

Effects of Application Rate and Interval on the Efficacy of Sprayable Pheromone for Mating Disruption of the Oriental Fruit Moth *Grapholita molesta*

Orkun B. Kovanci,^{*,1} James F. Walgenbach,² George G. Kennedy³
and Coby Schal³

The efficacy of microencapsulated sprayable pheromone was evaluated at different application rates and intervals for mating disruption of the oriental fruit moth, *Grapholita molesta* (Busck), in apple orchards during 2002. The following treatments were arranged in a randomized complete block design with three replications: (i) a low rate of pheromone (6.2 g a.i. ha⁻¹) applied at 14-day intervals, (ii) a medium rate of pheromone (12.4 g a.i. ha⁻¹) applied at 28-day intervals, (iii) a high rate of pheromone (24.7 g a.i. ha⁻¹) applied at 28-day intervals, and (iv) a non-pheromone control (insecticides only). The combination of a single insecticide application against first generation *G. molesta* at petal fall with one pheromone application each for the second, third and fourth generations at 12.4–24.7 g a.i. ha⁻¹ successfully controlled low populations. Pheromone-treated blocks had significantly lower trap catches than those in the insecticide-treated control blocks. Among pheromone treatments, significantly more moths were caught in the 6.2 g compared with the 12.4 and 24.7 g rates. Fruit damage was < 1% at harvest and there were no significant differences among treatments. Low rate frequent applications of sprayable formulation appeared to be effective under low pest pressure but efficacy declined with increasing populations. Further studies are needed to demonstrate the effectiveness of this approach under higher pest pressure.

KEY WORDS: *Grapholita molesta* (Busck); oriental fruit moth; mating disruption; sprayable pheromone; integrated pest management; apples.

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¹Dept. of Plant Protection, Faculty of Agriculture, Uludag University, 16059 Bursa, Turkey. *Corresponding author [Fax: +90-224-442-8077; e-mail: baris@uludag.edu.tr].

²Dept. of Entomology, North Carolina State University, Mountain Horticultural Crops Research and Extension Center, Fletcher, NC 28732, USA.

³Dept. of Entomology, North Carolina State University, Raleigh, NC 27695, USA.