

Pheromones for sustainable control of lepidopterous pests in olive farms in Egypt

Esmat Hegazi¹, Fredrik Schlyter², Wedad Khafagi³, Maria Konstantopoulou⁴ and E. Agamy⁵

¹Faculty of Agriculture, Alexandria University, Egypt

²Swedish University of Agriculture Sciences, Sweden

³Plant Protection Research Institute, Alexandria, Egypt

⁴Chemical Ecology and Natural Products Laboratory, NCSR "Demokritos", Attikis, Greece

⁵Faculty of Agriculture, Cairo of University, Egypt

Prays oleae Bern, the olive moth (OM), *Palpita unionalis* Hub., the jasmine moth (JM) and the leopard moth, *Zeuzera pyrina* L. (ZP) are the most important lepidopterous pests in olive orchards in Egypt, They cause direct yield loss by lowering tree growth, fruit set and fruit/oil quality. The sex pheromones of OM [(Z)-7-tetradecenal], JM E-11-hexadecenyl acetate and E-11-hexadecenal, and ZP (E,Z)-2,13-octadecenyl acetate were used for monitoring (all), mating disruption (MD) (all), and mass trapping (ZP). The study shows that trapping location and fruit bearing year are characteristics that strongly affect the timing of the control measures. Inclusion of photostabilizers into the pheromone-clay complex of OM and JM improved substantially the release rate and maintained adequate level of pheromone. Fruit yield from trees where sex pheromone had been applied increased significantly compared to control ones. Application of MD in ZP plots over two consecutive years progressively reduced the number of active galleries/tree in the third year where no sex pheromone was applied. Mating disruption shows promising for suppressing ZP infestation in olives. Yield from trees in mass-trapping fields was significantly increased in comparison to control trees. The combination of light and sex pheromone was optimally attractive to ZP moths. The study strongly recommends the use of mass-trapping method instead of pesticides against the ZP moths, not only to control them but also to mass-trap and monitor other lepidopterous pests of olive trees.

eshegazi@hotmail.com