

DE LA SALLE UNIVERSITY

STUDIES ON THE BIOLOGY OF DIADEGMA EUCEROPHAGA
HORSTM (HYMENOPTERA: ICHNEUMONIDAE), A PARASITOID OF
PLUTELLA XYLOSTELLA LINN. (LEPIDOPTERA: YPONEUMOTIDAE)

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ABSTRACT

Studies on the duration of development, lifespan of male and female adults, morphological and behavioral characteristics, reproductive capacity, percent adult emergence, sex ratio of progenies, and percent parasitism of D. eucerothaga, a parasitoid imported from Taiwan were conducted under greenhouse condition at Benguet State University Experimental Area, La Trinidad, Benguet from November, 1989 - July, 1990 and October 1990 - December, 1990.

Developmental duration from egg to pupal stage of the parasitoids is shortened at higher temperature. Egg to pupal development is 23.6 ± 3.39 , 19.03 ± 4.7 and 16.2 ± 1.47 days at temperature readings of $18 \pm 6.9^{\circ}\text{C}$, $19.5 \pm 6.2^{\circ}\text{C}$ and $21.29 \pm 5.8^{\circ}\text{C}$, respectively.

Male and female adult parasitoids survived for 17.07 and 17.51 days, respectively, when fed with 10% honey solution. The third filial generation of male parasitoids had a longer lifespan, 21.1 ± 7.55 days; while the first and second filial generation survived for 15.4 ± 7.55 and 14.7 ± 10.74 days, respectively. Likewise, F_3 female parasitoids survived for 19.4 ± 9.9 days while F_1 and F_2 survived for 13.4 ± 8.66 days and 19.73 ± 10.26 days, respectively.



Morphologically, the females are longer than the male parasitoids due to the presence of ovipositors in females.

The parasitoids could lay an average of 113 ± 66 eggs in their lifetime and reproduction was continuous as long as the females were alive. Oviposition peaked from the fifth day to the tenth day post-emergence of female adults and gradually declined until the female died.

A mean of 94% adult emergence of the parasitoid was noted. Mortality was 6% which apparently was due to bacterial, fungal infection and or ant infestation of the cocoons. Sex ratio of the progenies showed more males than females. Two female samples produced 100% males, due to arrhenotokous parthenogenesis.

Percent parasitism of D. eucerothaga was 14.04% and 37.66% on the first and third day, respectively, post-emergence of female adults. Parasitism peaked on the 5th day with 89.97% then declined to 17.9% on the 7th day.



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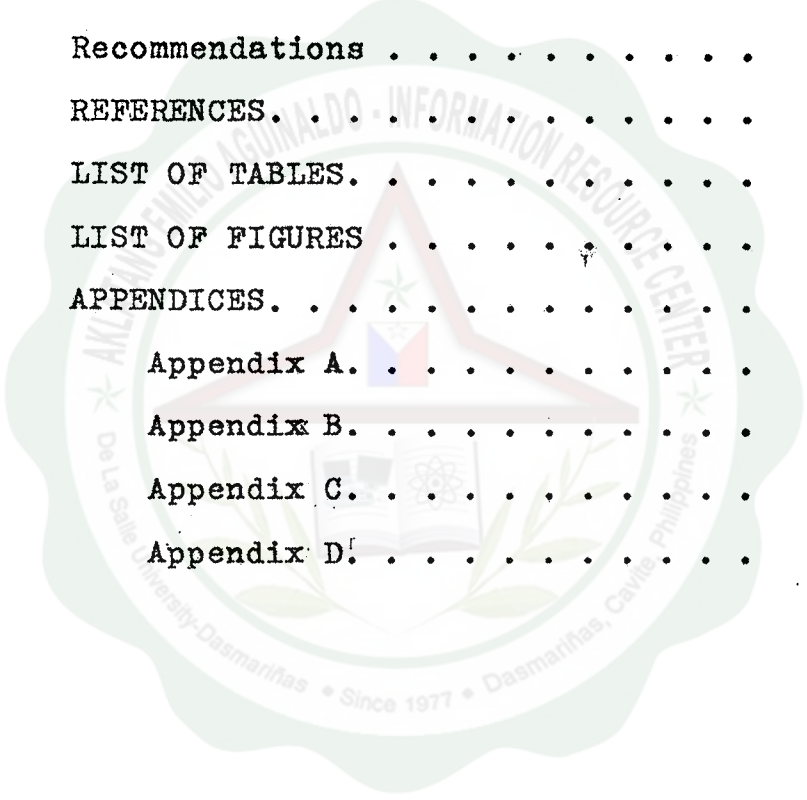
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