

Mating Disruption of Oriental Fruit Moth in North Carolina Apple Orchards

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Oriental fruit moth (OFM), *Grapholita molesta* (Busck), is a key direct pest of apples in western North Carolina. Mating disruption was evaluated as an alternative control tactic against OFM from 2000 to 2001. Large plot trials were conducted to compare the efficacy of Isomate M100 polyethylene dispensers, 3M Phase III and Phase V sprayable OFM pheromone with conventional and non-managed blocks. The response of OFM males to different rates of sprayable pheromone applications was also tested in small plot experiments. Male moth trap shutdown in Pherocon 1C wing traps and fruit damage counts at mid-season and harvest were used to assess the efficacy of mating disruption. Mating disruption blocks had significantly lower pheromone trap catches of OFM adult males compared to conventional and non-managed blocks. Isomate M100 provided excellent trap shutdown and was superior to both sprayable pheromone formulations. Pheromone traps placed in the upper canopy captured significantly more moths than traps placed in the lower canopy across all treatments, and lures loaded with 100 µg of pheromone caught more moths than traps with 300 µg although the difference between doses was not significant. Fruit damage by OFM larvae was quite low (<1%) in mating disruption blocks, and was generally lower than in conventional and non-managed blocks. Small plot studies on the effects of different rates of sprayable pheromone showed that there was little difference among rates ranging from 5 to 20 gm (ai)/acre, but efficacy declined at 1 gm/acre.

Key words: Mating Disruption, Oriental fruit moth, Apple IPM