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STUDIES ON THE CHEMICAL CONTROL OF CUCURBIT MITE, *TETRANYCHUS CUCURBITAE*

Shamshad Akbar & Sohail Ahmed
Department of Entomology, University of Agriculture Faisalabad

Kelthane 18.5 EC Polytrin-C 440 EC and Orthene 75 SP, each at 0.1% concentration, were tested against cucurbit mite, Tetranychus cucurbitae Rahman and Sapra. kelthane yielded the maximum mortality, of 100%, 100% and 96.2% of eggs, nymphs and adults, respectively, after 96 hours of spray whereas Orthene proved least effective with 65 with 65.6% and 65.4% mortality of eggs, nymphs an adults, respectively, after 96 hours of spray.

INTRODUCTION

The cucurbit mite, Tetranychus cucurbitae Rahman and Sapra is a serious pest of cucrbits, especially bittergourd in Pakistan. The workers like Sapra (1944), Basu and Pramanik (1969), Dhooria and Mann (1980) and Pande and Reddy (1982) obtained good control of Tetranychus spp. by the use of different insecticides/acaricides. Mohsin (1963) effectively controlled cucurbit mite with Phankaptan whereas Akbar and Arif (1986) got good results with Nuvacron 0.1% after 96 hours of spray.The present study has been planned to investigate the relative efficacy of Kalthane Polytrin-C and Orthene against different stages of cucurbit mite.

MATERIALS AND METHODS

The studies were conducted in the experimental area of the Department of Agri. Entomology, U.A.F. following Randomized complete Block Design.. The treatments, three insecticides and one check, were replicated thrice. The insecticides viz. kelthane 18.5 EC, Polytrin-C 440 EC and Orthene 75 SP, each @ 0.1% a.i. were applied twice at an interval of 30 days. Three leaves, one each from base, middle and top parts of each of the five randomly selected plants per plot were selected and the pest population from each leaf was recorded from 3 different spots with the help of a 2 cm board square and a field lense. Observations were recorded 24 hours before spray and then after 24,48, 72 and 96 hours of each spray.

RESULTS AND DISCUSSION

The data (Table I) reveal that the mortality of eggs, nymphs and adults of Tetranychus cucurbitae Rahman and Sapra increased with the passage of time in all the treatments.

Kelthane 18.5 EC, after 24,48,72 and 96 hours of spray proved to be the most effective against egg stage of the mite as it gave 83.7, 85.6, 99.3 and 100% mortality, respectively. It was followed by Polytrin-C and Orthene which yielded 48.9, 55.2, 68.1, 79.9 and 39.5, 46.8, 55.8, 65.6% mortality, respectively after the same time intervals thus revealing a significant difference among them.

Kelthane again proved effective against nymphal stage of the mite. It yielded 80.2, 84.1, 97.0 and 100% mortality after 24,48,72 and 96 hours of spray, respectively and it proved significantly different from Polytrin-C and Orthene which gave 57.7, 64.2, 72.7, 85.2 and 46.6, 51.1, 61.3 and 70.5% mortality of nymphs, respectively after the same time intervals.

The insecticides/acaricides tried, proved least effective against adult stage of the mite at three time intervals. However, Kalthane yielded 69.5, 75.2, 93.7 and 96.2 % mortality after 24, 48, 72 and 96 hours of

Table: 1 Percentage mortality of eggs, nymphs and adults of *T. cucurbitae* attacking bittergourd at different time intervals by different insecticides/acaricides (0.1% concentration)

Treatments	Percent mortality after different time intervals											
	24 hours			48 hours			72 hours			96 hours		
	Egg	nymph	adult	Egg	nymph	adult	Egg	nymph	adult	Egg	nymph	adult
Kelthane 18.5 EC	83.7a	80..2a	69.5a	85.6a	84.1a	72.2a	99.3a	97.00a	93.7a	100a	100a	96.2a
Polytrin-C 440 EC	48.9b	57.7b	50.5b	55.2b	64.2b	56.6b	68.1b	72.7b	66.5b	79.9b	85.2b	78.8b
Orthene 75 SP	39.5c	46.6c	41.1c	46.8c	51.1c	48.8c	55.8c	61.3c	58.6c	65.6c	75.5c	65.4c
Control	5.15d	4.0d	4.5d	6.5d	7.4d	5.3d	4.5d	3.8d	6.0d	5.8d	6.0d	5.0d
Cd	5.02	5.04	8.55	5.10	4.19	2.86	5.86	3.57	5.80	6.82	4.97	8.58

spray, respectively, proving to be most effective followed by Polytrin-C (50.5, 56.6, and 78.8% mortality) and Orthene (41.1, 48.8, 58.6 and 65.4 % mortality), respectively after 24,48,72 and 96 hourrs of spray, thus revealing a significant difference among them.

Kelthane 18.5 EC at 0.1% concentration proved to be the most effective against all the stages of Tetranychus cucurbitae Rahman and Sapra, thus accounting for ovicidal activity.Therefore, application of Kelthane at egg stage can help in reducing the population of cucurbit mite.

These results are similar to those of Basu and Pramanik (1969), Attala et al., (1970, 1970a, 1972) and Singh et al., (1985) who obtained satisfactory control of Tetranychus spp. with kelthane. Other workers like Sapra (1944), Mohsin (1963), Pande and Reddy (19822) and Akbar and Arif (1986) used insecticides/acaricides, other than those included in the present study, against tetranychid mite, it is therefore, difficult to compare the present results with their findings.

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