

Prevalence of Some Major Insect Pests in Sugarcane Clones

M. Begum, M. Abdullah, M.N.A. Siddiquee, M.S. Islam, M.N. Alam, K.S. Alam and M.H. Rahman

Bangladesh Sugarcane Research Institute
Ishurdi, Pabna, Bangladesh

ABSTRACT

An experiment was conducted to observe the incidence of five promising sugarcane clones viz., I 7-03, I 78-03, I 111-03, I 137-03, I 231-03 and two standard varieties I 36 and I 37 against some major insect pests of sugarcane at BSRI farm, Ishurdi and RSRS, Thakurgaon during the cropping season 2007-2008, 2008-2009 and 2009-2010. Results (pooled data) revealed that (pooled data) the clone I 137-03 showed the lowest infestation of 1.42 and 0.65 percent and 1.23 and 0.99 percent against early shoot borer and black beetle respectively with the highest of 4.58 and 1.67 and 4.89 and 2.65 percent at both locations. The lowest top shoot borer infestation 10.40 and 7.95 percent and stem borer infestation 23.63 and 15.34 percent was observed in the clone I 231-03. The highest (20.72 and 21.88 percent and 34.95 and 37.10 percent) infestation in I 78-03 at both locations. Rootstock borer infestation ranged from 40.94 to 56.75 percent at Ishurdi whereas higher infestation was observed at Thakurgaon which ranged from 62.90 to 83.20 percent with the lowest (40.90 and 62.90 percent) infestation in the clone I 231-03. Infestation due to scale insect ranged from 2.59 to 14.63 and 9.76 to 53.20 percent at Ishurdi and Thakurgaon respectively with the highest of 14.63 and 53.20 percent infestation in standard I 37. Mealy bug infestation was observed which ranged from 8.00 to 15.22 percent at Ishurdi and 13.88 to 39.89 percent at Thakurgaon with the highest in standard I 37 of 15.22 and 39.69 percent at Ishurdi and Thakurgaon respectively.

Key words: Prevalence, insect pests, sugarcane clones

INTRODUCTION

Sugarcane (*Saccharum officinarum* L.) is one of the most important cash-cum industrial crop in Bangladesh. It is a long durable crop which requires 12-16 months from planting to harvesting. Various factors are responsible for low yield of cane in Bangladesh compared to other sugarcane growing countries of the world. So far, about 70 species of insect pests have been identified and reported to feed on sugarcane in Bangladesh, (Anon., 1973-78; 1992). Among various factors, insect pests inflict considerable losses which are estimated to be around 20% in cane yield and 15% in sugar recovery (Avasthy, 1983). It is reported that the most damaging insect pests are early shoot borer (*Chilo infuscatellus* Snellen), top shoot borer (*Scirpophaga excerptalis* Walker), stem borer (*Chilo tumidicostalis* Hampson), rootstock borer (*Emmalocera depressella* Swinhoe.), scale insect (*Melanaspis glomerata* Green) and mealy bug (*Saccharicoccus sacchari* Cockerell). Losses in yield incurred due to borer attack was estimated to be 12.29-43.67% by top shoot borer (Alam, et al. 2006), 18.01-28.73 percent (Abdullah et al., 2006) and 12.01-34.51% (Alam et al., 2006) by stem borer, 10.07-55.28% (Alam et al., 2006) by rootstock borer 22-33% by early shoot borer (Patil and Hapase, 1981). The

loss in yield due to scale insect was estimated as 43% (Khanna, 1957) and 24.1% by mealy bug (Kalra and Sidhu, 1964). Different pest management practices namely cultural, mechanical, biological and chemical methods have been recommended to control these pests. Among these, farmers of Bangladesh are mostly oriented with chemical control operation as it gives immediate and effective control of a pest. Chemical pesticides are expensive. Moreover, it creates environmental hazards. Continuous use of pesticides (sub lethal dose) causes development of resistance to the target pest. On the other hand, use of resistant varieties seems to be the most important method of pest management. As most of the major sugarcane pests are monophagous, there is a good scope to develop resistant sugarcane varieties for their management. Selection of insect resistant clones is the first step towards developing management approach. Clones having high sugar yield potential with considerable tolerance to major insect pests' attacks would be more economic to cultivate by the sugarcane growers in Bangladesh. Therefore, efforts need to develop clones tolerant to major insect pests.

