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Field Evaluation of Some Insecticides Against Wheat Stem Borer, *Sesamia, inferens* Walker (Lepidoptera : Noctuidae)*

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Wheat, *Triticum aestivum* L. is one of the most important food crops and cultivated extensively in almost all the countries. In Gujarat State, it is grown in about 4.31 lahk hectares producing 7.83 lakh tonnes of grains(Anonymous, 1986).

The crop is attacked by several insect pests causing appreciable damage which ultimately affect the yield. Of these, the stem borer, *Sesamia inferens* Walker is considered to be the most damaging pest of wheat by causing 5.74 to 11.01 per cent loss to the crop (Saxena *et al.*, 1972).

The information regarding the control of this pest is very scanty. An experiment was, therefore, conducted at the College Farm, Gujarat Agricultural University, Junagadh Campus, Junagadh during the year 1985-86 on wheat variety Kalyan Sona. The experiment was laid out in a randomized block design with four replications. The plot size was 3.5 x 3.0 metres. There were nine treatments (Table 1) besides the control and spraying was carried out @ 500 litres/ha with knapsak sprayer. Two sprays, first at 50 per cent flowering and second after 20 days of firt spray were carried out for studying the effectiveness of various insecticides under test. The observations on total number of tillers and damaged tilers were recorded from one metre row length of each net plot 7 days after each spraying. The data were converted to percentage damaged tillers and subjected to statistical analysis. The results thus obtained are presented in Table 1.

The results (Table 1) revealed that after first spraying, the lowest borer infestation (0.27%) was recorded in the treatment of fenvalerate 0.0125 per cent. However, it was at par with monocrotophos 0.04 and fenvalerate 0.01 per cent followed by endosulfan 0.07 per cent which showed 0.48, 0.50 and 0.74 per cent damage, respectively. Thus, among all the insecticides, fenvalerate 0.0125, monocrotophos 0.04 and fenvalerate 0.01 per cent were found to be the most effective insecticides by registering 93.32, 88.12 and 87.62 per cent reduction in damage, respectively over control.

In case of second spray, the lowest (0.50%) infestation was recorded in the treatment of fenvalerate 0.0125 per cent (Table 1). However, it did not differ significantly from the effect of monocrotophos 0.04, fenvalerate 0.01 and endosulfan 0.07 per cent as the insecticides exhibited 0.77, 1.00 and 1.02 per cent infestation, respectively. Thus, among all the insecticides, fenvalerate 0.0125, monocrotophos 0.04, fenvalerate 0.01 and endosulfan 0.07 per cent showed 93.91, 90.62, 87.82 and 87.58 per cent reduction in the infestation of this borer respectively over control. The data also revealed that the fenvalerate, when applied at lower concentration (0.0075%) was moderately effective and at par with DDVP 0.05 per cent.

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TABLE 1

Efficacy of different insecticide for the control of wheat stem borer, *S. inferens*.

Sr. No.	Treatment	First spray		Second spray	
		Per cent infestation	Per cent reduction in infestation over control	Per cent infestation	Per cent reduction in infestation over control
1.	Fenvalerate 0.012%	0.27	93.32	0.50	93.91
2.	Fenvalerate 0.01%	0.50	87.62	1.00	87.82
3.	Fenvalerate	1.06	73.76	2.03	75.27
4.	Endosulfan 0.07%	0.74	81.68	1.02	87.58
5.	Monocrotophos 0.04%	0.48	88.12	0.77	90.62
6.	Carbaryl 0.2%	2.44	39.60	4.77	41.90
7.	Quinalphos 0.05%	1.99	50.74	4.63	43.61
8.	Chlorpyriphos 0.05%	1.57	61.14	3.38	58.83
9.	Dichlorvos 0.05%	1.31	67.57	2.06	74.91
10.	Control	4.04	--	8.21	--
	S. Em. ±	0.13		0.30	
	C. D. at 5%	0.38		0.86	
	C. V. %	18		20	

Thus, the insecticides viz., fenvalerate 0.0125, monocrotophos 0.04, fenvalerate 0.01 and endosulfan 0.07 per cent were highly effective in reducing the damage of this pest after two sprayings. According to Judal and Patel (1982), monocrotophos 0.04 and endosulfan 0.035 per cent, when applied @ 700 litres per hectares at 64 and 85 days after sowing were effective in reducing the borer infestation of wheat. Similarly, the application of endosulfan 4 per cent dust @ 25 kg/ha was also found effective to control this pest by giving higher yield of wheat (Anonymous, 1982). Thus, the present findings are in confirmation with the earliar reports.

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