

**ANNUAL REPORT OF EXPERIMENT CONDUCTED UNDER AICRP
ON SUGARCANE (2014-15)
ENTOMOLOGY DIVISION
G.S. Sugarcane Breeding and Research Institute, Seorahi-
Kushinagar, U.P.-India**

Project No. E-4.1

Title :-Evaluation of zonal genotype for their reaction against major insect-pests.

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

Under AVT 2nd plant (Early) Six genotypes along with two standard varieties BO130 and CoSe 95422 for evaluation against Shoot, Top, Stalk and Root borer.

AVT (Early) 2nd plant

All the varieties including standards showed less susceptible reaction to **Shoot borer**. The cumulative incidence of Shoot borer minimum and maximum were found (7.22%) in CoSe 09452 and (12.41%) in CoSe 95422. Based on cumulative incidence of 3rd and 4th brood of **Top borer** was recorded (4.50%) in CoP 09436 and (7.92%) in UP 09453 including standard (7.06%) in BO 130 and (6.67%) in CoSe 95422. minimum (8.88%) in BO 153 and maximum (10.00%) in UP 09453. **Top borer** incidence were found at harvest against standards (10.58%) in BO130 as well as (11.21%) in CoSe 95422. Regarding **Root borer** minimum (3.61%) in CoP 09436 and maximum (4.25%) in BO 153 incidence were found against standard (5.37%) in BO 130 and (4.87%) in CoSe 95422. The **Stalk borer** infestation index was observed (0.21) to (0.44) in CoP 09436 and UP 09453 with standard (0.10) to (0.25) in BO 130 as well as CoSe 95422 respectively.

Under AVT 1st plant (Mid-late) Six genotypes along with three standard variety BO91 CoSe 92423 and CoP 9301 for evaluation against Shoot, Top, Stalk and Root borer.

AVT (Mid-late) 1st plant

All the varieties including standards showed less susceptible reaction to Shoot borer. The cumulative incidence of **Shoot borer** minimum and maximum were found (8.75%) in CoSe 10452 and (11.57%) in BO 91. Based on cumulative incidence of 3rd and 4th brood of **Top borer** was recorded (7.51%) in CoSe 10451, (6.54%) in CoSe 10452, (6.93%) CoSe 10453 and standard (7.43%) in BO 91, (6.07%) in CoSe 92423 and (8.88%) in CoP 9301. **Top borer** incidence were found at harvest (6.31%) in CoSe 10451, (7.50%) in CoSe 10452, (5.35%) CoSe 10453 against standards of (6.66%) in BO91, (6.73%) in CoSe 92423 and (9.00%) in CoP9301. Regarding **Root borer** incidence (3.08%) in CoSe 10451, (4.75%) in CoSe 10452, (4.23%) in CoSe 10453 with standard of (3.94%) BO 91, (4.63%) CoSe 92423 and (4.55%) CoP 9301. The **Stalk borer** infestation index was observed (0.15) CoSe 10451, (0.54) CoSe 10452, (0.46) CoSe 10453 with standard (0.59) in BO 91, (0.18) in CoSe 92423 and (0.43) in CoP 9301 respectively.

Under AVT 2nd plant (Mid-late) five genotypes along with three standard varieties BO91, CoSe 92423 and CoP 9301, were evaluated against Shoot, Top, Root and Stalk borer.

AVT (Mid-late) 2nd plant

All the varieties including standards showed less susceptible reaction to Shoot borer. The cumulative incidence of **Shoot borer** were found (13.20%) in BO 154, (13.71%) in CoP 09436 and standard (10.36%) in BO 91, (11.42%) in COSe 92423. Based on cumulative incidence of 3rd and 4th brood of **Top borer** (7.44%) in BO 154, (7.70%) in CoP 09436 standard (6.22%) in BO 91, (4.57%) in CoSe 92423 and (7.65%) in CoP 9301. **Top borer** incidence were found at harvest (5.12%) in BO 154, (5.21%) in CoP 09436 and against standards of (4.77%) in BO 91, (4.27%) in CoSe 92423 and (8.50%) in CoP 9301. Regarding **Root borer** infestation was found (5.45%) in BO 154, (5.98%) in CoP 09436 and standards of (4.21%) in BO 91, (4.95%) in CoSe 92423 and (4.70%) in CoP 9301. The **Stalk borer** infestation index was observed (0.27) in BO 154, (0.20) in CoP 09436 and standards of (0.48) in BO 91, (0.13) in CoSe 92423 and (0.35) in CoP 9301 respectively.

