

Joint action of certain indigenous plant extractives against *Amsacta moorei* Butler attacking on moong bean

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ABSTRACT

The present finding deal with the results of the joint action and synergistic effects of certain plant extractives viz., *Acorus calamus*, *Allium sativum*, *Annona squamosa*, *Azadirachta indica*, *Argemone maxicana*, *Croton tiglium* and *Pongamia glabra*, when tested against the fifth instar larvae of *Amsacta moorei* Butler on moong bean crop in field. The results revealed that most toxic admixtures were the extract of *A. indica* when mixed and tested with *A. Calamus* (74.34 per cent mortality). The worst and least effective performance was observed in case when bulb extract of *A. saltivum* was combined with the seed extract of *A. indica* (37.45 per cent mortality).

Key words : Joint Action, Synergistic effects, Admixture, *Amsacta moorei* Butler.

INTRODUCTION

Red Hairy Caterpillar *Amsacta moorei* Butler is a serious pest of *kharif* crop. It is highly polyphagous and feeds on many *kharif* crops by devastating them fields after fields. Though for its control, various chemical insecticides have been evaluated. But their indiscriminate and continuous use, without adequate consideration had led to develop a high degree of resistance in insects and their resurgence. On the other hand, a mass mortality of human beings is the result of these pesticides, like Bhopal episode and a classical example of a village Handegetha (Karnataka), where entire population was paralysed due to consumption of fishes and crabs loaded with endrin and ethyl parathion (Rao, 1986). Looking to this, Govt. of India has enforced the restriction to use certain chemicals and fumigants on various crops and in storage (Rajak, 1992).

Therefore, with the realisation of various ill-effects of these chemicals other alternative means may be evaluated. The use of certain botanicals in this direction appears to meet the open challenge in the armoury of protection of these noxious pests. On the other hand, the use of various plant extractives may prove the best and feasible approach to control various polyphagous pests attacking on fields crops.

The present piece of work incorporates the results of certain indigenously available plant extracts for their joint and synergistic effect as an insecticide against a polyphagous pest *Amsacta moorei* Butler attacking on moong bean crops under field conditions.

MATERIALS AND METHODS

Joint action of certain plant extracts were evaluated by using the rhizome extract of sweetflag (*Acorus calamus*), bulb extract of garlic (*Allium sativum*), seed extracts of Sharifa (*Annona squamosa*), Neem (*Azadirachta indica*), Jamalgota (*Croton tiglium*) and seed extract of Karanj (*Pongamia glabra*). The experiment was conducted in Departmental, Insectary using randomised block design (R.B.D.) with three replications having nine treatments including one control on moongbean crop against *A. moori*. For this, each plot measuring an area of 5x3 m was prepared and moong bean seeds were sown. The combined effect was studied by mixing all the extracts with a leading extract of neem (*A. indica*) at their 1.5 per cent concentration to observe the synergistic effect of these botanicals, if any, whereas the extract of neem (*A. indica*) alone in its two concentrations (1.5 and 3.0 per cent) was also included, so as to compare the results of admixtures of the tested extracts with the higher dose of 3.0 per cent of *A. indica* alone.

The spraying of various combinations of the extracts was done at the peak emergence of the pest *A. moorei* in the last week of August. The moong bean crop was thoroughly sprayed at the point of slight run off in each plot. The data on the mean mortality of *A. moorei* was recorded after 24 hours of spraying all the combinations with neem (*A. indica*) and neem alone at its two concentrations i.e. 1.5 and 3.0 per cent on the moong bean crop. Data, thus, obtained were subjected to statistical analysis to test the significance.

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