

ON THE CONTROL OF BRINJAL PESTS USING DETERRENTS*

P. A. Rajan Asari and M. R. G. K. Nair

Agricultural College, Vellayani

Use of deterrents, if proved effective will help in avoiding the unnecessary contamination of vegetables and to ensure an effective and long standing suppression of the pests. Instances of the control of crop pests using deterrents in India are those of *Heliothis armigera* H., *Sphenarches caffer* Z. and *Exelastes atomosa* W. using bleaching powder (Krishnamoorthy, 1936) and of *Schistocerca gregaria* and *Locusta migratoria* with neem. (Pradhan *et. al.*, 1962 and 1963). No information on the use of non-hazardous deterrents in the control of vegetable pests is available and hence the present investigations were undertaken.

Materials and Methods

The deterrents used were, dimethyl phthalate and oil of *Eupatorium oderatum* as 0.5% emulsions, neem seeds, bassia seeds and *Hydnocarpus* seeds as 1.0% suspensions and silicagel, kiesulghur, activated charcoal and magnesite as dusts. The emulsions were prepared by dissolving the materials in benzene and diluting with water containing 1.0% teepol. The seeds were ground and suspended in water.

A randomised block design was adopted for the experiment. Seedlings of Muktakeshi strain of brinjal were planted at a spacing of 90×90 cm at four plants per plot and these were surrounded by border plants. The deterrents were applied at intervals of ten days for a period of two months and counts of insects were taken on the days preceeding and succeeding each application. For the first four observations insects present on the whole plant were counted and for the subsequent observations counts of insects on the top five leaves and shoot alone were taken. The number of fruits infested with borer was also noted. The data were analysed statistically.

Results and Discussion

The results of the experiment are given in the Table 1. There was no significant influence of the treatments on the population of the borer *Leucinodes orbonalis* and *Epilachna*. All the treatments significantly reduced the population of aphid (*Aphis gossypii*). In the pre-treatment assessment

Table 1
Mean number of different insect pests of brinjal treated with deterrents.

Treatments	% damage of brinjal fruits by borer	Aphid		Jassid		Epilachna	
		Pretre- atment	Posttre- atment	Pretre- atment	Posttre- atment	Pretre- atment	Posttre- atment
0. Control	83.02	397.7	429.7	134.7	158.7	17.0	19.6
1. Dimethyl phthalate	73.91	195.3	119.3	93.0	82.7	10.6	13.6
2. Neem seed	74.51	89.7	77.3	87.3	82.3	6.6	6.3
3. <u>Eupatorium oil</u>	76.66	132.3	105.0	99.7	83.3	18.6	18.0
4. Bassia seed	72.09	127.7	116.7	107.7	97.0	8.0	6.0
5. <u>Hydnocarpus seed</u>	72.97	140.0	143.3	111.0	119.7	18.3	14.0
6. Silicagel	74.07	53.3	99.3	116.0	106.7	10.6	7.3
7. Kiesulghur	96.66	144.0	160.0	76.0	97.0	12.3	9.3
8. Activated charcoal	72.97	186.7	143.7	67.0	76.3	12.0	14.0
9. Magnesite	85.41	179.7	186.0	92.3	74.0	16.6	5.0

C. D. for pretreatment count of Aphid - 4.94; G. D. for posttreatment count of Aphid, 6.01

C. D. for pretreatment count of Jassid - 2.00; C. D. for posttreatment count of Jassid, 1.43

which reflected the residual effect as well, silicagel was the best treatment followed by neem, bassia, oil of *Eupatorium*, *Hydnocarpus* and kiesulghur, magnesite, activated charcoal and dimethyl phthalate. In the posttreatment count, which shows immediate repellancy, neem was the best, followed by silicagel, bassia, dimethyl phthalate and oil of *Eupatorium*, *Hydnocarpus*, activated charcoal, kiesulghur and magnesite. The pretreatment counts in all treatments showed reduction in the jassid (*Empoasca* sp.) population and activated charcoal was the best deterrent. Other treatments in the order of effectiveness were kiesulghur, neem, magnesite and dimethyl phthalate, oil of *Eupatorium*, bassia, *Hydnocarpus* and silicagel. In the posttreatment count significant reduction of jassid infestation was evidenced with the different

materials tried, magnesite being the most effective followed by activated charcoal, neem, dimethyl phthalate and oil of *Eupatorium*, kieselgur and bassia silicagel and *Hydnocarpus*.

Summary

A field experiment was conducted to assess the relative efficacy of nine deterrents in controlling the insect pests of brinjal. It was found that none of the deterrents were effective in controlling borer infestation on fruits and *Epilachna* bettla. Neem seed suspension and silicagel were effective in reducing the population of aphid while activated charcoal and neem seed suspension ranked top most in reducing jassid population.

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