

Pheromones and kairomones for control of stored product moths

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The goal of the project is to develop biorational methods for control of pyralid moths that are worldwide pests on stored food products. The insect species in focus are the Mediterranean flour moth, *Ephestia kuehniella*, the Indian meal moth, *Plodia interpunctella*, and the Almond moth, *Ephestia (Cadra) cautella*. *Ephestia kuehniella* and *Ephestia cautella* have the same major pheromone component as *P. interpunctella*, (Z9,E12)-tetradecadienyl acetate and the same additional pheromone component candidates were identified from both *Ephestia kuehniella* and *Ephestia cautella*. We want to explore the possibilities to use pheromone-based methods in combination with other methods for direct insect control. Water proved to be an efficient lure for trapping of male and female *E. cautella*. Dramatic reduction of insect numbers in a chocolate factory followed on mass trapping of *E. cautella* with both water and pheromone-baited traps. Efficient disruption of mating in *P. interpunctella* by synthetic pheromone in MSTRS™ was demonstrated. A selection experiment did not reveal any evidence for evolution of resistance to pheromone-mediated mating disruption. Disruption with ultra-sound also reduced mating success significantly in *P. interpunctella*.

References

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