

**Title** Effects of cold storage, rearing temperature, parasitoid age and irradiation on the performance of *Trichogramma evanescens* Westwood (Hymenoptera: Trichogrammatidae)

**Author** Abdurrahman Ayvaz, Eyüp Karasu, Salih Karabörklü and Aydin Ş. Tunçbilek

**Citation** Journal of Stored Products Research, Volume 44, Issue 3, 2008, Pages 232-240

**Keywords** Biological control; *Trichogramma evanescens*; *Plodia interpunctella*; *Ephestia kuehniella*; Parasitoid age; Cold storage

### Abstract

In this study, the effects of cold storage, rearing temperature, parasitoid age, and irradiation on the performance of the egg parasitoid *Trichogramma evanescens* were investigated. Pupae of *T. evanescens* can be stored at 4 °C for up to 3 weeks without much loss of performance. The longevity and walking speed of adults emerging from chilled pupae significantly decreased after longer storage periods. The  $F_1$  generation of adults which emerged from pupae stored up to 3 weeks was able to parasitize as well as the control. The parasitization rate was similar at 24, 27, and 30 °C, but significantly decreased at 33 and 36 °C. Although *T. evanescens* developed to the pupal stage at 36 °C, no adult emergence was observed at this temperature. Developmental periods were longer at 24 °C than at higher temperatures. The optimum age for *T. evanescens* to successfully parasitize host eggs ranged from 24 to 90 h. The parasitization frequency of the 56–78 h aged females was higher than for the other age groups. The daily egg laying pattern of female *T. evanescens* adults was similar when they were reared on *Ephestia kuehniella* or *Plodia interpunctella* eggs. Gamma- or ultraviolet-irradiated and unirradiated host eggs were equally preferred by adult females.