

Mating Disruption/SIR

Competitive Attraction as a Primary Mating Disruption Mechanism and Its Implications

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

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Abstract: One of the means by which mating disruption (MD) may be achieved is through competitive attraction or false-plume following. Evidence supporting competitive attraction as a primary mechanism of MD includes 1) companion insecticides are often needed unless the pest density is low, i.e., the approach is highly density-dependent, 2) direct observations reveal that males of several pests of tree fruit are attracted to the high-dosage release devices used to disrupt them, and 3) more low-release release point sources rather than fewer high-release point-sources generally produce better disruption. If attraction to the pheromone source does play a key role in achieving MD, one would like to know if the encounter has an effect on subsequent behavior. Laboratory flight tunnel studies revealed that exposures similar to those observed in the field affect subsequent behaviors of male moths. However, a large proportion of individuals retained capability to initiate anemotaxis and plume follow. Under a scenario in which competitive attraction is important, one could expect that disruption of pests at high population densities should be improved by deploying many point sources. In small-plot trials in 2004, high densities of wax drops were found to provide significantly better disruption of oriental fruit moth than did lower densities or a standard treatment of Isomate M Rosso ropes.