

Nuts—Thresholds, Monitoring and Sampling

Effect of Potential Inhibitors in PTB Pheromone Blends on Moth Collections

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Observations by pheromone researchers and complaints from private pest control advisors in early 1993 of poor performance in two commercial formulations of peach twig borer (PTB) monitoring dispensers caused considerable concern about these pheromone products. Chemical analysis of contents of "poor" and "good" performing dispensers by Jocelyn Millar, UC Riverside, showed several contaminants in the commercial pheromone product. After identification and synthesis of these materials, they were added to clean PTB pheromone and evaluated for potential inhibition of moth catch in field trials. The results of these trials showed that the addition of 10% 5-decenyl acetate to the standard PTB pheromone blend was completely inhibitory, resulting in male PTB collections equivalent to a solvent check. Two other potential contaminants and inhibitors, E-4 nonenyl acetate and E-5 undecenyl acetate, were not significantly inhibitory compared to the pure PTB pheromone.

Table 1. Effect of potential inhibitors added to the optimum PTB pheromone blend on male moth collections.

Inhibitor	Average trap catch ¹
Solvent check	4.1a
5-decenyl acetate	3.5a
E4-nonenyl acetate	361.5b
E5-undecenyl acetate	412.0b
none (pheromone standard)	520.6b

¹Five replicates in almonds counted weekly for 8 weeks, Caruthers, CA, July 28-Sept. 22, 1993.