MATERIALS AND METHODS

The field experiment was conducted at the experimental farm of Bangladesh Sugarcane Research Institute (BSRI), Ishurdi, Pabna and RSRS, Thakurgaon during the cropping season of 2007-2008, 2008-2009 and 2009-2010. The experiment was laid out in randomized complete block (RCB) design with three replications. The unit plot size was 6m × 5m. Blocks were set 2m apart with a border of 1m. The BSRI bred sugarcane clones viz I 7-03, I 78-03, I 111-03, I 137-03, I 231-03 and two standard varieties Isd 36 and Isd 37 were included to compare their infestation level. Planting was done through conventional sett placement in the trenches. Fertilizer application, irrigation, weeding, mulching and earthing-up were done as per normal cultural practices (Anon., 1998). All the clones and varieties were subjected to natural incidence by pests. No pest control measure was applied.

Data on the infestation of early shoot borer (ESB) and black beetle (BB) were recorded in the month of March of each season. Data on the incidence of top shoot borer (TSB), stem borer (SB), rootstock borer (RSB), scale insect (SI) and mealy bug (MB) were recorded at harvest by counting the total and infested canes from each plot. In case of SB infestation 10 SB infested plants were randomly split to count infested internodes. For RSB, data were taken from 5 randomly selected clumps per plot. Infested RSB borer up-rooted stocks were dissected to observe their infestation. The collected data were converted to percent infestation to measure the level of incidence and analysed for comparison by using LSD at 0.05 levels for interpretation.

RESULTS AND DISCUSSION

During the cropping season 2007-2008 no significant difference were observed among the test clones and standard variety for early shoot borer, black beetle, stem borer (internode basis), scale insect and mealy bug infestation whereas significant difference were obtained for top shoot borer, stem borer (stalk basis) and rootstock borer

infestation at Ishurdi (Table 1). At RSRS, Thakurgaon, all the tested clones showed no statistically significant differences in pest infestation except top shoot borer and stem borer (stalk basis) (Table 2). The infestation of early shoot borer was low at both locations. The clone I 137-03 had the lowest of 0.12 & 1.01 percent early shoot borer infestation with the highest of 0.64 & 2.07 percent in I 78-03 at both locations (Table 1 & 2). In case of black beetle, the lowest of 1.69 & 0.38 percent infestation was found in the clone I 137-03 with the highest of 5.73 & 1.14 percent in I 78-03 at both locations. Clone I 231-03 showed the lowest top shoot borer infestation (8.69% & 10.24%) with the highest of 25.84 & 27.15 percent in I 78-03 respectively at both locations compared to standard varieties. Abdullah *et al.* (2007) reported 8.18 to 26.31 percent infestation by top shoot borer at Ishurdi and 31.29 to 38.68 percent infestation at Thakurgaon. The test clones and standard varieties in the study showed similar range (Table 1 & 2).

Table 1. Infestation levels of some major insect pests in promising BSRI clones (BSRI, Ishurdi, Pabna, 2007-2008).

Clones/ Variety	Percent pest infestation (Mean of three replications)							
	ESB	BB	TSB	SB (stalk)	SB (internode)	RSB	SI	MB
I 7-03	0.24	2.13	10.64de	18.78a	20.32	30.46bc	2.02	5.99
I 78-03	0.64	5.73	25.84a	20.78ab	25.62	40.18ab	1.56	6.52
I 111-03	0.13	3.19	17.84bc	15.39ab	32.78	41.84ab	3.22	5.49
I 137-03	0.12	1.69	10.14de	9.43bc	20.44	40.27ab	1.65	5.69
I 231-03	0.33	2.50	8.69e	4.98c	20.99	27.07c	1.35	6.55
Isd 36	0.50	3.15	18.25bc	16.31ab	24.83	40.80ab	2.50	6.54
Isd 37	0.64	3.51	16.49cd	10.44bc	22.42	39.58ab	2.91	6.96
LSD (5%)	NS	NS	6.86	7.62	NS	10.46	NS	NS

ESB = Early shoot borer, BB = Black beetle, TSB = Top shoot borer, SB = Stem borer, RSB = Rootstock borer, SI = Scale insect, MB = Mealy bug, NS = Non significant

* Figures followed by the same letter (s) are not significantly different at 5% level as per LSD test

The lowest stem borer infestation (stalk basis) at both locations was found 4.98 & 17.09 percent in the clone I 231-03 with the highest of 20.78 & 42.95 percent in I 78-03 (Table 1 & 2). The stalk basis stem borer infestation to other clones of sugarcane was reported to vary from 13.99 to 44.81% (BSRI, 2000) which support the results found in this study. On the basis of internode the lowest (20.32% & 16.21%) stem borer infestation was observed in I 7-03 at both locations.

