Thresholds, Monitoring and Sampling

FLIGHT OF CODLING MOTH WITHIN MATING-DISRUPTED ORCHARDS

S. D. Cockfield
Okanogan Valley IPM, LLC, Brewster WA

Keywords: codling moth, mating disruption, flight

According to current ideas, male codling moths cannot detect traps until they are perhaps 50 yards away. Therefore, the effective trapping area is so small a grower needs at least one trap every 2.5 acres for a monitoring program. While that concept might be true, most monitoring programs use a lower density of traps. Perhaps these traps can monitor males effectively because the insects search for mates over a wide area. The purpose of this paper is to present the results of a project to demonstrate detection of codling moth from "hot spots" in an areawide mating disruption project, Brewster Areawide Management, and to relate this to interpretation of trap catch data.

Five sites with CM hot spots were selected within BAM. At each site, 15,000 moths from the SIR were released in June. Males were caught in existing standard pheromone traps (megalure, Trécé, Inc. and delta traps). Most males caught had moved within ¼ mile of the release sites, but some were caught as far away as ½ mile. In one site a few traps at the bottom of a hill caught no moths as close as ¼ mile from the release site, but traps further uphill caught many. In general, moths moved with the prevailing northern evening wind and uphill.

Low-density trap methods work when traps are placed in areas where they will catch as many of the moving males as possible, such as on the top of a hill. Some traps in BAM will not catch anything for some reason and need to be moved. Traps gather information from both near and far and the confounding cannot be resolved.