

**COMPARISON OF DIFFERENT PHEROMONE RELEASE SYSTEMS FOR
MATING DISRUPTION OF THE OBLIQUEBANDED LEAFROLLER
INTEGRATED WITH A BIORATIONAL INSECTICIDE
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PRINCIPAL INVESTIGATORS:

A. Agnello and H. Reissig, Dept. of Entomology, NYSAES, Geneva, NY 14456

ABSTRACT

The effectiveness of two different types of pheromone release systems in disrupting OBLR mating and subsequently preventing fruit damage were compared in 2.6–5.6-acre blocks in three commercial orchards in western NY: (1) Microsprayers (aerosol spray-burst devices, MSU), one application setup for the summer (Doyle and Oakes orchards); (2) Paraffin-based pheromone emulsions (Agrium), one application per summer generation (Mitchell orchard). Each of these treatments was combined with a 3-spray program of spinosad (SpinTor), an IPM-compatible insecticide that is naturally derived. Small sections of each block were left unsprayed to test the effectiveness of the pheromones alone. The different pheromone release treatments were evaluated by comparing male trap catches in pheromone traps with standard (Trécé) lures, and control was assessed by sampling growing terminals for OBLR larval infestations, and fruits for feeding damage, both in the summer and at harvest in the fall. All results were compared with similar samples taken from a comparable orchard on each farm managed under each grower's respective standard OBLR program.

Trap catch results indicated pheromone disruption at the Doyle orchard, but little effect was seen at the Oakes site. At Doyle's, the traps located in Check blocks caught many more moths, indicating that the pheromones in the disruption block disoriented the male moths. The catches at Oakes' were similar in the Check and Disruption blocks, showing that the presence of pheromones in the disruption blocks did not affect the male moths' ability to locate the females. However, the raw number of moths caught at Oakes was significantly lower than the number caught at Doyle's and Mitchell's. The highest catch at Oakes' was 13 (per trap per 3-day period), compared with Doyle's high of 69.5. It is possible that the pheromones were not as effective at the lower moth populations.

Results of terminal infestation samples were inconclusive. At Oakes' Orchard, the blocks with the pheromone-only treatment had the highest infestation (8%). At Doyle's, however, the treatments exhibited statistically comparable infestations between 4–10%.

The fruit damage results from inspection in early August and again at harvest indicate that a combination of pheromones and insecticides could result in a lower percentage of damaged fruit, although these differences were not always statistically significant. At Doyle's Orchard, the percent damaged fruits was from 2-3% lower using the combination of pheromones and insecticides, compared with using either method alone. Treatment differences were clearest at Oakes' Orchard, with 2.3% damage in the combination plots, and 10–11% using either method alone. Further commercialization of either of these dispensers will depend on their effectiveness against problem populations, as well as the economics of employing them either alone or in combination with selective insecticides.

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IPM House
630 W. North St.
New York State Agricultural Experiment Station
Geneva NY 14456
315-878-2353