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Dt. 29-05-2014

To,

Dr.G.G.Radadia,
Principal Investigator,
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Professor of Entomology,
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Sub. : Submission of Annual Report of Entomology discipline for the year 2013-2014.

Sir,

Kindly find enclosed herewith the Annual Report of AICRP on Sugarcane of Entomology Division for your kind perusal and necessary action.

Thanking you,

Encl.: As above

Yours faithfully,

29.05.14

(I.S.SINGH)
Officer –in-charge

No. Dated

Copy forwarded to:-

1- Dr. O.K. Sinha Project Coordinator, AICRP on Sugarcane, Indian Institute of Sugarcane Research P.O. DilKhusha,Lucknow-226002
2- Director, U. P. Council of Sugarcane Research, Shahjahanpur for information.

(I.S.SINGH)
Officer –in-charge

ANNUAL REPORT OF EXPERIMENT CONDUCTED UNDER AICRP ON SUGARCANE (2013-14)

ENTOMOLOGY DIVISION

G.S SUGARCANE BREEDING & RESEARCH INSTISTUTE, SEORAHI, 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 (Early) five genotypes along with two standard variety Bo 130 and CoSe 95422 For evaluation against shoot, top, stalk and root borer.

AVT 1st plant (Early)

All the varieties including standards showed less susceptible reaction to shoot borer. The minimum and maximum infested varieties were (5.65%) in CoSe 09452 and (8.95%) in BO 153. Based on cumulative incidence of 3rd and 4th brood of top borer the variety CoSe 09451 (11.08%) including standard variety CoSe 95422 (14.00%) showed less susceptibile, while rest of the varieties viz BO 153 (12.72%), CoP 09436 (13.49%), CoSe 09452 (13.99%) and UP 09453 (11.23%) including standards Bo 130 (12.08%) 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 0.12 in BO 130 and 0.32 in CoSe 95422. The root borer infestation was low in range from 6.90% (BO 130) to 9.75% (BO 153). Table-1

AVT 1st plant (Mid-late)

All the varieties including standards showed less susceptible reaction to shoot borer. The minimum and maximum infested varieties were 3.52% in CoP 09437 and 5.24% in BO 154. Based on cumulative incidence of 3rd and 4th brood of top borer the variety CoP 9301 (7.22%) including standard BO 154 (11.44%) showed less susceptible, while rest of the varieties viz. CoP 09437 (10.83%), BO 91 (10.36%) and CoSe 09454 (7.26%) including standards CoSe 92423 (8.91%) 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 0.11 in CoSe 09454 to 0.34 in CoP 9301. The root borer infestation was low in range from 4.02% (BO 91) to 7.25% (CoP 09437). Table-2

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 was 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 2-10% (minimum) around Seorahi factory zone, while maximum 3-13% around Khadda factory zone. Top borer infestation were ranged minimum 4-11% around Babhanan Factory zone and maximum 8-20% around Dhadha factory zone. The infestation of stalk borer were ranged from 10-15% around Captanganj to 18-26% in Ramkola factory zone. The incidence of root borer ranged were minimum recorded 5-10% in Seorahi factory zone and maximum 10-20% in Captangang factory zone. 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 18.80%, 9.44% and 13.80% respectively. *Isotima javensis, stenobracon sp., Elasmus zehntneri, Rhaconotus scirpophagae* were recorded major parasitiod of top borer and *Cotesia flavipes* for stalk borer. Minimum parasitisation 2.63% 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 2.85% in May which increased to its maximum 15.38% in the month of August. The parasitisation of top borer by *Elasmus zehntneri* and *Rhaconotus scirpophagae* was observed minimum 5.00% and 3.33% in June which increases up to 13.63% and 10.00% in the month of August. *Cotesia flavipes* parasitizes maximum 20.00% to stalk borer larvae during September which decreases in the month of November(9.09%).

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 whether 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 whether 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 was 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 moth of April (16.65 moths/trap) followed by June (11.66 moths/trap) and May (7.33moths/trap).

Top borer moth catches started from March with highest number (14.65 moths/trap) followed by July(10.66 moths/trap) and May (8.32 moths/trap).Peak activity of stalk borer (30.99 moths/trap) was recorded in the month of August followed by June (25.32 months/trap) and May (22.98 moths/trap).