Table 2. Infestation levels of some major insect pests in promising BSRI clones (RSRS, Thakurgaon, 2007-2008).

Clones/ Variety	Percent pest infestation (Mean of three replications)							
	ESB	BB	TSB	SB (stalk)	SB (internode)	RSB	SI	MB
I 7-03	1.11	1.19	13.89bc	22.38b	16.21	66.01	3.68	17.46
I 78-03	2.07	1.14	27.15a	42.95a	20.45	77.22	31.23	14.58
I 111-03	1.84	1.04	20.16abc	31.42ab	21.97	71.32	28.01	30.65
I 137-03	1.01	0.38	22.06abc	26.83ab	26.59	78.89	3.45	22.67
I 231-03	1.13	0.58	10.24c	17.09b	19.55	62.17	8.31	15.46
Isd 36	1.04	0.57	21.88abc	23.15b	24.42	85.45	18.39	16.51
Isd 37	1.42	1.04	14.72abc	17.50b	24.29	67.85	38.27	36.36
LSD (5%)	NS	NS	11.03	15.07	NS	NS	NS	NS

ESB = Early shoot borer, BB = Black beetle, TSB = Top shoot borer, SB = Stem borer, RSB = Rootstock borer, SI = Scale insect, MB = Mealy bug, NS = Non significant

* Figures followed by the same letter (s) are not significantly different at 5% level as per LSD test

Heavy rootstock borer infestation was observed at both locations. Rootstock borer infestation ranged from 27.07 to 41.84 percent at Ishurdi whereas at Thakurgaon infestation ranged from 62.17 to 85.45 percent. Scale insect infestation was low at Ishurdi which ranged from 1.35 to 2.91 percent with the highest (38.27%) in standard Isd 37 at Thakurgaon. Mealy bug infestation was low at Ishurdi than Thakurgaon that ranged from 5.49 to 6.96 percent. The standard Isd 37 showed the highest of 6.96 and 36.36 percent mealy bug infestation at Ishurdi and Thakurgaon respectively. Abdullah *et al.* (2004) reported that clones viz., I 82-98, I 98-98, I 110-98 and standard variety Isd 29 showed 0.02 to 0.41 infestation by early shoot borer. They also reported 5.81 to 12.75 percent infestation by top shoot borer 4.54 to 33.74% (stalk) basis infestation by stem borer at Ishurdi. The test clones and standard varieties in the present study exhibit more or less similar results.

Table 3. Infestation levels of some major insect pests in promising BSRI clones (BSRI, Ishurdi, Pabna, 2008-2009).

Clones/ Variety	Percent pest infestation (Mean of three replications)							
	ESB	BB	TSB	SB (stalk)	SB (internode)	RSB	SI	MB
I 7-03	7.25b	2.59b	8.17	9.99ab	11.23	54.94	4.01b	7.57b
I 78-03	11.78a	4.29a	13.81	10.11ab	16.02	63.83	9.53b	8.37b
I 111-03	7.65b	1.98b	9.09	7.56b	19.24	65.65	9.44b	5.05b
I 137-03	4.13b	1.31b	9.82	5.61b	14.63	56.76	3.99b	8.58b
I 231-03	6.95b	1.37b	7.60	5.30b	15.04	54.20	1.82b	5.54b
Isd 36	6.93b	1.90b	12.16	5.45b	12.50	62.20	4.71b	9.14b
Isd 37	7.36b	1.98b	13.80	16.31a	18.55	57.07	26.26a	20.18a
LSD (5%)	4.054	1.675	NS	6.509	NS	NS	15.86	8.315

ESB = Early shoot borer, BB = Black beetle, TSB = Top shoot borer, SB = Stem borer, RSB = Rootstock borer, SI = Scale insect, MB = Mealy bug, NS = Non significant

* Figures followed by the same letter (s) are not significantly different at 5% level as per LSD test

