

**Studies on Control of Mite,
Tetranychus neocaledonicus Andre
Infesting Cotton (*Gossypium hirsutum* L.)***

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The wide spread mite epidemic on cotton in Gujarat during 1972-73 season was so extensive and severe that even recommended spray schedules did not offer complete relief. Laboratory investigations were, therefore, undertaken to find out the most effective insecticides from the conventional as well as new ones in market for the control of mites infesting cotton crop.

The adult stages of *Tetranychus neocaledonicus* Andre were used in these studies. These were collected from infested leaves from unsprayed cotton fields. Twelve different insecticides were tested at stipulated concentrations besides a control of only water spray. In each treatment 15 adults were treated with given insecticides by placing them on the cotton leaf in individual petri dishes (8 cm in diameter) having the moist sand at their bottom. Petioles of cotton leaves were wrapped with wetted cotton wool to keep the leaves fresh and turgid for a longer period. The insecticides were sprayed with help of Potter's tower

with 1 ml of spray material at a pressure of 40 kg/cm.² Each treatment was repeated four times. The mortality data obtained 72 hours after the treatment were corrected by using the Abbott's formula and then they were angularly transformed for statistical analysis. The results obtained are summarized in Table 1.

The data in Table 1 reveal that dimethoate 0.03%, phosphamidon 0.03%, dinocap 0.05%, dichlorvos 0.03%, thiometon 0.03%, methyl demeton 0.03%, monocrotophos 0.03% and carbophenothion 0.03% were more toxic than remaining insecticides giving 100% control, while the treatments endosulfan 0.05%, fenitrothion 0.05% and dicofol 0.05% were not so effective as mortality was only 71.02, 70.88 and 64.98 per cent respectively. DDT failed to control the mites as it gave only 3.57% mortality 72 hours after the treatment.

The findings above confirm the results obtained by Atwal, Chaudhary and Sohi, (1966) who also reported consistently high mortality of all the active stages of the phytophagous mite, *Tetranychus cucurbitae* Rahman and Sapra with sprays of dimethoate 0.05% and phosphamidon 0.025%. Mookerjee and Chatterjee (1971) have also reported 100% mortality of a very similar plant feeder mite, *Tetranychus telarius* Linn., within six hours when sprayed with 0.03% phosphamidon, carbophenothion or dimethoate on plants. There is thus very convincing evidence to recommend foliar application

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TABLE—1

Efficacy of different insecticides against the adults of *Tetranychus neocaledonicus* Andre infesting cotton.

Treatment	Concentration used (%)	Mean % mortality 72 hours after treatment
Dimethoate EC	0.03	100.00 (90.00)*
Phosphamidon EC	0.03	100.00 (90.00)
Dinocap LC	0.05	100.00 (90.00)
Dichlorvos EC	0.03	100.00 (90.00)
Thiometon EC	0.03	100.00 (90.00)
Methyl demeton EC	0.03	100.00 (90.00)
Monocrotophos EC	0.03	100.00 (90.00)
Carbophenothion EC	0.03	100.00 (90.00)
Endosulfan EC	0.03	71.02 (57.79)
Fenitrothion EC	0.05	70.88 (57.33)
Dicofol EC	0.05	64.98 (54.75)
DDT W/P	0.25	3.57 (7.73)
Control (water spray)	—	0.0 (0.0)
	S.E.m.	(3.84)
	C.D. (5%)	(7.79)

*Figures in parenthesis represent angular values.

(—) Means underscored by the same line are not significantly different.

of systemic pesticides like dimethoate 0.03%, phosphamidon 0.03% or carbophenothion 0.03% for mite control on cotton. Ineffectiveness of DDT even at a higher concentration of 0.25% has been conclusively established.

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