

Quantifying the host plant variety influence on dispersal of Codling moth *Cydia pomonella* (Lepidoptera, Tortricidae)

Gholam Hosein GHAREKHANI^{1,2}, Claus P. W. ZEBITZ¹

¹Otto-SanderStr.5 ,Institute of Phytomedicine (360), University of Hohenheim, 70593 Stuttgart-Germany

²Plant Protection Department of Agricultural Faculty, University of Maragheh, Maragheh-Iran,
(e-mail: ghgharakhany@yahoo.com)

Abstract

Insects orientation toward the host plants directed by different factors that performs the basis of plant resistance and susceptibility to particular pest. Host variety impact on pheromone and pear ester trap efficiency and consequently on the dispersal of Codling moth investigated in the present study. Delta traps baited with the pheromone and cylinder-shape traps with pear ester were utilized and impartially mounted on different varieties of apple trees. Laboratory reared and 12- 24 h old moths were sexed, marked using fluorescent powder and released at 1 m height from a central point. Sampling the marked and feral male and female moths performed during nine days after release. Release and recapture process carried out from May to September 2009. Data were analyzed using the Generalized model SAS software. Feral and reared male and female moths indicated dissimilar reactions not only toward different varieties but also for different sampling dates on the same variety ($P < 0.01$). The most important explanatory variable for feral male and female moths was sampling dates, while the variety and flight distance for feral males and the variety and flight elevation for feral female moths were the second and third influential variables respectively. For the marked male and female moths releasing date was the most important influential variable, while the trap type and variety for marked male and variety and flight height for the marked female were the second and third influential variables respectively. Present study revealed that dispersal of the feral and marked-released male and female Codling moths was influenced by host cultivars distinctly and decidedly. Moreover, Relationship of host plant variety and pest dispersal was quantified with distinct models. Outcomes of presented study may improve the prevention strategies regard to the resistance and vulnerability of the cultivars as well as dispersal behavior of the pest on different varieties. Moreover may ameliorate pest management tactics through further clarifying individual and sex-related distribution of the Codling moth.

Key words: Codling moth, dispersal, variety, modeling, pheromone, pear ester

s2012_a0103