https://doi.org/10.29321/MAJ.10.A03530

Insecticidal Trials for the Control of the Melon Fruit Fly, Dacus Cucurbitae COQ Infesting Snakegourd, Trichosanthes Anguina

by

K. NAGAPPAN[1], S. KAMALANATHAN[2], T. SANTHANARAMAN[3] and M. K. AYYASAMY[4]

Introduction: Sixteen species of fruitflies (*Dacus* Spp.) are known to cause heavy damage to fruits and vegetables in India and other countries. The melon fruitfly, *Dacus cucurbitae* often causes appreciable injury to the snakegourd fruits. The maggots of these flies bore into the ripening fruits and the fruits begin to rot and drop, thereby reducing the yield and the quality of the fruits. Ayyar (1940) recommended preventive control measures such as prompt removal and destruction of damaged fruits and trapping the adult flies with poisoned syrups to prevent egg-laying. Narayan and Batra (1960) advocated spraying of diesel oil emulsion when the flies congregate in large numbers during cooler part of the day. Srinivasan and Narayanaswamy (1962) reported that spraying parathion 0.05% or malathion 0.1% four times at 10 days interval was very effective in controlling the fruitflies on ashgourd and pumpkin and application of parathion 0 02% or endrin 0.02% four times at an interval of 10 days commencing from the time of flowering gave very good control and higher yield against melon fruit flies. Pali (1963) found that parathion 0.04% W. P. and diazinon 0.02 % proved very effective in reducing the incidence of melon fruitflies.

Field trials were undertaken at the vegetable Farm, Agricultural College, Coimbatore with newer insecticides against the fruitfly on snakegourd and the results are presented in this paper.

Materials and Methods: During the years 1967-69 three field trials on Extra-long snake-gourd variety were conducted for the control of the snake-gourd fruitfly with eight insecticides compared against an untreated control. The treatments were randomised and replicated four times having four plants for each replication. A total of three rounds of spraying was given at tri-weekly intervals commencing from the flowering stage of the crop. Fruits if any ready for harvest were collected before second and third treatments and further harvests were made only two weeks after each treatment. At the time of each harvest all the fruits were screened for the incidence of fruitfly. The healthy fruits were separated from the infested ones and the data on the basis

1. Asst. Entomologist (Vegetable), 2. Crop Specialist (Vegetable), 4. Statistical Assistant, Agri. College and Res. Institute, Coimbatore and 3. Entomologist, All India Co-ordinated Rice Improvement Project, Coimbatore.

of number and weight recorded. As the treatments were uniform for all the three seasons a combined analysis was carried out. The various treatments and the results are presented in the Table below :

TABLE. *Effect of insecticidal treatments on the infestation of fruitflies on snakegourd*

S. No.	Treatments	Mean fruitfly incidence	(Weighted analysis)
		% affected by number	% affected by weight
1.	Carbaryl 0.1%	17.68	11.53
2.	Trichlorfon 0.1%	18.95	11.77
3.	Parathion 0.025%	19.02	11.50
4.	Phosphamidon 0.1%	19.16	13.79
5.	Dimethoate 0.1%	15.95	10.67
6.	Formothion	19.36	15.15
7.	Malathion 0.1%	21.33	16.89
8.	Fenthion 0.1%	13.95	10.87
9.	Control	41.39	37.92
	S.E.	4.93	4.72
	C.D.	14.78	14.15
	Conclusion:	9, 7, 6, 4, 3, 2, 1, 5, 8	9, 7, 6, 4, 2, 1, 3, 8, 5

Results and Discussion : The data indicate that all the insecticidal treatments are superior to control. Among the insecticides, fenthion 0 1% recorded the minimum infestation on the basis of number followed by dimethoate 0.1%. On weight basis dimethoate 0.1% recorded the minimum infestation followed by fenthion 0 1%. The difference between the two treatments was meagre and these were on par.

Work done elsewhere have also indicated the effectiveness of fenthion and dimethoate. Melis (1957) reported dimethoate 0.06% to be effective against eggs and maggots of *Dacus oleae* which was confirmed by Boselli (1962) Fenthion 0.1% spraying was reported to give excellent control for fruitflies on peaches (Puzzi *et al* 1962 & 63). Dimethoate 0.06% or fenthion 0.06% were considered to be the best cover spray for the queensland fruitfly *D tryoni* (Anon. 1964).

The present studies also have indicated the superiority of fenthion 0.1%, dimethoate 0.1% in minimising the incidence of fruitfly on snakegourd.

Summary : During the years 1967-69 three field trials were conducted against the fruitfly on snakegourd with eight insecticides. The results have indicated that spraying fenthion 0.1% or dimethoate 0.1% thrice at triweekly intervals commencing from the time of flowering minimised the incidence of fruitfly.

REFERENCES

Anon. 1964. Queensland fruitfly, *Dacus (Strummeta)* tryoni. *Agrl. Gaz N.S.W.*, 75 : cover.

Ayyar, T. V. R. 1940. Hand book of Economic Entomology for South India. *Govt. Press, Madras.*

Boselli, F. 1962. Studies on the control of *Dacus oleae* in Sardenia. The possibility of using parathion elimination of excessive residues in the soil. *Ann. Sper. agr.* (N.S) 12 : 1411-16.

Melis, A. 1957. Enforced limitation of the campaign against *Dacus oleae* on the coast of Tuscamy in 1956 *Redia*. 42 : 1-60.

Narayan, E. S. and R. N. Batra. 1960. Fruit flies and their control. *Indian Council of Agrl. Research, New Delhi.*

Pali, N. S. 1963. Studies on the control of melon fruitfly, *Dacus cucurbitae* Diptera Tephritidae. *Ind. J. Hort.*, 20 : 67-68.

Puzzi, A., A. Orlando and W. C. Ribas. 1962. Powdered Lebaycid (0, 0-dimethyl - 0.4 methyl mercapto) - 3 - Methyl phenyl thiophosphate) as a control of the fruitfly, *Anastrepha* spp. *Biologica* (Sao and Paulo), 28 : 199-200.

———, O. Rigitano and A. Orlando. 1963. The control of fruitflies on peaches by Lebaycid spray. *Ibid*, 29 : 189-90.

Srinivasan, P. M. and P. S. Narayanaswamy. 1961. Appropriate time for taking up control measures against fruitflies on ash-gourd *(Benincasa cerefera* L.) Pumpkin *(Cucurbita moschata* L.). *Madras agric. J.*, 48 : 395-96.

———. 1962. Insecticidal control of the fruitfly, *Dacus cucurbita* on snakegourd. *Ibid*, 49 : 309-10.

AN IMPORTANT ANNOUNCEMENT.

Due to the considerable increase in the cost of printing materials and charges of the Madras Agricultural Journal, the subscription rates have been revised as follows from Jan. 1970, Vol : 57.

For Individual Subscribers	...	Rs. 15/-
For Institutions	...	Rs. 25/-
For Foreign Subscribers (both individuals and Institutions)	...	$ 6/-

All the subscribers are requested to kindly extend their kind co-operation as usual.

SECRETARY.