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 eight different sugar factory zones for key insect-pests of sugarcane. Seorahi, Manakapur, Blrampur, Babhanan, Rauzagaon, Dhadha, Ramkola and Akbarpur. The incidence of early Shoot borer was found minimum 3-6% around Ramkola and Akbarpur factory zones, while maximum 3-40% around Dhadha factory zone. Top borer infestation was recorded minimum 3-10% around Ramkola factory zone, and maximum 8-16% around Babhanan factory zone. The infestation of Stalk borer was observed 10-20% around Seorahi and 16-28% in Ramkola factory zone. The incidence of Root borer observed minimum 3-7% in Akbarpur factory zone and maximum 10-22% in Ramkola factory zone. There was no observed other insect-pests incidence in the area.

Project No. E-30

Title:- Monitoring of insect- pests and bio-agents in 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 01434 cultivars at Seorahi for monitoring the key insect-pests and their natural enemies. Cumulative incidence of Shoot, Top and Stalk borer were observed 17.56%, 5.38% and 12.25% respectively. *Isotima javensis*, *Stenobracon sp.*, *Elasmus zehnteri* and *Rhaconotus scirpophagae* were recorded major parasitoid of Top borer and *Cotesia flevipes* for Stalk borer minimum 2.63% parasitisation by *Isotima javensis* was recorded in month of May while it was maximum 16.00% in the month of August. The parasitisation of *Stenobracon sp* was observed with minimum 3.03% in May which increased up to maximum 15.00% in the month of August. The parasitisation of Top borer by *Elasmus zehnteri* and *Rhaconotus scirpophagae* was observed minimum 3.70% and 3.84% in June which increases up to 11.53% and 10.52% in the month of August. *Cotesia flevipes*

parasitizes maximum 18.18% to stalk borer larvae during September and also decreases up to 9.09% 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 01434 cultivar at Seorahi for the study. Three pheromone traps for each pest were installed in 2nd fortnight of February to harvest of the crop. Moth trapped was recorded at monthly intervals and pheromone lure was changed at monthly intervals.

Study reveals that highest (22.99 moths/trap) of **Shoot borer** moths catches in the month of April followed by (14.32 moths /trap) June and (9.33 moths /trap) May.

Top borer moth catches started from March and highest (14.31 moths /trap) catches followed by (12.99 moths /trap) July and (11.66 moths /trap) May. The **Stalk borer** (21.66 moths /trap) was recorded in month of August and June followed by (18.66 moths /trap) in May respectively.

Project No. E-4.1

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

Table: - 1 AVT (Early) 2nd Plant

| Sl. No. | Genotypes | Percent incidence of | | | | Stalk borer infestation index |
|---------|------------|---|---|----------------------|------------|-------------------------------|
| | | Shoot borer Cumulative (30,60,90&120 DAP) | Top borer Cumulative (3 rd +4 th brood) | Top borer at harvest | Root borer | |
| 1 | BO153 | 9.78 | 5.25 | 8.88 | 4.25 | 0.29 |
| 2 | CoP09436 | 8.84 | 4.50 | 9.33 | 3.61 | 0.21 |
| 3 | CoSe 09452 | 7.22 | 6.09 | 9.00 | 3.98 | 0.27 |
| 4 | UP 09453 | 7.73 | 7.92 | 10.00 | 4.11 | 0.44 |
| 5 | BO130 | 8.98 | 7.06 | 10.58 | 5.37 | 0.10 |
| 6 | CoSe 95422 | 12.41 | 6.67 | 11.21 | 4.87 | 0.25 |

