PREDATION OF *CYRTORHINUS LIVIDIPENNIS* REUTER ON EGGS OF PLANTHOPPERS IN RICE

I WAYAN LABA

SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
UNIVERSITY OF THE PHILIPPINES AT LOS BANOS
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE
DEGREE OF

MASTER OF SCIENCE
(Entomology)

AUGUST 1991

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

I WAYAN LABA. University of the Philippines at Los Baños, August 1991. "Predation of the Cyrtorhinus lividipennis Reuter on Eggs of Planthoppers in Rice".

Major Adviser: Dr. K.L. Heong.

Laboratory and greenhouse experiments were conducted at the International Rice Research Institute (IRRI) in the province of Laguna, Philippines. Predation of both male and female of Cyrtorhinus on BPH and WBPH eggs was evaluated in the greenhouse using mylar cages. The predation experiments were conducted using different number of eggs of BPH and WBPH on the rice plants and using both male and female adults of Cyrtorhinus. In the preference experiments varying egg densities were made by placing different number of BPH and WBPH gravid females onto rice plant and exposed these eggs.

The functional response of Cyrtorhinus was found to fit Holling's Type II model. Searching efficiency (a') and handling time (Th) of Cyrtorhinus female (a' = 0.102, Th = 0.044) was higher than male (a' = 0.024, Th = 0.036) on BPH. Searching efficiency (a') of Cyrtorhinus female (a' = 0.062) was higher than male (a' = 0.023) on WBPH while handling time (Th) of Cyrtorhinus female (Th = 0.057) was lower than male (Th = 0.085) on WBPH. Cyrtorhinus lividipennis female was more effective than Cyrtorhinus lividipennis male on both prey BPH and WBPH.

In the experiments with BPH and WBPH eggs, the index preference (d) of Cyrtorhinus female for BPH and WBPH eggs varied from 0.2 to 0.8, with a mean of 0.542 (± 0.256), which is not significantly different

from 0.5 (no preference). The index preference of Cyrtorhinus male for BPH and WBPH eggs varied from 0.2 to 0.6 with mean α value 0.443 ($\pm$ 0.144). This is also not significantly different from 0.5.

Using searching efficiency ratio, the Cyrtorhinus female has higher preference for BPH eggs compared to the male. However, Cyrtorhinus lividipennis showed no preference for both BPH and WBPH eggs.