

**ANNUAL REPORT OF EXPERIMENT CONDUCTED UNDER AICRP ON
SUGARCANE 2012-13**

ENTOMOLOGY DIVISION

G.S SUGARCANE BREEDING & RESEARCH INSTITUTE, SEORAH, KUSHINAGAR, U.P.

Project No. E.4.1

Title :- Evaluation of Zonal varieties/genotypes for their reaction against major insect-pests.

Objective :- To grade the entries in the zonal varietal trails for their behaviour towards damage by key pests in the area.

Under AVT 1st plant (Mid- late) three genotypes along with CoSe 92423, Bo91 and CoP 9301 as check were evaluated against shoot, top, stalk and root borer.

AVT 1st plant (Mid-late)

All the varieties including standards showed less susceptible reaction to shoot borer. The minimum and maximum infested varieties were (6.53 %) in CoSe 08451 and (10.50%) in CoP 08437. Based on cumulative incidence of 3rd and 4th brood of top borer the variety CoP 08437 (6.60%) including standard CoSe (14.45%) showed less susceptible, while rest of the varieties viz. CoSe 08451 (10.30%) and CoSe 08452 (9.95%) including standards Bo 91 (11.45%) and CoSe 92423 (14.45%) showed moderate susceptible reaction to top borer. Regarding the stalk borer infestation, all the varieties including standards showed less susceptible reaction. The infestation index of stalk borer was low, ranging from 0.14 in CoSe 92423 and 0.25 in CoP 9301.

Project No. E.28

Title: - Survey and Surveillance of sugarcane insect-pests.

Objective :- To identify key insect-pests of sugarcane in the area.

A survey were made in and around different sugar mills for key insect-pests of sugarcane. The incidence of early shoot borer was low to medium. It ranged from 1.00-9.00% (minimum) around Jarvlroad factory zone, while maximum 2.00-12% around Seorahi factory zone. Top borer infestation was minimum 3-12% around Babhanan Factory zone and maximum 5-16% around Manakapur factory zone. The infestation of stalk borer was ranged from 12-18% around Ramkola (P) to 18-25% in Manakapur factory zone. The incidence of root borer was recorded 20-30% in Ramkola (P) factory zone only. There was no incidence of other insect-pests in the area.

Project No.E. 30

Title: - Monitoring of insect-pests and bio-agents in sugarcane agro-ecosystem.

Objective:- To monitor the key-insect pests and natural enemies in the area.

The experiment was conducted on 0.2ha area with CoSe 01424 cultivars at Seorahi to monitor the key insect-pests and their natural enemies. Cumulative incidence of shoot, top and Stalk borer was recorded 18.12%, 8.62% and 20.00% respectively. *Isotima javensis*, *stenobracon sp.*, *Elasmus zehntneri*, *Rhaconotus scirpophagae* were recorded major parasitoid of top borer. *Cotesia flavipes* was recorded from stalk borer. Minimum parasitisation 3.22% by *Isotima javensis* was recorded in the month of may

while it was maximum 18.18% in the month of August. The parasitisation of *stenobracon* sp. was observed with minimum 3.12% in May which increased to its maximum 16.00% in the month of August. The parasitisation of top borer by *Elasmus zehntneri* and *Rhaconotus Scirpophagae* was observed with minimum 5.26% and 3.44% in June which increases up to 113.04% and 12.50% in the month of August. *Cotesia flavipes* parasitizes maximum 22.72% to stalk borer larvae during September which decreases up to 8.33% in the month of November.

Project No. E.32

Title:- Population dynamics of Sugarcane borers (early shoot borer top borer and stalk borer) through pheromone trap.

Objective:- To study the population dynamics of Sugarcane borers (Early shoot borer, top borer and stalk borer) through pheromone trap and influence of weather parameters on moth catches.