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

| Sl. No. | Genotypes | Percent incidence of | | | | Stalk borer infestation index |
|---------|------------|---|---|----------------------|------------|-------------------------------|
| | | Shoot borer Cumulative (30,60,90&120 DAP) | Top borer Cumulative (3 rd +4 th brood) | Top borer at harvest | Root borer | |
| 1 | CoSe 10451 | 9.95 | 7.51 | 6.31 | 3.08 | 0.15 |
| 2 | CoSe 10452 | 8.75 | 6.54 | 7.50 | 4.75 | 0.54 |
| 3 | CoSe 10453 | 10.89 | 6.93 | 5.35 | 4.23 | 0.46 |
| 4 | BO91 | 11.57 | 7.43 | 6.66 | 3.95 | 0.59 |
| 5 | CoSe 92423 | 11.11 | 6.07 | 6.73 | 4.63 | 0.18 |
| 6 | CoP9301 | 9.69 | 8.88 | 9.00 | 4.55 | 0.43 |

Table: - 3 AVT (Mid-late) 2nd Plant

| Sl. No. | Genotypes | Percent incidence of | | | | Stalk borer infestation index |
|---------|------------|---|---|----------------------|------------|-------------------------------|
| | | Shoot borer Cumulative (30,60,90&120 DAP) | Top borer Cumulative (3 rd +4 th brood) | Top borer at harvest | Root borer | |
| 1 | BO 154 | 13.20 | 7.44 | 5.12 | 5.45 | 0.27 |
| 2 | CoP 09437 | 13.71 | 7.70 | 5.21 | 5.98 | 0.20 |
| 3 | BO91 | 10.36 | 6.22 | 4.77 | 4.21 | 0.48 |
| 4 | CoSe 92423 | 11.42 | 4.57 | 4.27 | 4.95 | 0.13 |
| 5 | CoP9301 | 14.66 | 7.65 | 8.50 | 4.70 | 0.35 |

Project No. E-28

Incidence of major insect-pests in different factory zone of UP (2014-15)

| S.N | Factory zone | Percent incidence of | | | |
|-----|--------------|---------------------------|------------|-------------|------------|
| | | Shoot borer (Hot weather) | At harvest | | |
| | | | Top borer | Stalk borer | Root borer |
| 1 | Seorahi | 3-8 | 5-13 | 10-20 | 4-8 |
| 2 | Manakapur | 3-10 | 4-12 | 14-24 | 5-10 |
| 3 | Blrampur | 6-18 | 6-13 | 10-15 | 7-10 |
| 4 | Babhanan | 3-15 | 8-16 | 12-20 | 6-12 |
| 5 | Rauzagaon | 8-12 | 7-15 | 15-23 | 5-15 |
| 6 | Dhadha | 3-40 | 4-12 | 12-22 | 8-20 |
| 7 | Ramkola | 3-6 | 3-10 | 16-28 | 10-22 |
| 8 | Akbarpur | 3-6 | 6-13 | 12-25 | 3-7 |

Project No. E-30

Monitoring of insect-pests and bio-agents in sugarcane ecosystem (2014-15)

| Insect-pests | % incidence | Month | Parasitoids recorded | | | | |
|--------------|-----------------------------|------------|-------------------------|------------------------|-------------------------|-------------------------------|-------------------------|
| | | | <i>Isotima javensis</i> | <i>Stenobracon sp.</i> | <i>Elasmus zehnteri</i> | <i>Rhaconotus scirpophaga</i> | <i>Cotesia flavipes</i> |
| Shoot borer | 17.56 | April-June | - | - | - | - | - |
| Top borer | 3.24(2 nd brood) | May | 2.63 | 3.03 | - | - | - |
| Top borer | | June | 3.70 | 4.76 | 4.34 | 3.00 | - |
| Top borer | 5.38(3 rd brood) | July | 12.00 | 13.63 | 8.00 | 6.66 | - |
| Top borer | | August | 16.00 | 15.00 | 11.53 | 10.52 | - |
| Top borer | | September | 4.54 | 3.57 | 3.70 | 4.00 | - |
| Stalk borer | 12.25 | September | - | - | - | - | 18.18 |
| Stalk borer | | October | - | - | - | - | 12.00 |
| Stalk borer | | November | - | - | - | - | 9.09 |