In cropping season 2008-2009 test clones showed (Table 3 & 4) no statistically significant difference in infestation by top shoot borer, stem borer (internode basis) and root stock borer at Ishurdi and stem borer (internode basis), rootstock borer and mealy bug at RSRS, Thakurgaon. The clone I 137-03 showed the lowest of 4.13 and 0.20 percent early shoot borer infestation at Ishurdi and Thakurgaon respectively. In case of black beetle the lowest (1.31% & 1.06%) infestation was also observed in I 137-03. The lowest top shoot borer infestation (7.60% & 1.48%) was observed in I 231-03 and the clone I 78-03 had the highest (13.81% & 17.82%) top shoot borer infestation at both locations compared to standard varieties. The lowest stem borer (stalk basis) infestation (5.30% & 9.41%) was observed in I 231-03. At Thakurgaon, the highest stem borer infestation (35.36%) was found in I 78-03. Stem borer infestation on internode basis varied from 11.23 to 19.24 percent at Ishurdi and 9.87 to 17.85 percent at Thakurgaon. Heavy rootstock borer infestation was observed at both locations. Rootstock borer infestation ranged from 54.20 to 65.65 percent at Ishurdi and at Thakurgaon infestation ranged from 54.60 to 73.65 percent. The lowest rootstock borer infestation (54.20% & 54.60%) was obtained in I 231-03 at both locations. Scale insect infestation ranged from 1.82 to 26.26 percent at Ishurdi with the highest of 26.26 percent in standard Isd 37. Higher Scale insect infestation was observed at Thakurgaon. The highest of 26.26 and 77.50 percent scale insect infestation was found in standard Isd 37. Mealy bug infestation ranged from 5.05 to 20.18 percent and 8.13 to 11.45 percent at Ishurdi and Thakurgaon respectively. The highest mealy bug (20.18% & 11.45%) infestation in standard Isd 37 with the lowest (5.05%) in I 111-03 at Ishurdi. Biswas *et al.* (2004) reported that clones I 5-92, I 41-92, I 119-92, I 153-92 and Bo 92 had very low (0.82 - 1.38%) infestation by early shoot borer. They reported that top shoot borer infestation ranged from 1.14-18.16%, mealy bug from 5.01- 20.81% and scale insect from 12.97- 22.95% at Thakurgaon. These results have similarities with findings of the present study. Abdullah *et al.* (2006) reported that clones viz., I 245-99, I 262-99, I 429-99, I 433-99, I 446-99 and I 486-99 and varieties Isd 20 and Isd 32 showed 0.51 to 3.32% infestation by early shoot borer, 0.22 to 15.48% infestation by black beetle, 5.25 to 55.21% (stalk basis) infestation by stem borer. The test clones and standard varieties in the present study exhibit within the range.

Table 4. Infestation levels of some major insect pests in promising BSRI clones (RSRS, Thakurgaon, 2008-2009).

Clones/ Variety	Percent pest infestation (Mean of three replications)							
	ESB	BB	TSB	SB (stalk)	SB (internode)	RSB	SI	MB
I 7-03	0.45	1.48ab	3.04b	21.71b	9.87	71.78	12.01cd	8.33
I 78-03	0.89	3.65b	17.82a	35.36a	12.64	63.95	47.49b	5.65
I 111-03	0.55	2.83ab	2.36b	15.73b	14.41	63.55	33.73bc	8.13
I 137-03	0.20	1.06a	3.58b	17.55b	17.85	60.34	74.97a	7.62
I 231-03	0.87	2.07ab	1.48b	9.41b	16.75	54.60	23.37cd	6.37
Isd 36	0.52	1.55ab	4.56b	10.71b	10.82	73.65	27.68bcd	7.57
Isd 37	0.57	2.11ab	3.30b	10.47b	14.23	62.04	77.50d	11.45
LSD (5%)	1.146	2.307	3.635	12.34	NS	NS	21.87	NS

ESB = Early shoot borer, BB = Black beetle, TSB = Top shoot borer, SB = Stem borer, RSB = Rootstock borer, SI = Scale insect, MB = Mealy bug, NS = Non significant

* Figures followed by the same letter (s) are not significantly different at 5% level as per LSD test

