
RESEARCH PAPER

Life-table of uji fly *Exorista bombycis* louis on pure Mysore silkworm race

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The life-table of uji fly, *Exorista bombycis* L. was construction through 16 generation using fourth stage of Pure Mysore silkworm race as a host for depositing eggs with the different biotic characters like, mortality at every stage of its life cycle (eggs, maggots, post-parasitic maggots, puparia and adults) in the rearing room. Maximum percentage of mortality at puparia, adults, maggots, eggs and post-parasitic maggots stages was 36.04, 23.25, 17.62, 17.36 and 10.07 per cent, respectively. Similarly, the survivability rate varied at different stages, being minimum at pupal stage (63.96%) compared to adult (76.75%), maggot (82.38%), egg (82.64%) and post-parasitic maggot stages (89.94%). The number of individuals dying within the age and mortality factors are responsible for every stage of its life cycle have been discussed.

Key words : Silkworm larvae, Uji fly, Life-table, Mortality, Survivability

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INTRODUCTION

Uji fly, *Exorista bombycis* (Louis.) is an endo-larval parasitoid on silkworm, *Bombyx mori* L. (Jameson, 1922) and causing considerable damage to silkworm rearing in several silk producing countries including India. Scientists and farmers have adopted various control measures to manage uji fly, but these measures are not sufficient to control uji infestation and farmers lose 20-30 per cent cocoon production (Anonymous, 2008). Uji fly prefers to deposit eggs on older silkworm larvae, particularly the fourth and fifth instar silkworm (Siddappaji, 1985). Control of uji fly through biological means (hyperparasitoids) has a social relevance, since the host itself is an insect and insecticidal measures cannot be taken against a pest associated with an insect host (Vikas *et al.*, 2010). Therefore, it is important to study life-table of uji fly to know the mortality and survivability percentage at different stages of uji fly. The construction of life-table is essential for description and understanding of population dynamics of insect or it is a concise summary of certain vital statistics of a population (Deevy, 1947).

RESEARCH METHODOLOGY

A laboratory experiment was carried out on life-table of

uji fly developmental stages in 16 generations from August 2009 to November 2010. For preparing the life-table, the uji fly population was maintained in the laboratory by collecting maggots of *E. bombycis* from Ramanagar commercial cocoon market. After emergence the adult flies were kept in 60 x 60 x 60 cm muslin netted cages with a circular muslin sleeve covered passage. Then prepared 10 per cent glucose solution in cotton swab, which served as a food for the uji flies and it was placed in a Petridish and kept inside the cage (Sriharan *et al.*, 1980). For studying 16 generation of the uji fly, 100 number of fourth stage Pure Mysore silkworm larvae of *Bombyx mori* L. and two pairs of mated male and female flies were kept in a cage for oviposition. After 24 hours of ovipositional exposure, the infested larvae were taken out of the cage and reared with mulberry leaves in tray having wire netted covering. To record mortality and survivability at every stage of the uji fly for every generation, the parasitoid silkworm larvae were examined and total number of eggs oviposited was noted down. Subsequently maggot mortality was assessed on the basis of number of maggots transformed in to post-parasitic maggots and puparia. Similarly, pupal mortality was calculated from the emergence of adult flies and recorded reproductive male and female uji flies. The dead individuals of all the developing stages were examined thoroughly to find out the reasons for mortality.