Project No. E-32

Population dynamics of sugarcane borers through pheromone trap at Seorahi 2014-15

| Month | Av. Maximum temp. O ^c | Av. humidity % | Total Rain fall (mm) | No. of moth trapped | | |
|-----------|----------------------------------|----------------|----------------------|---------------------|-----------|-------------|
| | | | | ESB | Top borer | Stalk borer |
| March | 28.69 | 65.25 | 15.8 | 4.65 | 14.31 | 11.32 |
| April | 33.89 | 57.00 | 0.00 | 22.99 | 5.66 | 1.66 |
| May | 35.50 | 56.99 | 75.0 | 9.33 | 11.66 | 18.66 |
| June | 35.86 | 60.90 | 57.8 | 14.32 | 4.00 | 21.66 |
| July | 31.97 | 73.28 | 138.4 | 5.32 | 12.99 | 3.66 |
| August | 31.50 | 81.48 | 701.4 | 1.99 | 5.65 | 21.66 |
| September | 31.82 | 74.94 | 188.0 | 0.66 | 1.00 | 14.00 |
| October | 31.22 | 72.44 | 176.0 | 0.33 | 0.33 | 9.32 |
| | + 0.4791 | -0.6577 | -0.4456 | r | - | - |
| | -0.1658 | -0.2717 | -0.2410 | - | r | - |
| | +0.2881 | +0.1290 | +0.4570 | - | - | r |

PI report

AVT (Early) 2nd Plant Percent incidence of Early Shoot borer

| Sr. No. | Genotype | % incidence of ESB | | | | | No. of bored plants/ha (on the basis of Cumulative % incidence) |
|---------|------------|--------------------|--------|--------|---------|------------------------|---|
| | | 30 DAP | 60 DAP | 90 DAP | 120 DAP | Cumulative % incidence | |
| 1 | BO153 | 0.00 | 9.58 | 7.53 | 0.00 | 9.78 | 4444.44 |
| 2 | CoP09436 | 0.00 | 6.94 | 7.33 | 0.00 | 8.84 | 3209.87 |
| 3 | CoSe 09452 | 0.00 | 8.33 | 4.54 | 0.00 | 7.22 | 2962.69 |
| 4 | UP 09453 | 0.00 | 7.69 | 6.45 | 0.00 | 7.73 | 3456.79 |
| 5 | BO130 | 0.00 | 9.45 | 6.52 | 0.00 | 8.98 | 3950.61 |
| 6 | CoSe 95422 | 0.00 | 11.59 | 9.25 | 0.00 | 12.41 | 4444.44 |

AVT (Mid-late) 1st Plant Percent incidence of Early Shoot borer

| Sr. No. | Genotype | % incidence of ESB | | | | | No. of bored plants/ha (on the basis of Cumulative % incidence) |
|---------|------------|--------------------|--------|--------|---------|------------------------|---|
| | | 30 DAP | 60 DAP | 90 DAP | 120 DAP | Cumulative % incidence | |
| 1 | CoSe 10451 | 0.00 | 15.25 | 8.27 | 0.00 | 9.95 | 5185.18 |
| 2 | CoSe 10452 | 0.00 | 5.55 | 9.99 | 0.00 | 8.75 | 2962.96 |
| 3 | CoSe 10453 | 0.00 | 8.16 | 10.93 | 0.00 | 10.89 | 2716.05 |
| 4 | BO91 | 0.00 | 7.84 | 10.60 | 0.00 | 11.57 | 2716.05 |
| 5 | CoSe 92423 | 0.00 | 8.92 | 10.66 | 0.00 | 11.11 | 3209.87 |
| 6 | CoP9301 | 0.00 | 7.95 | 7.56 | 0.00 | 9.69 | 3950.61 |

