

FIELD EFFICACY OF MALATHION, DIMILIN AND ATABRON AGAINST AMALTAS LEAF STITCHER *PIESMOPODA OBLIQUIFASCIELLA* L.

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Abstract

Malathion 57EC, Dimilin 25WP and Atabron 5EC were tested for their efficacy against *Piesmopoda obliquifasciella* in the field. Trials were conducted in randomized complete block design with three replications. Malathion @ 0.05%, 0.1% and 0.2% gave 58.32, 78.52 and 82.59% and 71.2, 86.49 and 87.50% mortality after 24 hours and two weeks of spray, respectively against zero percent natural mortality (corrected mortality after Henderson and Tilton's formula) Dimilin caused 47.29, 66.94% and 84.54, 88.14% mortality after one and two weeks of spray at 0.025 and 0.05% concentrations, respectively. Similarly 58.16, 73.17% and 80.38, 89.36% mortality was recorded against Atabron at 0.025 and 0.05% concentrations after one and two weeks of treatment against zero percent natural mortality. On the basis of these findings, Malathion @ 0.1%, Dimilin and Atabron @ 0.05% concentrations are suggested for effective and timely control of *P. obliquifasciella*.

Key words: *Piesmopoda obliquifasciella*, Amaltas leaf stitcher, Malathion, Dimilin, Atabron

Introduction

Amaltas leaf stitcher, *Piesmopoda obliquifasciella* is a key pest of amaltas, *Cassia fistula* at the University of Peshawar and Pakistan Forest Institute, campuses, Peshawar. Shah (1990) and Bajwa & Gul (1995) have reported more than 50-70% and 36-39% foliar damage, respectively. Heavy infestation left the leaves rusted and dirty giving bad appearance. Thus avenue value of the tree is impaired for which it is grown. Moreover, photosynthetic process is affected which leads towards stunted tree growth. It destroys annual growth of the tree to the extent of 50-100% depending upon the severity of infestation (Khawaja et al., 1982).

Khawaja et al. (1982) used an entomopathogenic fungus *Beauveria bassiana* (Bals.) Vuill. against the pest in the laboratory and obtained 72.5-97.5 percent larval mortality versus 50 percent natural mortality. Similarly, Khawaja, et al., (1983) secured 78.1-90.7 percent larval mortality of *P. obliquifasciella* in the

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laboratory with the help of Bactospeine (*Bacillus thuringiensis*) at the rate of 1.6×10^5 – 3.2×10^5 spores per ml against 34.4 percent natural mortality. However, there was no attempt to control this serious pest in the field.

Organo-phosphate pesticides and antimoultants are used against agricultural and forest insect pests worldwide. Malathion 57EC has been successfully tried against forest insect pests in Pakistan. For instance, spraying of Malathion @ half liter per hectare and flood irrigation alongwith Malathion application has successfully controlled *Tonica niviferana*, *Agrotis* spp. and *Euxoa* Spp., respectively (Chaudhry, 1988). But many insect pests have developed resistance against synthetic insecticides and Malathion is no exception (Kasana, et al, 1995). It was, therefore imperative to work out efficacy of different dose rates of Malathion in the field. Antimoultants (insect growth regulators) is a new group of insecticides, which is environmentally safer than other groups of insecticides. Hence these are used against forest insect pests particularly for controlling defoliators.

In Pakistan, antimoultants have been tried against various forest insect pests in different climatic zones. For example, Dimilin and Alsystin gave 93-100% mortality of *Biston regalis* (Kail defoliator) when used in 0.01, 0.02, and 0.04% concentrations (Chaudhry et al., 1984). Dimilin in laboratory as well as field trials, in doses of 0.02% and 0.04% concentrations gave cent percent mortality of the larvae of *Plecoptera reflexa* Guen. The residual effect of the insecticides continued up to about one month and provided cover for two successive and overlapping generations. Whereas, same insecticide gave 96% and 83% mortality of young and mature larvae of poplar defoliator *Ichthyura anastomosis* Steph, respectively at 0.04% concentration (Chaudhry and Gul, 1985). Likewise, Alsystin and Dimilin at the rate of 0.01, 0.02 and 0.04% caused 100% mortality in the larvae of *Euproctis lunata* Walk. with in 20 days (Rehman and Chaudhry, 1987). Keeping in view the successes of these insecticides against various forest insect pests, field efficacy trials of Malathion, Dimilin and Atabron were carried out against *P. obliquifasciella*

Materials and Methods

An Organo-phosphate pesticide-Malathion 57EC and two antimoultants namely, Dimilin 25WP (Diflubenzuran) and Atabron 5EC (PP-145) were evaluated for their efficacy in the field against the larvae of Amaltas leaf stitcher, *Piesmopoda obliquifasciella* L. (Pyrilidae: Lepidoptera). These trials were conducted at the Pakistan Forest Institute Campus, Peshawar.