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EFFICACY OF MOULT INHIBITOR PH 60-43 ON MOSQUITO *CULEX QUINQUEFASCIATUS*

S. CHOCKALINGAM and
P. SOMASUNDARAM

Zoological Research Laboratory, Thiagarajar College,
Madurai 625 009, India.

AMONG the insecticides, moult inhibitors interfere with chitin synthesis in insects and are considered

very promising in the management of insect pests and vectors. Chitin synthesis inhibitors are unique for their greater selectivity of action, absence of undesirable effects on man, environment and compatibility with modern insect pest management principles¹. Field test with these compounds have been successful against dipterans^{2,3}. The efficacy of the action of a few chitin synthesis inhibitors against different species of mosquitoes has been evaluated in recent years⁴⁻⁶. The purpose of the present study is to investigate the efficacy of a moult inhibitor PH 60-43 (penfluron analogue compound) in controlling the population of *Culex quinquefasciatus*.

Solutions of different strengths of PH 60-43 were prepared in double-distilled water. The concentrations ranging from 0.00003 to 0.002 ppm of PH 60-43 were stored in plastic containers (250 ml capacity). One hundred larvae of 2-hr-old second instar were introduced to each container. Each concentration had 4 replicates with appropriate controls. Mortality counts were recorded at every moult. The percentage mortality was calculated using Abbot's formula⁷ and the results are presented in table 1.

The total larval mortality was 96% at the lowest concentration of 0.00003 ppm of PH 60-43 and the remaining 4% of pupae so emerged also died finally without emerging into adults. The larval mortality was gradually raised at the lowest concentrations of 0.00003 and 0.00004 ppm as the age of the larva progressed suggesting that the fourth instar is more susceptible. Bhakshi *et al*⁸ reported that 0.00035 ppm is the LC₅₀ value of penfluron compound for the second instar of *C. quinquefasciatus*.

Table 1 Efficacy of penfluron compound PH 60-43 on the percentage mortality of *Culex quinquefasciatus*

Concentration (ppm)	Larval instars			
	II	III	IV	Pupa
0.00003	18	12	66	4
0.00004	36	14	50	—
0.0001	54	26	20	—
0.0002	66	29	5	—
0.0003	70	20	10	—
0.0004	70	30	—	—
0.0008	82	18	—	—
0.001	96	4	—	—
0.002	100	—	—	—

LC₅₀ value for II instar larva is 0.00009 ppm

However, the present study on the same species indicated that even the application of a still lower dosage of 0.00009 ppm of PH 60-43 may cause 50% mortality of second instar. It is suggested that this new compound of penfluron analogue PH 60-43 can be used as a most effective controlling agent rather than its first formed parent compound diflubenzuron to manage the larvae of *C. quinquefasciatus*.

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ANNOUNCEMENT

ADVANCED WORKSHOP ON 'FAULT-TOLERANT COMPUTING' BANGALORE, JULY 20-25, 1987, ISRO-IISc SPACE TECHNOLOGY CELL

There is a persistent need for reliable and uninterrupted operation of computer systems in a variety of applications such as aerospace, communication, data acquisition and control. High reliability and availability have to be ensured despite component failures and design errors through fault tolerance. To meet the challenging requirements of many advanced missions currently being undertaken in the country in various fields, immediate attention needs to be given to indigenous design and development of fault-tolerant computing (FTC) systems. Focussing attention in this direction, the advanced workshop on FTC covers various aspects of FTC in depth. The workshop is organised under the sponsorship of various scientific and technological organisations interested in this field.

Outline of Programme

The six-day workshop aims at providing vast exposure to recent developments in fault-tolerant computing techniques with emphasis on real-time applications. The workshop consists of a series of invited lectures with an in-depth coverage of the following and other allied topics: Introduction to hardware and software fault tolerance, reliability analysis, fault tolerance methodology, voting and synchronisation schemes, fault detection and identification (FDI) techniques, software fault tolerance

in real-time systems, fault tolerance in real-time distributed computing systems, fault-tolerant operating systems, reliability modelling and performance issues, survey of existing fault-tolerant systems, state-of-the-art problems in fault-tolerant computing, and embedded computing systems for aircraft, spacecraft, telecommunications and data acquisition and control.

Faculty

Gelenbe E., University of Paris, France; Jensen E.D., Carnegie-Mellon University, USA; Krithivasan R., University of Massachusetts at Amherst, USA; Rennels D., University of California at Los Angeles, USA; Shrivastava S.K., University of Newcastle upon Tyne, England.

Participants

This workshop will be of interest to hardware software engineers, researchers, managers, faculty members and users/designers of industrial, aerospace, communication and other systems. Participants will be provided with lecture notes.

Advance information/registration forms, request for accommodation and other correspondence may be addressed to: S. Murugesan, Head, Control Electronics Section, ISRO Satellite Centre, Vimanapura, Bangalore 560 017.