AVT (Mid-late) 2nd Plant Percent incidence of Early Shoot borer

| Sr. No. | Genotype | % incidence of ESB | | | | | No. of bored plants/ha (on the basis of Cumulative % incidence) |
|---------|------------|--------------------|--------|--------|---------|------------------------|---|
| | | 30 DAP | 60 DAP | 90 DAP | 120 DAP | Cumulative % incidence | |
| 1 | BO 154 | 0.00 | 10.84 | 10.43 | 0.00 | 13.20 | 5185.18 |
| 2 | CoP 09437 | 0.00 | 11.45 | 10.07 | 0.00 | 13.71 | 5925.92 |
| 3 | BO91 | 0.00 | 7.95 | 8.77 | 0.00 | 10.36 | 4197.53 |
| 4 | CoSe 92423 | 0.00 | 10.20 | 10.76 | 0.00 | 11.42 | 2962.96 |
| 5 | CoP9301 | 0.00 | 12.00 | 13.00 | 0.00 | 14.66 | 5432.09 |

AVT (Early) 2nd Plant Percent incidence of Top borer

| Sr. No. | Genotype | % incidence of top borer | | |
|---------|------------|---------------------------------|--------------------------------|------------|
| | | III brood/5 th month | IV brood/7 th month | At harvest |
| 1 | BO153 | 2.25 | 3.00 | 8.88 |
| 2 | CoP09436 | 2.05 | 2.45 | 9.33 |
| 3 | CoSe 09452 | 2.68 | 3.41 | 9.00 |
| 4 | UP 09453 | 3.79 | 4.13 | 10.00 |
| 5 | BO130 | 3.33 | 3.73 | 10.58 |
| 6 | CoSe 95422 | 3.17 | 3.50 | 11.21 |

AVT (Mid-late) 1st Plant Percent incidence of Top borer

| Sr. No. | Genotype | % incidence of top borer | | |
|---------|------------|---------------------------------|--------------------------------|------------|
| | | III brood/5 th month | IV brood/7 th month | At harvest |
| 1 | CoSe 10451 | 3.31 | 4.20 | 6.31 |
| 2 | CoSe 10452 | 2.77 | 3.77 | 7.50 |
| 3 | CoSe 10453 | 3.00 | 3.93 | 5.35 |
| 4 | BO91 | 3.12 | 4.31 | 6.66 |
| 5 | CoSe 92423 | 2.50 | 3.57 | 6.73 |
| 6 | CoP9301 | 4.08 | 4.80 | 9.00 |

AVT (Mid-late) 2nd Plant Percent incidence of Top borer

| Sr. No. | Genotype | % incidence of top borer | | |
|---------|------------|---------------------------------|--------------------------------|------------|
| | | III brood/5 th month | IV brood/7 th month | At harvest |
| 1 | BO 154 | 3.00 | 4.44 | 5.12 |
| 2 | CoP 09437 | 3.47 | 4.23 | 5.21 |
| 3 | BO91 | 2.89 | 3.33 | 4.77 |
| 4 | CoSe 92423 | 2.25 | 2.50 | 4.27 |
| 5 | CoP9301 | 3.61 | 4.04 | 8.50 |

AVT (Early) 2nd Plant Percent incidence of Stalk & Root borer

| Sr. No. | Genotype | Stalk borer | | | Root borer |
|---------|------------|-------------|-------------|-------------------|-------------|
| | | % incidence | % intensity | Infestation index | % incidence |
| 1 | BO153 | 16.00 | 1.80 | 0.29 | 4.25 |
| 2 | CoP09436 | 14.66 | 1.45 | 0.21 | 3.61 |
| 3 | CoSe 09452 | 17.33 | 1.60 | 0.27 | 3.98 |
| 4 | UP 09453 | 20.00 | 2.18 | 0.44 | 4.11 |
| 5 | BO130 | 10.66 | 0.98 | 0.10 | 5.37 |
| 6 | CoSe 95422 | 16.00 | 1.55 | 0.25 | 4.87 |

