

Pome Fruits—Chemical Control

Codling Moth on Apple

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Keywords: codling moth, Isomate, apple

Studies were conducted to optimize the use of sex pheromones for mating disruption of codling moth. Results from experiments on the effect of dispenser height, pheromone blend, and number of dispensers are presented.

Replicated plots were established with Isomate dispensers placed either at 2 or 4 m heights in a 4.2 m apple canopy. Untreated plots were also established. Virgin female moths were tethered at 1, 2, 3 and 4 m in the central area of the canopy of each plot. Two hundred male moths were released in each plot. Females were dissected after 48 h to determine their mating status. Mating was significantly reduced at all heights in both pheromone treatments relative to the check. Significantly more mating occurred at 3 and 4 m in the 2 m plot than in the 4 m plot. In the 4 m-plot mating occurred only at 4 m.

To study the effect of pheromone blend replicated plots (n=7) were established with an untreated check, and plots treated with either a one or three pheromone component blend at three release rates (0.5, 2.0, and 10.0 mg/ha/h). In each plot 10 female-baited traps were placed and 300 marked male moths were released. Tests were run each for 5 nights. Significantly fewer males were caught in all pheromone treatments relative to the check. No significant difference due to blend was found. For each blend, no significant difference due to emission level was found, though the number of males caught was inversely related to pheromone remission levels.

To study the number of dispensers needed per acre two types of replicated tests (n=4) were run: equal release rates from each point source but different total amounts of pheromone applied per acre and unequal release rates from each point source but the same amount of pheromone applied per acre. In both tests, the degree of shut-down of male catch which occurred in female-baited traps and traps baited with 1 and 10 mg lures leveled off at rates between 100 to 400 dispensers per acre.