In the cropping season 2009-2010 no statistically significant difference in infestation by top shoot borer, stem borer (stalk basis), stem borer (internode basis), scale insect and mealy bug at Ishurdi and black beetle and top shoot borer at RSRS Thakurgaon (Table 5 & 6). At both locations early shoot borer infestation was low. Due to infestation black beetle the lowest infestation (0.70% & 1.52%) was observed in the clone I 137-03 with the highest of 4.64 and 3.15 percent in I 78-03 at Ishurdi and Thakurgaon respectively. The clone I 231-03 had the lowest (14.93% & 12.14%) top shoot borer infestation with the highest (22.05% & 20.67%) in I 78-03. Heavy stem borer infestation was observed at Ishurdi. The lowest stem borer (stalk basis) infestation was 60.55 percent in I 231-03 at Ishurdi and 19.51 percent in I 231-03 at Thakurgaon. Stem borer infestation on internode basis showed the lowest (24.29% & 10.18%) in the clone I 7-03. Heavy rootstock borer infestation was found at both locations. At Ishurdi, infestation ranged from 41.54 to 62.75 percent and 71.94 to 90.49 percent at Thakurgaon. Scale insect infestation varied from 4.60 to 14.74 and 13.59 to 54.94 at Ishurdi and Thakurgaon respectively. Mealy bug infestation varied from 13.46 to 18.81 at Ishurdi with the highest (18.81% & 71.85%) in standard in Isd 37. Monowara *et al.* (2011) reported that clones viz., I 111-03, I 145-02, I 191-02 and standard variety Isd 16 and Isd Isd 36 showed 0.67 to 2.22 % infestation by early shoot borer, 0.70- 3.33% by black beetle. They also reported 21.05 to 29.77% percent infestation by top shoot borer, 19.35 to 35.89% (stalk basis) infestation by stem borer, 18.40 to 56.43% infestation scale insect. The test clones and standard varieties in the present study exhibit more or less similar results as was reported.

Table 5. Infestation levels of some major insect pests in promising BSRI clones (BSRI, Ishurdi, Pabna, 2009-2010).

Clones/ Variety	Percent pest infestation (Mean of three replications)							
	ESB	BB	TSB	SB (stalk)	SB (internode)	RSB	SI	MB
I 7-03	0.23b	2.02b	17.29	71.10	24.29	49.11ab	10.17	15.52
I 78-03	1.33a	4.64a	22.05	73.98	26.26	51.59ab	9.69	15.11
I 111-03	0.33b	2.05b	18.41	66.29	39.37	62.75a	8.43	13.46
I 137-03	0.00b	0.70b	16.30	60.89	35.49	47.63ab	9.13	16.46
I 231-03	0.71ab	2.17b	14.93	60.55	27.43	41.54b	4.60	16.74
Isd 36	0.53a	3.56a	15.09	68.46	30.49	50.51ab	10.05	14.82
Isd 37	0.73ab	4.10a	15.59	65.79	26.48	51.36ab	14.74	18.81
LSD (5%)	0.6359	1.372	NS	NS	NS	14.09	NS	NS

ESB = Early shoot borer, BB = Black beetle, TSB = Top shoot borer, SB = Stem borer, RSB = Rootstock borer, SI = Scale insect, MB = Mealy bug, NS = Non significant

* Figures followed by the same letter (s) are not significantly different at 5% level as per LSD test

Table 6. Infestation levels of some major insect pests in promising BSRI clones (RSRS, Thakurgaon, 2009-2010).

Clones/ Variety	Percent pest infestation (Mean of three replications)							
	ESB	BB	TSB	SB (stalk)	SB (internode)	RSB	SI	MB
I 7-03	1.32	1.70b	16.76	29.87ab	10.18b	79.23	13.59b	26.51b
I 78-03	2.05	3.15ab	20.67	32.98a	18.11a	87.52	51.31a	21.42b
I 111-03	1.90	2.27ab	13.10	31.94ab	14.25ab	85.74	54.94a	37.43b
I 137-03	0.74	1.52b	18.72	26.08ab	21.42a	88.55	15.53b	66.44a
I 231-03	0.88	2.02ab	12.14	19.51b	18.88a	71.94	47.77a	38.32b
Isd 36	1.35	1.98ab	12.16	21.15ab	18.83a	90.49	16.12b	74.34a
Isd 37	1.59	3.49a	18.48	22.71ab	14.24ab	88.78	43.84a	71.85a
LSD (5%)	1.375	NS	NS	11.69	6.695	18.72	19.10	20.44

ESB = Early shoot borer, BB = Black beetle, TSB = Top shoot borer, SB = Stem borer, RSB = Rootstock borer, SI = Scale insect, MB = Mealy bug, NS = Non significant

* Figures followed by the same letter (s) are not significantly different at 5% level as per LSD test

The clones/varieties tested were exposed to the natural incidence in both locations for consecutive three years at both locations. From the pooled data (Table 7 & 8) it is revealed from the pooled data that the clone I 137-03 showed the lowest (1.42% & 0.65%) early shoot borer infestation at Ishurdi. Due to infestation of black beetle the lowest infestation (1.23% & 0.99%) was also observed in I 137-03. Top shoot borer infestation ranged from 10.40 to 20.72 percent and 7.95 to 21.88 percent at Ishurdi and Thakurgaon respectively whereas the lowest infestation (10.40% & 7.95%) was observed in the clone I 231-03 at both locations.