AVT (Mid-late) 1st Plant Percent incidence of Stalk & Root borer

| Sr. No. | Genotype | Stalk borer | | | Root borer |
|---------|------------|-------------|-------------|-------------------|-------------|
| | | % incidence | % intensity | Infestation index | % incidence |
| 1 | CoSe 10451 | 13.33 | 1.39 | 0.15 | 3.08 |
| 2 | CoSe 10452 | 24.00 | 2.25 | 0.54 | 4.75 |
| 3 | CoSe 10453 | 20.00 | 2.30 | 0.46 | 4.23 |
| 4 | BO91 | 24.00 | 2.48 | 0.59 | 3.95 |
| 5 | CoSe 92423 | 13.33 | 1.36 | 0.18 | 4.63 |
| 6 | CoP9301 | 21.33 | 2.00 | 0.43 | 4.55 |

AVT (Mid-late) 2nd Plant Percent incidence of Stalk & Root borer

| Sr. No. | Genotype | Stalk borer | | | Root borer |
|---------|------------|-------------|-------------|-------------------|-------------|
| | | % incidence | % intensity | Infestation index | % incidence |
| 1 | BO 154 | 16.00 | 1.70 | 0.27 | 5.45 |
| 2 | CoP 09437 | 13.33 | 1.51 | 0.20 | 5.98 |
| 3 | BO91 | 20.00 | 2.42 | 0.48 | 4.21 |
| 4 | CoSe 92423 | 12.00 | 1.47 | 0.13 | 4.95 |
| 5 | CoP9301 | 18.66 | 1.86 | 0.35 | 4.70 |

E-4.1: Evaluation of zonal varieties /genotypes for their reaction against major insect-pests

AVT (Early) 2nd plant

| S l . N . | Varieties /Genoty. | Early shoot borer (% incidence) | | | | | | Top borer (% Incidence) | | | Stalk borer | | | Root borer |
|-----------------------|-----------------------|------------------------------------|-----------|-----------|------------|-----------------------------------|------------------------------|----------------------------|-----------------------|---------------|----------------|----------------|--------------------------|----------------|
| | | 30 DAP | 60 DAP | 90 DAP | 120 DAP | Cumulat ive % incidenc e | No. of bored plants/ha | III brood | IV brood | At harvest | % incidence | % intensity | Infesta tion index | %Incid ence |
| | | | | | | | | 5 th month | 7 th month | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1 | BO153 | 0.00 | 9.58 | 7.53 | 0.00 | 9.78 | 4444.44 | 2.25 | 3.00 | 8.88 | 16.00 | 1.80 | 0.29 | 4.25 |
| 2 | CoP09436 | 0.00 | 6.94 | 7.33 | 0.00 | 8.84 | 3209.87 | 2.05 | 2.45 | 9.33 | 14.66 | 1.45 | 0.21 | 3.61 |
| 3 | CoSe 09452 | 0.00 | 8.33 | 4.54 | 0.00 | 7.22 | 2962.69 | 2.68 | 3.41 | 9.00 | 17.33 | 1.60 | 0.27 | 3.98 |
| 4 | UP 09453 | 0.00 | 7.69 | 6.45 | 0.00 | 7.73 | 3456.79 | 3.79 | 4.13 | 10.00 | 20.00 | 2.18 | 0.44 | 4.11 |
| 5 | BO130 | 0.00 | 9.45 | 6.52 | 0.00 | 8.98 | 3950.61 | 3.33 | 3.73 | 10.58 | 10.66 | 0.98 | 0.10 | 5.37 |
| 6 | CoSe 95422 | 0.00 | 11.59 | 9.25 | 0.00 | 12.41 | 4444.44 | 3.17 | 3.50 | 11.21 | 16.00 | 1.55 | 0.25 | 4.87 |

