

# Fertility life table parameters of *Trichogramma brassicae* reared on two hosts, the flour moth, *Ephestia kuehniella* and the carob moth, *Ectomelois ceratoniae*

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The carob moth *Ectomyelois ceratoniae* (Zeller) (Lep.: Pyralidae) is considered to be one of the key pests on pomegranate worldwide. In Iran this pest annually causes considerable losses in pomegranate orchards. Chemical control of the carob moth is ineffective because its immature stages develop inside the fruits. Development of integrated pest management programs against this pest is therefore needed with application of various alternative control methods including biological control as a major component. Several *Trichogramma* species have been recorded in Iran, some of which have been noted to parasitize the carob moth and might therefore have potential to be exploited in biocontrol strategies. With the aim of choosing the best *Trichogramma* strain for biological control programs of the carob moth, we evaluated the efficiency of one indigenous strain of *T. brassicae* Bezd. collected from the carob moth eggs in pomegranate orchards, by comparing fertility life table characteristics on different hosts. Life table parameters including intrinsic rate of natural increase ( $r_m$ ), finite rate of increase ( $\lambda$ ), gross reproductive rate ( $GRR$ ), net reproductive rate ( $R_0$ ), doubling time ( $DT$ ), mean generation time ( $T$ ), intrinsic rate of birth ( $b$ ) and intrinsic rate of death ( $d$ ) were calculated. All of experiments were carried out at  $25\pm 1^\circ\text{C}$ ,  $65\pm 5\%$  RH, and 16L:8D photoperiod. The above calculated parameters of *T. brassicae* reared on *E. kuhniella* were  $0.30\pm 0.00$ ,  $1.35\pm 0.01$ ,  $47.90\pm 4.57$ ,  $44.97\pm 4.37$ ,  $2.31\pm 0.03$ ,  $12.64\pm 0.23$ ,  $0.35\pm 0.01$ ,  $0.05\pm 0.00$  and reared on *E. ceratoniae* were  $0.28\pm 0.00$ ,  $1.33\pm 0.00$ ,  $38.02\pm 2.44$ ,  $36.95\pm 2.54$ ,  $2.43\pm 0.03$ ,  $12.66\pm 0.12$ ,  $0.33\pm 0.01$  and  $0.05\pm 0.00$ , respectively. The overall parameters were significantly different for two species ( $P < 0.05$ ). This result showed that the efficiency of *T. brassicae* reared on *E. kuhniella* is much better than *E. ceratoniae*.

**Keywords:** *T. brassicae*, *E. kuhniella*, *E. ceratoniae*, life table parameters