Mating Disruption/SIR

Response of Four Tortricid Species to High-Dose Pheromone Sources

Lukasz Stelinski, Larry Gut and James Miller
Michigan State University, East Lansing, MI

Keywords: Cydia pomonella, codling moth, Grapholitha molesta, oriental fruit moth, Choristoneura rosaceana, obliquebanded leafroller, Argyrotaenia velutinana, redbanded leafroller, mating disruption, pheromone

Abstract: The responses of male codling moth (CM), oriental fruit moth (OFM), obliquebanded leafroller (OBLR) and redbanded leafroller (RBLR) were compared using electrophysiological analyses, wind tunnel assays and behavioral observations in the field. In a series of wind tunnel assays, brief exposures of male OBLR and RBLR to the plumes generated by lures releasing pheromone blends specifically tuned for each species or by commercially distributed Isomate OBLR/PLR Plus pheromone ‘rope’ dispensers induced different subsequent behavioral responses to pheromone. Pre-exposure of RBLR to pheromone resulted in decreased attraction to a lure and increased attraction to a rope. For OBLR, pre-exposure increased responsiveness to its tuned blend. Orientational responses of the four tortricids in the field to high-release pheromone rope dispensers were directly observed in apple plots treated or untreated with pheromone ropes. Attraction of male moths to rope dispensers proved to be more of the rule than an exception. Numerous OBLR, RBLR and OFM were attracted within 100 cm of their respective pheromone ropes in a plot not treated with pheromone. OBLR and OFM also came within 100 cm of their respective rope dispensers in a fully pheromone-treated orchard plot. No CM males were observed orienting to or landing near their respective rope dispensers in either the untreated or pheromone-treated plots.