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**PARASITIZATION OF RICE HOPPER EGGS BY  
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(HYMENOPTERA: MYMARIDAE)**

**TRAN NGOC VIEN**

**JULY, 1993**

**PARASITIZATION OF RICE HOPPER EGGS BY  
*ANAGRUS FLAVEOLUS* WATERHOUSE  
(HYMENOPTERA: MYMARIDAE)**

**TRAN NGOC VIEN**

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## ABSTRACT

TRAN NGOC VIEN. University of the Philippines at Los Baños, Philippines, August 1993. "Parasitization of rice hopper eggs by *Anagrus flaveolus* Waterhouse (Hymenoptera: Mymaridae)".

Major adviser: Dr. K. L. Heong

Functional responses and preference of *A. flaveolus* to Brown planthopper (BPH) and Green leafhopper (GLH) eggs were conducted at Entomology Division, International Rice Research Institute (IRRI). *Anagrus flaveolus* was trapped in the field, based on Otake's (1976) method and cultured on BPH and GLH eggs in Insectary using mylar cages, based on the method described by Chandra and Dyck (1988).

The functional responses of *A. flaveolus* reared on both kinds of hopper eggs were found to fit Holling's Type II model. For BPH eggs, searching efficiency of *A. flaveolus* from BPH eggs was higher ( $3.374 \pm 1.515$ ) than that from GLH eggs ( $0.767 \pm 0.097$ ). For GLH eggs, searching efficiency of *A. flaveolus* from GLH eggs was significantly higher ( $0.076 \pm 0.024$ ) than that from BPH eggs ( $0.036 \pm 0.015$ ). The handling times were also significantly different.

It was clear that, *A. flaveolus* reared from both kinds of hopper eggs attack BPH eggs more efficiently (3.374 and 0.767 for BPH eggs compared to 0.036 and 0.076 for GLH ones).

In the mixed host environment of BPH and GLH eggs, *A. flaveolus* clearly preferred BPH eggs. The value of  $\alpha_B$  was always greater than 0.5, irrespective of the relative proportion of BPH eggs to total number of hopper eggs.  $\alpha_B$  ranged from

0.934 to 1, with a mean of  $0.981 \pm 0.029$  for *A. flaveolus* from BPH eggs and from 0.602 to 1, with a mean of  $0.943 \pm 0.004$  for *A. flaveolus* from GLH eggs.

Although *A. flaveolus* can attack both kinds of hopper eggs, it attacks GLH eggs only in the absence of BPH eggs and at very low rate. This rate was slowly increased from generation to generation.