

DEVELOPMENT OF KAIROMONE-BASED MONITORING FOR BOTH SEXES OF CODLING MOTH IN CALIFORNIA WALNUTS

Doug Light, Kathy Reynolds, Alan Knight, Carolyn Pickel and Joe Grant

USDA-ARS, Western Regional Research Center, Albany, CA 94710

The ability of the kairomonal attractant to monitor the phenology of female and male codling moths was investigated for the fourth year in Californian walnut orchards under either conventional or mating disruption controls. The pear-derived volatile, ethyl (2E, 4Z)-2,4-decadienoate, and certain other host-plant volatiles have been optimized in composition, delivery rate, and formulation to create lures with enhanced population monitoring and prediction capability. Replicated pairs of pheromone-baited and kairomone-baited traps are being used to compare the detection and resolution of codling moth biofix, flight initiation – emergence, flight duration, peak and periodicity, population intensity, and the mating status of captured female moths. These population monitoring parameters are being correlated with the occurrence and degree of orchard nut damage (nut drop, canopy infestation, and harvest damage). With this data, a female-based ‘biofix’ model is being developed to predict egg hatch based upon the trap capture and monitoring of female emergence.