

**STUDIES ON EFFECT OF SOME PESTICIDE RESIDUES
ON SOME PESTS ATTACKING TOMATO AND
ASSOCIATED PREDATORS**

By

Atef Ahmed Abd- Elgayed

B.Sc., Agric. Sci., Cairo University, Fayoum Branch 1988

M.Sc., Agric. Sci., Cairo University, Fayoum Branch 1995

THESIS

**Submitted in Partial Fulfillment of the Requirements for the
Degree of
Doctor of Philosophy**

**In
Agricultural Sciences
(Economic Entomology)**

Plant Protection Department
Fayoum Faculty of Agriculture
Cairo University

2004

ABSTRACT

Studies on effect of some pesticide residues on some pests attacking tomato and associated predators

The present work concerned to evaluate three of the recommended pesticide residues, the chemical pesticide, Actellic and two biocides, Vertimec and Biofly on *Bemisia tabaci* Genn., *Tetranychus urticae* Koch and two of the predominant predators, the lady bird beetle, *Stethorus gilvifrons* Mulsant and the predaceous mite, *Euseius scutalis* Athias-Henriot on tomato plants (Castle rock variety) cultivated in successive four plantations in Fayoum Faculty of Agriculture research Farm in 2001 and 2002 years. latent effects of such pesticides on the mentioned arthropods were studied also in laboratory. The obtained results are summarized as follows :

- 1-Fourteen predaceous insect species belonging to 6 families in four orders and additional to predaceous mites of sub class Acari were recorded.
- 2-For control treatment, high counts of each pests and predators were recorded and significantly, in general, by using any of experimented pesticides. Vertimec appeared the highest persistent under nature condition and the most killer for the desired arthropods. For Actellic, counts of both pests increased significantly than control, while for predators, few counts were recorded. Such records increase significantly at Biofly treatment, but still lower than control, however with insignificant difference
- 3- Median lethal concentration of the experimented pesticides (Actellic, Vertimec and Biofly) were determined on *B.tabaci* and *T.urticae*. Thereafter, adults of each pest and associated predator exposed to sweet potato leaves treated with pesticides at L C₅₀ for 24 hrs, except Biofly, the exposure extended to 27 hrs. In control treatment water was used. The alive adults after exposure transferred to untreated sweet potato leave, the predators were provided also with the preferred prey, eggs of *B.tabaci* for *S. gilvifrons* and *T.urticae* nymphs for *E. scutalis*. Bioactivity, durations and mortality percentages of these adults and subsequent progeny were observed.

Key words: *Bemisia tabaci* –*Tetranychus urticae* –*Stethorous gilvifrons* –*Euseius scutalis* – residual effect –Latent effect –Vertimec –Biofly- Actellic –Ecology –Biology.