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BIOLOGICAL AND TOXICOLOGICAL STUDIES OF THE
CRICKET, METIOCHE VITTATICOLLIS (STAL)
(ORTHOPTERA : GRYLLIDAE), A PREDATOR
OF RICE INSECT PESTS

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ABSTRACT

RUBIA, ELSA GREGORIO, University of the Philippines at Los Banos, December 1985. Biological and Toxicological Studies of the Cricket, *Metioche vittaticollis* (Stal) (Orthoptera: Gryllidae), a Predator of Rice Insect Pests.

Major Professors: Dr. B.M. Shepard and Dr. B.M. Rejesus

Metioche vittaticollis (Stal) is a common sword tailed cricket in rice fields in the Philippines.

The egg has an incubation period of 7-15 days ($\bar{x} = 10.6 \pm 0.34$ days). The duration of the four nymphal stadia was: 5-8 days ($\bar{x} = 6.6 \pm 0.21$ days) first nymphal stadium, 5-8 days ($\bar{x} = 6.7 \pm 0.18$ days) second nymphal stadium, 6-8 days ($\bar{x} = 6.9 \pm 0.15$ days) third nymphal stadium, and 6-8 days ($\bar{x} = 6.9 \pm 0.11$ days) fourth nymphal stadium.

The female laid an average of 82 eggs in its entire life span of 15-37 days ($\bar{x} = 28.9 \pm 2.8$ days). Male longevity ranged from 15-37 days ($\bar{x} = 28.5 \pm 2.9$ days) fourth nymphal stadium.

Among the weeds associated with the rice plant, the cricket preferred to oviposit on *Fimbristylis miliacea* (L.) Vahl and *Monochoria vaginalis* (Burn.F.) Presl.

Eggs of *Chilo suppressalis* (Walker) were preferred over those of the black bug, *Scotinophara latiuscula* Breddin when offered in a choice test.

Also, the crickets preferred young nymphal stages of brown planthopper, Nilaparvata lugens (Stal) and green leafhopper, Nephotettix virescens (Distant) over older instars.

Based on LD₅₀, the relative toxicity of the four insecticides to M. vittaticolis in descending order was: cypermethrin > carbosulfan > monocrotophos > BPMC. Based on ED₅₀, buprofezin, a chitin synthesis inhibitor, was toxic to N. lugens but non-toxic to the cricket.