

EFFECT OF CHEMOSTERILANT (TEPA) ON FECUNDITY, STERILITY AND CONTROL OVER REPRODUCTION IN *LEUCINODES ORBONALIS****VIVEK DIXIT AND J.K. AWASTHI¹**Department Of Zoology,
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Received : 18.03.17; **Revised** : 02.04.17, **Accepted** : 02.05.17**ABSTRACT**

The effect of different concentrations of chemosterilant by leaf dip method , show reduction in fecundity 39.2 to 79%, net sterility 7.75 to 86.38% and control over reproduction 50.4 to 94.6%.

Under adult feeding method, reduction in fecundity was observed 38.6 to 72.7%, net sterility 10.62 to 80.40% and control on over reproduction 47.2 to 94.0%.

Figure : 01

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KEY WORDS : Concentrations, Chemosterilant, Fecundity, Sterility, Tapa.

Introduction

In india during different seasons a good variety of vegetables are available. Different vegetables have medicinal values so they are in demand in different industries. Many insect pests pass their life cycle on different vegetable plants and cause great loss to crops and farmer as well as economy of our country .

Among a variety of vegetables, brinjal (*Solanum melongena*), known as egg plant, is one of the most delicious vegetable in India. The fruit is very nutritive and contains vitamins³ A,B,and C.

Among the major insect pests, *Leucinodes orbonalis* is a serious pest of brinjal crop.¹⁰ This pest was reported to cause 1-16% damage to the shoots and 16-64% fruits.¹ It was found that damaged fruits⁴ contained less vitamin C. This pest also infest other vegetable plants and cause mild to severe loss.⁸ Rainy season crop has been found to be infested more severely than the summer

season crop.¹¹

To avoid these losses from pest different insecticides are used.^{5,7,9}

On the other hand use of chemicals on various agricultural crops in india has resulted in mammalian hazards and side-effects and adverse effects on non target organisms.

Hence it is desirable to make the judicious use of chemosterilants , a safer method of pest management.^{2,6}

Material and Methods

The field experiments were conducted at the Insectary, Department of Entomology, Narain (P.G.) College , Shikohabad. While the laboratory experiments were conducted at the Department of Zoology, Narain (P.G.) College. Shikohabad (U.P.) India.

A stock of the moth was maintained in

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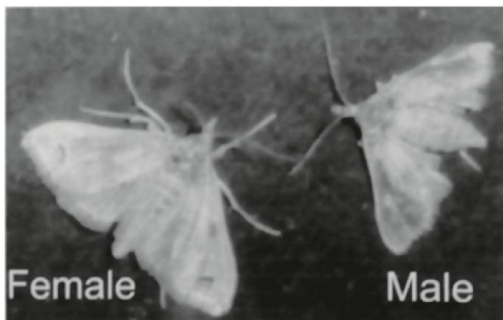
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Fig. 1 : Adult Male and Female *L.orbonalis*

laboratory to ensure its regular supply of different developmental stages for different studies during the investigation. The moths were reared in large number ,generation after generation. The food supply was maintained twice a day in view of evaporation of water from leaves.

Tepa whose efficacy as chemosterilants were employed against *Leucinodes orbonalis* in this experiment..

CONCENTRATIONS OF CHEMOSTERILANTS USED

The different concentrations of chemosterilants used against *L.orbonlis*. The concentrations considered in this investigation included 0.05,0.25,0.50,0.75 and 1.00 percent. These concentrations were obtained by dissolving

TABLE -1 : Percent reduction of fecundity,percent net sterility and percent control over reproduction in *L. orbonafis* cause by "Tepa" under different modes of treatment
(Values are mean \pm S.E.)

Mode of treatment	Concentration (%)	% Reduction in fecundity	(%) Net sterility	(%) Control over reproduction
L.D.M.	0.05	39.2	7.75	50.4
	0.25	45.0	95.62	56.8
	0.50	62.3	40.34	78.9
	0.75	70.7	56.72	90.6
	1.00	79.0	86.38	94.6
A.F.M.	0.05	38.6	10.62	47.2
	0.25	44.4	40.37	54.4
	0.50	56.3	52.72	73.9
	0.75	68.4	58.64	88.9
	1.00	72.2	80.40	94.0

the desired quantity of a chemosterilant in acetone.

APPLICATION OF CHEMOSTERILANTS

The experimental insects were treated with different concentrations of chemosterilant by following two methods.

1-LEAF DIP METHOD (LDM)

In this method of treatment small and uniform size of leaf were treated with each concentration of tepa by leaf dip method.

2-ADULT FEEDING METHOD (AFM)

In this method of treatment a concentration of tepa was mixed in twenty percent sugar solution which was supplied to adults for feeding.

The effect of chemosterilant on *L.orbonalis* conducted experimentally under laboratory conditions of temperature and relative humidity.

Result and Discussion

The data pertaining to influence of different concentration of chemosterilant on the fecundity, sterility and percent control over reproduction in *Leucinodes orbonalis* have been presented (Table -1).

The reduction in the fecundity of the moth under the leaf dip treatment, varied from 39.2 to 79.0% among different concentrations of the tepa and exhibiting indirect proportionality to the concentrations ($P<0.05$).

Further the net sterility which varied from 7.75 to 86.38% among different concentrations under leaf dip treatment differed significantly from concentration to concentration and it also increase with increase in concentration. Exactly in the same way, the percent control over the reproduction under the influence of different concentration of the tepa ,varying from 50.4 to 94.6% and increasing with the advancing concentration depended on the strength of the tepa applied ($P<0.05$).

Further in response to adult feeding treatment of moths with different strengths of the tepa. The reduction in fecundity, net sterility and control over reproduction , varying from 38.6 to 72.2. from 10.62 to 80.40%, and from 47.2 to 94.0% respectively and showing direct proportionality to the concentration, differed significantly with different concentrations of tepa.

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