Biology/Phenology

Studies of Overwintering Codling Moth Infestation of Harvest Bins

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Codling moth (*Cydia pomonella*) have long been suspected of emerging from stacks of harvest bins in the spring and causing damage to nearby apple and pear orchards. With increased use of mating disruption for codling moth control, outside sources of infestation have become more of a concern for growers using pheromone confusion systems. Studies were designed to provide information on the source of codling moth larvae infesting bins (what proportion from infested fruit placed in bins vs. larvae entering bins before fruit is picked) and the pattern of codling moth emergence from bin piles. In these studies, codling moth (CM) larvae colonized wood harvest bins at a much higher frequency than harvest bins made of injection molded plastic (189 moths emerged from wood vs. 5 from plastic). There was no statistical difference in the number of moths infesting bins that had been filled with infested fruit compared to bins left empty at harvest. This suggests that CM enter the bins during the time spent in the orchard before harvest. Emergence of adult CM from wood bins placed in stacks of 216 (6 wide by 6 deep by 6 high) was found to be prolonged over time compared to field populations. Temperature differences within the bin stacks were found to account for this attenuated emergence pattern. This information could be important in developing a technique for neutralizing codling moth infested bins and in understanding how infested bins may be influencing pest management in fruit orchards that receive bins for harvest from large bin piles or are located near bin piles.

Implications for control of CM in conventional orchards and those using mating disruption as the principal component of an IPM system are discussed.