INTERNATIONAL JOURNAL OF PLANT PROTECTION
VOLUME 10 | ISSUE 1 | APRIL, 2017 | 174-180

● e ISSN-0976-6855 | Visit us : *www.researchjournal.co.in*

IJPP

RESEARCH PAPER

DOI : 10.15740/HAS/IJPP/10.1/174-180

Safety of selected botanical and synthetic insecticides against braconid parasitoids of vegetable ecosystems

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ARITCLE INFO

Received : 20.02.2017
Revised : 25.03.2017
Accepted : 29.03.2017

KEY WORDS :
Chelonus blackburni, *Cotesia plutellae*, *Bracon brevicornis*, NSKE, *Lantana*

ABSTRACT

Insecticides are unavoidable in pest management programmes especially when the pest crosses economic threshold level (ETL). In this context, some of the insecticides and botanicals that are used in vegetable ecosystem were test verified for their relative safety against the commonly encountered parasitoids *viz.*, *Bracon brevicornis* Wesmael, *Chelonus blackburni* Cameronand *Cotesia plutellae* Kurdjumov. Toxicity effects of five insecticides *viz.*, Acephate 75SP, Chlorpyriphos 20EC, Cypermethrin 10EC, Profenofos 50EC, Quinalphos 25EC and NSKE 5 per cent against *B. brevicornis*, *C. blackburni* and Hexane extracts of *Lantana camara* var. *aculeate* tested against *C. plutellae* were evaluated under laboratory conditions. Amongst insecticides tested, Profenofos 50EC was found to be most toxic with LC_{50} value of 22.27 and 16.280 ppm; Chlorpyriphos 20EC was the least toxic with the highest LC_{50} value of 198.53 and 314.255 ppm and NSKE 5 per cent had no effect against *B. brevicornis* and *C. blackburni*, respectively. *C. plutellae* pupae were treated with hexane extracts of *L. camara* resulted of 66.67 and 76.67 per cent with reduction of adult emergence at 8 and 10 per cent, respectively. While, *C. plutellae* adults were found to be safe at all concentrations except 8 and 10 per cent and its contact toxicity of 63.33 and 96.67 per cent adult mortality recorded within 24h by dry film method. The results suggest that the Chlorpyriphos 20EC and botanical extracts can very well integrate in the management of vegetable insect pests.

How to view point the article : Thanavendan, G., Jeyarani, S. and Kennedy, J.S. (2017). Safety of selected botanical and synthetic insecticides against braconid parasitoids of vegetable ecosystems. *Internat. J. Plant Protec.*, **10**(1) : 174-180, **DOI : 10.15740/HAS/IJPP/10.1/174-180**.

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