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### LABORATORY EVALUATION OF THREE ANTIFEEDANTS AGAINST THE GRUBS OF *ÉPILACHNA VIGINTIOCTOPUNCTATA*

Antifeedants fit well an effective tool in an integrated system of pest management. In India, information available on the use of antifeedants in the control of crop pests is very meagre. Studies were hence undertaken towards filling up this lacunae in our knowledge and in the present contribution results of experiments conducted to assess the relative efficacy of three antifeedants—fentin acetate, fentin chloride and AC 24055— in protecting bittergourd from the attack of *Epilachna* grubs are presented.

**Table 1**  
Effect of three antifeedants on mortality and feeding of grubs of  
*É. vigintioctopunctata*

Antifeedant and concentration	Mortality (%)	Larva! weight difference ( $\pm$ ) gm	Weight of leaf consumed (gm)	Mean of leaf weight protected over control. (%)
Control	Nil	0.300	3.57	—
Fentin acetate				
0.0125%	Nil	0.230	2.00	43.9
„ 0.025%	Nil	0.190	1.88	47.3
„ 0.05%	Nil	0.190	1.53	57.1
„ 0.1%	Nil	0.030	1.37	61.6
„ 0.2%	25.0	0.100	1.10	69.1
Control	Kill	0.290	3.15	—
Fentin chloride				
0.0125%	5.0	0.160	2.40	23.8
„ 0.025%	20.0	0.020	1.80	42.8
„ 0.05%	20.0	• 0.050	1.65	48.5
„ 0.1%	25.0	- 0.145	1.50	52.3
„ 0.2%	40.0	• 0.235	1.00	68.2
Control	Nil	0.200	3.40	—
AC 24055				
0.0125%	Nil	0.180	2.00	41.1
„ 0.025%	5.0	0.050	1.80	47.0
„ 0.05%	15.0	- 0.050	1.70	50.0
„ 0.1%	20.0	- 0.080	1.50	55.8
„ 0.2%	25.0	- 0.100	0.75	77.9

In these experiments fourth instar grubs, reared on bittergourd leaves in the laboratory, were used. Fentin aceate (as brestan, 60% WP) and fentin chloride (as brestanol, 40% WP) were supplied by M/S. Hoechst Pharmaceuticals Ltd., Bombay and AC24055 (50% WP) by M/s. Cyanamid India Ltd., Bombay. Each antifeedant was used at 5 graded concentrations, details of which are given in Table 1. Weighted leaf bits were sprayed with the different concentrations of the antifeedants and air-dried. They were placed in petridishes over wet padding of cotton and filter paper. For each treatment ten weighed grubs of *E. vigintioctopunctata* were put on the sprayed leaves for 48 hours. There were two replications for each treatment. Leaf bits sprayed with distilled water served as control. Results were assessed in terms of mortality of the grubs, larval weight difference, weight of leaf eaten under each treatment and the mean percentage of leaf weight protected over control.

Results are given in Table 1. The three chemicals at their effective antifeedant concentrations are not seen to have high immediate toxicity; the maximum mortality of grubs exposed to the antifeedant residues is only 40 per cent. This finding is in agreement with that of Ascher and Ishaaya (1973) with *Spodoptera littoralis* larvae. Weight changes of the grubs under the treatments show that all the three antifeedants suppress the feeding of the larvae to varying degrees. A well defined inverse relationship is evident between the antifeedant concentrations and increase in weight of the larvae as reported earlier in *S. littoralis* (Dale and Chandrakk, 1972). With respect to the leaf weight, application of 0.2 per cent suspension of AC 24055 (a triazene compound) ranks first as an antifeedant followed almost equally by fentin acetate and fentin chloride.

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#### REFERENCES

- Ascher, K. R. S. and Ishaaya, I (1973) *Pesticide Biochemistry and Physiology*, 3, 526-336,  
Dale, D. and Chandrika, S. (1972) *Pesticides*, 6, 92-93.

Division of Entomology,  
College of Agriculture, Vellayani,

D. DALE  
K. SARADAMMA

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