Table 7. Pooled data on percent infestation of some major insect pests in promising BSRI clones (BSRI, Ishurdi, 2007-2010).

Clones/ Variety	Percent pest infestation (Mean of three replications)							
	ESB	BB	TSB	SB (stalk)	SB (internode)	RSB	SI	MB
I 7-03	2.57	2.24	12.03	33.29	18.61	44.83	5.40	9.69
I 78-03	4.58	4.89	20.72	34.95	22.63	51.87	6.93	10.00
I 111-03	2.70	2.64	15.11	29.75	30.46	56.75	7.03	8.00
I 137-03	1.42	1.23	12.08	25.31	25.32	48.22	4.92	10.24
I 231-03	2.66	2.01	10.40	23.63	21.15	40.94	2.59	9.61
Isd 36	2.65	2.98	15.17	30.07	22.61	51.17	5.75	10.17
Isd 37	2.91	3.20	15.29	30.85	22.48	49.34	14.63	15.22

ESB = Early shoot borer, BB = Black beetle, TSB = Top shoot borer, SB = Stem borer, RSB = Rootstock borer, SI = Scale insect, MB = Mealy bug

Table 8. Pooled data on percent infestation of some major insect pests in promising BSRI clones (RSRS, Thakurgaon, 2007-2010).

Clones/ Variety	Percent pest infestation (Mean of three replications)							
	ESB	BB	TSB	SB (stalk)	SB (internode)	RSB	SI	MB
I 7-03	0.96	1.46	11.23	24.65	12.08	72.34	9.76	17.43
I 78-03	1.67	2.65	21.88	37.10	17.07	76.23	43.34	13.88
I 111-03	1.43	2.05	11.87	26.36	16.88	73.47	38.89	25.40
I 137-03	0.65	0.99	14.79	23.49	21.95	75.93	31.32	32.24
I 231-03	0.96	1.56	7.95	15.34	18.39	62.90	26.48	20.05
Isd 36	0.97	1.37	12.87	18.34	18.02	83.20	20.73	32.81
Isd 37	1.19	2.21	12.17	16.89	17.59	72.89	53.20	39.89

ESB= Early shoot borer, BB= Black beetle, TSB= Top shoot borer, SB= Stem borer, RSB= Rootstock borer, SI= Scale insect, MB = Mealy bug

Stem borer infestation ranged from 23.63 to 34.95 percent and 15.34 to 37.10 percent at Ishurdi and Thakurgaon respectively. The clone I 231-03 had the lowest of 23.63 and 15.34 percent stem borer (stalk basis) infestation with the highest (34.95% & 37.10%) in I 78-03 at both locations. Stem borer intensity ranged from 18.61 to 30.46 and 12.08 to 21.95 percent at Ishurdi and Thakurgaon respectively. Higher rootstock borer infestation was noticed at Thakurgaon which ranged from 62.90 to 83.20 percent whereas at Ishurdi it ranged from 40.94 to 56.75 percent among the test clones/varieties showing the lowest (40.94% & 62.90%) in the clone I 231-03 at both locations (Table 7 & 8). Scale insect infestation ranged from 2.59 to 14.63 percent and 9.76 to 53.20 percent at Ishurdi and Thakurgaon respectively with the highest (14.63% & 53.20%) in standard Isd 37 at both locations. Mealy bug infestation ranged from 8.00 to 15.22 and 13.88 to 39.89 percent at Ishurdi and Thakurgaon respectively with the highest (15.22% & 39.89%) in standard Isd 37 at both locations. Anon. (2000), Abdullah *et al.* (2004, 2006, 2007), Biswas *et al.* (2004) and Monowara *et al.* (2011) reported about infestation of these major pests in sugarcane which supports the present study. Pest reaction to genotypes is a comparative study; it may vary with the change in weather and other biotic and abiotic factors which influence pest development.

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