

EFFICACY OF SELECTED PLANT EXTRACTS AGAINST OKRA PEST, *Helicoverpa armigera* (FRUIT BORER)

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ABSTRACT

Laboratory experiments were carried out to evaluate the efficacy of different plant Extracts against insect pests of okra. Field experiments were done to observe the pest succession and seasonal incidence of different insect pests vis-a-vis weather parameters, spatial distribution, sequential sampling and efficacy of different chemicals and biopesticides against insect pests of okra. Laboratory experiments were conducted and the field experiments were carried in the experimental field of S. D. Govt. College, Beawar, Ajmer, Rajasthan. To confirm the variability of data and validity of results, analysis of variance (ANOVA) was conducted.

1. INTRODUCTION

Okra or Lady's finger (*Abelmoschus esculentus* (L.) Moench), commonly known as bhendi belongs to the family Malvaceae. It is an essential summer vegetable in Rajasthan. This crop is acceptable for cultivation as a garden crop as well as on huge commercial farms. It is an important vegetable crop cultivated throughout India. Besides India it is also grown in many tropical and subtropical areas of the world especially U.S.A., Turkey, Australia, UK and other neighbouring countries. It is quite preferred in India because of easy cultivation, dependable yield and ability to varying moisture conditions.

Okra fruits are good source of vitamins A, B and C. It is rich in protein and mineral elements. It is good for people suffering from faint of the heart. Fully developed pods and stems hold unfinished fibre are used in paper industry. Plants soaked in water are used as a cleanser in the manufacture of gur. The fruits also have some medicinal value and are used in cases of catarrhal infection, feverishness, irritation of bladder, inflammations and cough.

Its fruits are cooked as a vegetable in curries, stewed with meat, cooked in soups and also canned and dried ripe seeds are sometimes roasted and used as replacement for coffee.

Fruit Borer (*Helicoverpa armigera*) Moths are middle sized, pale brown, olive green to brown wings with cocoa brown round spots in the center. Each moth lays 100 of eggs. The young larvae feed on tender foliage, while advanced stages attack the fruits, bore round holes inside the fruit. Larvae move fruit to fruit and may ruin many fruits. External symptoms become visible in the form of a bored hole.

2. METHODOLOGY

Plant materials -

The plant materials used in the trials including leaves of *Azadirachta indica*, *Calotropis procera* and *Datura stramonium* were collected from different near by areas of Beawar, Ajmer district, Rajasthan, India and stored in plastic containers at a storehouse. The leaves were placed in a shady place ($30 \pm 5^\circ\text{C}$) and left to dry. The leaves were then crushed into a fine powder and stored in an air-tight container until use. Five various extracts were

prepared by using Soxhlet apparatus. The extracts of *Azadirachta indica*, *Calotropis procera* and *Datura stramonium* were prepared by weighing 50 g each of the leaf powders.

Preparation of plant extraction -

The leaves were shadow dried at room temperature and powdered by using a preeti mixie. Then the powdered material has been extracted by using the soxlet apparatus with acetone solvent. After the completion of the extraction, one gram of residual extract were weighed and dissolved with little amount of acetone

Insect collection -

The adults of *Helicoverpa armigera* were also collected from the okra plants of near by fields, Ajmer district, Rajasthan, India and they were reared in one litre glass jars in laboratory. To allow air passage, a whole 2 cm in diameter was opened in the centre of each jar lid, and a sterile cloth was glued to the underside of each lid. Throughout the experiments insect cultures were maintained at constant temperature ($32 \pm 1^\circ\text{C}$), photoperiod (13L: 11D) and relative humidity ($60 \pm 5\%$).

Helicoverpa armigera (FRUIT BORER)



3.RESULTS AND DISCUSSION

The results of the total mortality of *H. armigera* were treated with different plant extracts like *Azadirachta indica*, *Calotropis procera* and *Datura stramonium*.

The concentration of the plant extracts such as 2.0, 4.0, 6.0, 8.0 and 10.0% were used. The results showed that, the mortality of *H. Armigera* varied with varied concentration of plant extract. For instance, high pesticidal activity was recorded from the crude extracts of *Azadirachta indica*, *Calotropis procera* and *Datura stramonium*. The mortality of *H. armigera* occurs in the *A. indica* extract increased with increased concentration of plant extracts at 48 and 72 h. During 24 h, at 2.0% concentration, there was no mortality and highest mortality was occurring during 10.0% concentration. In 48 h, at 4.0% concentration, there was no mortality but after that the mortality of insect beetle were gradually increased during 6.0, 8.0, 10.0% and crude extract treatment.

TABLE

Study of effect of Plnat Extracts on Height (cm)

	Degree of freedom	Sum of Squares	Mean Square	F Value	P Value
Plant height (cm)	4	885.276	220.817	114.05	0.0000

Study of Study of effect of Plnat Extracts on population reduction Percentage of H. armigera

population reduction Percentage	Degree of freedom	Sum of Squares	Mean Square	F Value	P Value
Two day after treatment	4	4065.86	1015.23	139.75	0.0000
Four day After treatment	4	5480.55	1370.40	260.55	0.0000

4.CONCLUSION

Biopesticides are effective in very small quantities and decompose quickly, resulting in lower exposures and largely avoiding the pollution problems caused by Harmful pesticides.

Biopesticides also decrease soil pollution it means these are eco friendly. Now a days demand of organic farming increase. So Biopesticides play very important roll in Healthy Environment.

Biopesticides also provid good crop production for farmer.

Harmful Chemicals Pollute the nature. So now your duty to promote the use of eco friendly biopesticides .

5.REFERENCES

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