Project No. E.4.1

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

Table- 1: AVT 1st Plant (Early)

Sr. No.	Genotypes	% Incidence of		Stalk borer infestation index	Root borer % Incidence
		Shoot borer	Top borer Cumulative (III+IV)		
1.	**BO 153**	8.95	12.72	0.13	9.75
2.	**CoP 09436**	6.07	13.49	0.33	8.83
3.	**CoSe 09451**	7.96	11.08	0.22	6.35
4.	**CoSe 09452**	5.65	13.99	0.23	9.32
5.	**UP 09453**	6.34	11.23	0.18	8.21
6.	**BO 130**	8.00	12.08	0.12	6.90
7.	**CoSe 95422**	8.23	14.00	0.32	7.60

Table- 2: AVT 1st Plant (Mid-late)

Sr. No.	Genotypes	% Incidence of		Stalk borer infestation index	Root borer % Incidence
		Shoot borer	Top borer Cumulative (III+IV)		
1.	BO 154	5.24	11.44	0.24	5.65
2.	CoP 09437	3.52	10.83	0.28	7.25
3.	CoSe 09454	4.45	7.26	0.11	6.82
4.	BO 91	3.79	10.36	0.16	4.02
5.	CoP 9301	4.41	7.22	0.34	5.65
6.	CoSe 92423	3.77	8.91	0.13	4.75

Project No. E.28

Incidence of major insect pests in different factory zone of U P 2013-14

S.N.	Factory Zone	%Incidence of			
		Shoot borer	At harvest		
			Top borer	Stalk borer	Root borer
1	Seorahi	2-10	6-15	15-25	5-10
2	Ramkola (P)	3-10	5-13	18-26	8-15
3	Captangang	4-12	6-14	10-15	10-20
4	Dhadha	2-13	8-20	17-25	7-16

5	**Khadda**	3-13	7-18	18-27	6-14
6	**Babhana**	2-11	4-11	14-20	8-17

Project No. E. 30

Monitoring of insect-pests and bio-agents in sugarcane ecosystem during 2013-14

Insect-pests	**%Incidence**	**Month**	**Parasitoids recorded**				
			Isotima javensis	**Stenobracon sp.**	**Elasmus zehnteri**	**Rhaconotus scirpophagae**	**Cotesia flavipes**
Shoot borer	**18.80Cumulative**	**April-June**	**-**	**-**	**-**	**-**	**-**
Top borer	**3.32 (2nd brood)**	**May**	**2.63**	**2.85**	**-**	**-**	**-**
		June	**4.00**	**4.00**	**5.00**	**3.33**	**-**
	9.44(3rd brood) Cumulative	**July**	**13.63**	**12.50**	**5.00**	**7.40**	**-**
		August	**18.18**	**15.38**	**13.63**	**10.00**	**-**
		September	**6.66**	**5.00**	**5.88**	**4.44**	**-**
Stalk borer	**13.80**	**September**	**-**	**-**	**-**	**-**	**20.00**
		October	**-**	**-**	**-**	**-**	**14.28**
		November	**-**	**-**	**-**	**-**	**9.09**

Project no. E-32

Population dynamics of sugarcane borers through pheromone trap at Seorahi 2013-14

Month	Av. of maximum temp 0c	Av. of humidity %	Total rain fall (mm)	No of moth trapped		
				ESB	Top borer	Stalk borer
March	29.67	63.70	31.8	3.66	14.65	11.66
April	33.19	62.34	55.2	16.65	3.67	2.66
May	34.68	62.62	78.8	7.33	8.32	22.98
June	32.44	73.68	206.8	11.66	2.67	25.32
July	32.86	72.11	140.2	5.65	10.66	3.33
August	32.40	71.85	337.0	2.66	5.32	30.99
September	33.58	65.85	70.4	0.66	2.99	15.32
October	30.99	72.32	169.4	0.33	0.33	9.66
	+0.318	+0.2579	-0.1999	r	-	-
	-0.2651	-0.3779	-0.3535	-	r	-
	+0.1809	+0.25496	+0.6242	-	-	r