AVT (Mid-late) 1st Plant

| S l . N . | Varieties /Genoty. | Early shoot borer (% incidence) | | | | | | Top borer (% Incidence) | | | Stalk borer | | | Root borer |
|-----------------------|-----------------------|------------------------------------|-----------|-----------|------------|-----------------------------------|------------------------------|----------------------------|--------------------------|---------------|--------------------|--------------------|--------------------------|----------------|
| | | 30 DAP | 60 DAP | 90 DAP | 120 DAP | Cumulat ive % incidenc e | No. of bored plants/ha | III brood | IV brood | At harvest | % inciden ce | % inte nsity | Infest ation index | %Incid ence |
| | | | | | | | | 5 th month | 7 th month | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1 | CoSe 10451 | 0.00 | 15.25 | 8.27 | 0.00 | 9.95 | 5185.18 | 3.31 | 4.20 | 6.31 | 13.33 | 1.39 | 0.15 | 3.08 |
| 2 | CoSe 10452 | 0.00 | 5.55 | 9.99 | 0.00 | 8.75 | 2962.96 | 2.77 | 3.77 | 7.50 | 24.00 | 2.25 | 0.54 | 4.75 |
| 3 | CoSe 10453 | 0.00 | 8.16 | 10.93 | 0.00 | 10.89 | 2716.05 | 3.00 | 3.93 | 5.35 | 20.00 | 2.30 | 0.46 | 4.23 |
| 4 | BO91 | 0.00 | 7.84 | 10.60 | 0.00 | 11.57 | 2716.05 | 3.12 | 4.31 | 6.66 | 24.00 | 2.48 | 0.59 | 3.95 |
| 5 | CoSe 92423 | 0.00 | 8.92 | 10.66 | 0.00 | 11.11 | 3209.87 | 2.50 | 3.57 | 6.73 | 13.33 | 1.36 | 0.18 | 4.63 |
| 6 | CoP9301 | 0.00 | 7.95 | 7.56 | 0.00 | 9.69 | 3950.61 | 4.08 | 4.80 | 9.00 | 21.33 | 2.00 | 0.43 | 4.55 |

AVT (mid-late) 2nd plant

| Sl. N. | Varieties /Genoty. | Early shoot borer (% incidence) | | | | | | Top borer (% Incidence) | | | Stalk borer | | | Root borer |
|--------|--------------------|---------------------------------|--------|--------|---------|------------------------|------------------------|-------------------------|-----------------------|------------|-------------|-------------|-------------------|------------|
| | | 30 DAP | 60 DAP | 90 DAP | 120 DAP | Cumulative % incidence | No. of bored plants/ha | III brood | IV brood | At harvest | % incidence | % intensity | Infestation index | %Incidence |
| | | | | | | | | 5 th month | 7 th month | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1 | BO 154 | 0.00 | 10.84 | 10.43 | 0.00 | 13.20 | 5185.18 | 3.00 | 4.44 | 5.12 | 16.00 | 1.70 | 0.27 | 5.45 |
| 2 | CoP 09437 | 0.00 | 11.45 | 10.07 | 0.00 | 13.71 | 5925.92 | 3.47 | 4.23 | 5.21 | 13.33 | 1.51 | 0.20 | 5.98 |
| 3 | BO91 | 0.00 | 7.95 | 8.77 | 0.00 | 10.36 | 4197.53 | 2.89 | 3.33 | 4.77 | 20.00 | 2.42 | 0.48 | 4.21 |
| 4 | CoSe 92423 | 0.00 | 10.20 | 10.76 | 0.00 | 11.42 | 2962.96 | 2.25 | 2.50 | 4.27 | 12.00 | 1.47 | 0.13 | 4.95 |
| 5 | CoP9301 | 0.00 | 12.00 | 13.00 | 0.00 | 14.66 | 5432.09 | 3.61 | 4.04 | 8.50 | 18.66 | 1.86 | 0.35 | 4.70 |