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“Development on the margin”

Effect of the Entomopathogenic Fungus *Paceilomyces farinosus* on the Reproductive Potential of Poplar Leaf Beetle *Melasoma populi* L.

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Abstract

A local strain of *Paceilomyces farinosus* (isolated from infected sunn insects *Eurygaster integriceps* Put. in Duhok region) was obtained from Mycology bank/ Plant Protection Department/ School of Plant Production/ faculty of Agriculture and Forestry/ Duhok University, under the No. PEG-12. Fungus was grown on Potato Dextrose Agar (PDA) for 6–7 days at $25 \pm 1^\circ\text{C}$. The concentration of fungal suspension was diluted to (10^8) spore ml^{-1} . Spore concentration was determined by hemocytometer.

The effect of the *Entomopathogenic fungus* and *Paceilomyces farinosus* on the reproductive potential of female survivors, egg viability and total egg production of poplar leaf beetle *Melasoma populi* L. was investigated under laboratory conditions. Prepupae, pupae and newly emerged adults were treated with spore suspension of *P. farinosus* (1×10^8 conidia ml^{-1}). Another group of adults were reared on sprayed poplar leaves with a same concentration of conidial suspension. Egg production and hatching percentage were monitored daily over a 7- week period. Overall reproductive capacity (mean no eggs per female survived from fungus inoculums) were significantly lower as compared to the control. The total number of eggs per surviving female were 85.50, 149.50, 123.43 and 280.24 eggs for pre-pupa, pupa, adult and leaves treated, respectively, as compared to 299.75 in the control after fourth week. Pre-oviposition, oviposition, post-oviposition and the longevity of females and males were shorter in treated individuals compared to the control. The lowest hatching percentage was 75.12 % in eggs deposited by adult feed on treated leaves as compared to 98.42 % in the control.

The mortality of different stages was recorded 12 days after spraying with spore suspension. The data proved that *P. farinosus* have an effect on the different stages of *M. populi* particularly when sprayed on adults; 39.13 and 43.63% mortality was observed after 12 days when directly sprayed or reared on sprayed poplar leaves, respectively.

Keywords: *Entomopathogenic fungi*, reproductive potential, *Melasoma populi*, *Paceilomyces farinosus*