

Biological Control

BIOLOGICAL PEAR PSYLLA CONTROL IN ORCHARDS TREATED WITH MATING
DISRUPTION AND ORGANOPHOSPHATE INSECTICIDES

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Mating disruption with slow-release pheromone dispensers is used by an increasing number of pear growers in the western United States for control of codling moth. One advantage of this new control method is its selectivity to natural enemies. However, costs of mating disruption are high. Experience has shown that applying reduced rates of pheromone dispensers supplemented by one or two insecticide sprays can reduce costs without sacrificing control. In the absence of registered selective insecticides (e.g., IGRs) for codling moth control, pear growers have been using organophosphate insecticides such as azinphosmethyl (Guthion) and phosmet (Imidan) as supplemental sprays. Another reason why growers include a broad-spectrum spray is to reduce the risk of damage from secondary pests. Although organophosphate insecticides are used sparingly in these programs, their broad-spectrum activity potentially disrupts biological control of pear psylla and other pests, thus compromising the selectivity of the overall pest management program. Field studies were conducted to determine by how much phosmet rates must be reduced to achieve selectivity while still providing supplemental control of key pests (codling moth). Different rates of phosmet were applied to pear orchards under mating disruption to evaluate impact on natural enemy activity, pear psylla and other pests. The response of different natural enemy groups to OP (phosmet, azinphosmethyl) sprays was evaluated in a separate field experiment. The recently registered selective insecticides pyriproxyfen (Esteem), tebufenozide (Confirm), and methoxyfenozide (Intrepid) are potential OP replacements to supplement mating disruption for codling moth control without interfering with the biological control of pear psylla and other secondary pests.