The experiment was conducted on 0.4ha area with CoSe 98231 cultivar at seorahi to study the population dynamics of sugarcane borers (early shoot borer, top borer and stalk borer) through pheromone trap and influence of weather parameters on moth catches. Three pheromone traps for each pest were installed in the 2nd fortnight of February till the harvest of the crop. Total no. of moth trapped were recorded at monthly intervals. The mean no. of moth captured was worked out. The pheromone lure was changed at monthly intervals.

Study reveals that highest no. of shoot borer moth catches in pheromone trap was recorded in the month of April (19.99 moths/trap) followed by June (11.99 moths/trap) and May (7.65 moths/trap).

Top borer moth catches started from March with highest number (13.65 moths/trap) followed by July (10.65 moths/trap) and May (9.66 moths/trap). Peak activity of stalk borer (30.00 moths/trap) was recorded in the month of August followed by June (20.99 months/trap) and May (17.98 moths/trap).

Evaluation of zonal varieties /genotypes for their reaction against major insect-pests.

AVT 1st Plant (Mid-late)

Genotypes	% Incidence of		Stalk borer infestation index	Root borer % Incidence
	Shoot borer	Top borer Cumulative (111+1V)		
Co Se 08451	6.53	10.30	0.17	5.32
Co Se 08452	7.23	9.95	0.15	7.35
Co P 08437	10.53	6.60	0.18	8.06
B O 91	7.32	11.45	0.20	3.21
Co P 9301	8.86	8.68	0.25	6.33
Co Se 92423	8.22	14.45	0.14	4.57

Project No. E.28

Incidence of major insect pests in different factory zone of U P 2012-13

Factory Zone	Percent incidence of			
	Shoot borer	At harvest		
		Top borer	Stalk borer	Root borer
Seorahi	2.00-12.00	4-13	15-20	-
Manakapur	1.75-8.00	5-16	18-25	-
Blrampur	2.00-10.00	4-15	16-18	-
Babhanan	1.50-10.00	3-12	15-22	-
Jarvlroad	1.00-9.00	5-14	16-22	-
Dhadha	1.50-12.00	5-14	14-20	-
Ramkola (P)	3.00-10.00	5-15	12-18	20-30

Project No. E. 30

Monitoring of insect-pests and bio-agents in sugarcane ecosystem during 2012-13

Insect-pests	%Incidence	Month	Parasitoids recorded				
			Isotima javensis	Stenobracon sp.	Elasmus zehnteri	Rhaconotus scirpophagae	Cotesia flavipes
Shoot borer	18.12Cumulative	April-June	-	-	-	-	-
Top borer	3.28 (2 nd brood)	May	3.22	3.12	-	-	-
		June	4.54	6.25	5.26	3.44	-
	8.62(3 rd brood) Cumulative	July	14.28	13.04	10.52	8.33	-
		August	18.18	16.00	13.04	12.50	-
		September	6.06	5.71	5.55	4.16	-
Stalk borer	20.00	September	-	-	-	-	22.72
		October	-	-	-	-	16.00
		November	-	-	-	-	8.33

Project no. E-32
Population dynamics of sugarcane borers through pheromone trap at Seorahi 2012-13

Month	Av. of maximum temp 0c	Av. of humidity %	Total rain fall (mm)	No of moth trapped		
				ESB	Top borer	Stalk borer
March	29.83	63.70	31.8	4.66	13.65	7.98
April	34.77	59.41	5.4	19.99	4.66	3.66
May	36.67	58.16	27.00	7.65	9.66	17.98
June	37.69	57.86	70.2	11.99	2.66	20.99
July	34.16	72.67	265.6	4.32	10.65	4.66
August	33.24	84.87	360.2	1.65	4.66	30.00
September	32.79	73.93	183.2	0.33	2.32	14.33
October	32.12	68.61	3.00	0.33	0.33	7.66

+0.5343	-0.6841	-0.4538	r	-	-
-0.2248	-0.1583	-0.0206	-	r	-
+0.3159	+0.3712	+0.4868	-	-	r