

Research Paper :

## Evaluation of ovicidal activity of some plant extracts against *Helicoverpa armigera*



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### SUMMARY

Studies conducted to see the effects of aqueous and methanol extracts of selected plant species on hatchability of freshly laid eggs of *H. armigera* indicated that all the eight plant species were found to inhibit hatching of the eggs. The mean per cent hatching of the eggs in both the aqueous and methanol extracts of plant species was ranged between 15.00 to 65.00 and 30.00 to 70.00, respectively as against 10.00 per cent in control. Amongst the aqueous extracts of plant species, 10.00 per cent neem fruit extract (NFE), 10 per cent serni whole plant extract (SWPE), 7.5 per cent neem fruit extract (NFE), 7.5 per cent serni whole plant extract (SWPE) and 10 per cent undi fruit extract (UFE) were found equally promising in reducing hatchability of eggs in *H. armigera*. In methanol extracts of plant species, the maximum per cent unhatched eggs were noticed in the treatment with 7.5 per cent neem fruit extract (NFE) with 70.00 per cent unhatched eggs, which was significantly better than rest of the treatments except the treatments with 7.5 per cent undi fruit extract (UFE), 7.5 per cent ritha fruit extract (RFE), 7.5 per cent serni whole plant extract (SWPE) and 5 per cent neem fruit extract (NFE) which were found at par with each other. The hatchability of eggs in both aqueous and methanol extracts of plant species was found to be decreased with increase in the concentration of extracts tried.

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### Key words :

*Helicoverpa armigera*,  
Ovicidal activity,  
Plant extract

The plants are rich source of bioactive organic chemicals. They are less deleterious to human being, non-phytotoxic and have no residual toxicity to parasites, predators and pollinators. Plants are known to produce a variety of secondary metabolites such as alkaloids, terpenoids, polyacetylenes, flavonoids, usual amino acids, sugars, etc. which has behavioural and physiological effects on the colonization, development, growth, survival and multiplication of insects. In view of their environmental safety, botanicals offer an attractive alternative to synthetic pesticides.

There is a great diversity in the plants species in the country and abroad. It is estimated that there are about 2,50,000 to 5,00,000 different plant species existed in the world (Dhaliwal and Arora, 2004). Only 10 per cent of these have been examined chemically indicating that there is enormous scope for further work (Benner, 1993). As many as 2,121 plants species have been

reported to possess pesticidal properties. The neem, pyrethrum, rotenone, ryania, nicotine, sabadilla and number of other lesser known botanical pesticides are being used from the time much before the advent of synthetic organic pesticides to protect agricultural crops from the ravages of insect and non-insect pests in different parts of the world (Shukla and De, 2000). The presence of biologically active principle in different parts of various plant species viz., seed, flowers, bark, stem, leaves, roots, rhizomes, etc. and their extra ordinary pest management traits have been investigated by many scientists (Pradhan *et al.*, 1962; Gujar and Mehrotra, 1983; Koul, 1985; Pandey *et al.*, 1987; Ayyangar and Rao, 1991; Sarode *et al.*, 1995; Dwivedi and Sharma, 2003; Raja *et al.*, 2005).

The Konkan region of Maharashtra is blessed with greater diversity of plant species. Many of them are known to possess insecticidal and medicinal properties. However, very little information is available

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