Seo 2645/10	S	MS	Seo 2475/11	MR	R
Seo 2695/10	S	MS	Seo 2502/11	MR	R
Seo 2816/10	HS	S	Seo 2760/11	MR	R
Seo 01/11	MR	R	Seo 2761/11	S	MS
Seo 04/11	MR	R	Seo 2819/11	S	MS
Seo 95/11	MR	R	Seo 2869/11	MR	R
Seo 96/11	HS	S	Seo 3086/11	MR	R
Seo 100/11	MR	R	Seo 3252/11	MR	R
Seo 121/11	MR	R	Seo 3259/11	MR	R
Seo 187/11	S	MS	Seo 3508/11	MR	R
Seo 261/11	S	MS	Seo 3554/11	MR	R
Seo 275/11	HS	S	Seo 3559/11	MR	R
Seo 646/11	S	MS	Seo 3899/11	MS	MR
Seo 677/11	MR	R	CoSe 92423	MS	MR
Seo 1518/11	MR	R	CoP 9301	MR	R
Seo 1624/11	S	MS	Co 1148	HS	S
Seo 1671/11	S	MS			

### Zonal varietal trial

**Table 6:** Behavior of Popular Varieties against prevailing isolates of *C. falcatum* (Red Rot) at Seorahi

S.N.	Varieties	Behavior		
		CF 07	CF 08	Smut
1	CoSe 08452	MR	MR	MR
2	CoS 08272	MR	MR	MR
3	CoS 08279	MR	MR	MR
4	Co 0118	MR	MR	MR
5	Co 0238	MR	MR	MR
6	Co 98014	MR	MR	MR

**Table 7:** To study the resistance of different genotypes of Sugarcane in C2 generation against Red rot during 2014-2015.

Total Inoculated	502
MR	144
MS	109
S	117
HS	132
Un Inoculated	36
<b>Total</b>	<b>538</b>

**Table 8**

**Varietal Resistance test against Smut disease (S.V.T. Early)**

Variety	Disease Reaction	Variety	Disease Reaction
CoSe 05456	R	Seo 6186/08	R
CoSe 08452	R	Seo 6580/08	MR
CoSe 95422	R	Seo 1890/09	R
CoSe 11451	MS	Seo 3906/09	R
CoSe 13451	R	Seo 693/10	R
CoSe 13452	R	Seo 2000/10	R
Seo 2719/07	R	BO 130	R
Seo 3005/08	R	Co 1158	HS
Seo 3370/08	R		

**Table 9****Varietal Resistance test against Smut disease (S.V.T. Mid-late)**

Variety	Disease Reaction	Variety	Disease Reaction
CoSe 11453	R	Seo 89/09	R
CoSe 11454	R	Seo 2635/09	MS
CoSe 12452	R	Seo 908/10	MS
CoSe 12453	R	Seo 1349/10	R
CoSe 13453	S	Seo 2885/10	R
CoSe 13454	MS	CoSe 92423	MS
Seo 2771/08	R	CoP 9301	R
Seo 3128/08	MS	Co 1158	HS
Seo 52/09	R		

**NORTH CENTRAL ZONE****SEORAH****(2014-2015)****Table -1** Pathogenic behavior Isolates of C. falcatum on a set of differentials

SL. No.	Pathotype /isolates	Source	Reaction of host differentials																
			Co 419	Co 975	Co 997	Co 1148	Co 7717	Co 62399	CoC 671	CoJ 64	CoS 767	CoS 8436	BO 91	Baragua	Khakai	SES 594	CoSe 95422	CoSe 92423	CoS 07250
1	CF 07	CoJ 64	I	R	S	S	R	R	S	S	R	R	I	R	S	R	-	-	-
2	CF 08	CoJ 64	I	S	S	S	S	S	S	S	I	R	R	R	S	R	-	-	-
3	CF 09	CoS 767	I	I	S	S	R	R	I	S	S	R	R	R	S	R	-	-	-
4	CF 11	CoJ 64	S	I	S	I	I	I	I	S	I	R	I	I	I	R	-	-	-
5	Isolate-1	CoSe 95422	I	R	S	S	R	R	S	S	R	R	I	R	S	R	S	I	S
6	Isolate-2	CoLk 8102	I	S	S	S	S	S	S	S	I	R	R	R	S	R	S	I	I
7	Isolate-3	CoSe 98231	I	S	S	S	I	I	I	S	I	I	S	I	R	I	I	S	S
8	Isolate-4	CoS 07250	S	S	S	I	I	S	S	I	S	I	S	S	I	I	S	S	S
9	Isolate-5	COSe 92423	S	S	S	S	I	S	I	I	S	I	S	S	R	I	I	S	S



**Table 3:** Survey of sugarcane diseases naturally occurring in the area on important sugarcane varieties.

**Incidence of sugarcane diseases in Eastern U.P. during 2014-2015**

<b>Disease</b>	<b>Affected Varieties</b>	<b>Area</b>	<b>Percent incidence</b>
Red rot	CoLk 8102, CoSe 95422 CoS 07250 and CoSe 92423	KushinagarGorakhpur, Deoria Khalilabad and Gonda	5-10 5-10 3-5
Wilt	CoSe 92423 and UP 9530	-do-	1.0-2.0
Smut	CoSe 92423,CoSe 96436,CoSe 01424, CoSe 98231, CoS 767, CoS 88230, BO 91, CoS 95255 and UP 9530	Kushinagar,Gonda, Basti, Maharajganj and Deoria	5-10
G.S.D.	UP 0097,CoSe 92423,CoS 767,CoS 8436,BO 91,CoS 95255,CoSe 98231 UP 9530 and CoS 91269	-do-  Akbarpur	1.0-2.0  80.00
Leaf Scald	CoS 8436 and UP 9530	Kushinagar	0.2-0.5
Top rot	CoS 767 and UP 9530	Maharajganj and Kushinagar	0.1-0.5
Pokkah boeng	CoS 8436, CoS 767, CoSe 92423 and CoSe 95422 Co 0238	KushinagarGorakhpur, Deoria Khalilabad,Barabanki and Gonda	0.2-0.5
Knife-cut	CoSe 96436 and CoS 8436	Kushinagar	0.1-0.2