

Mating Disruption/SIR

WALNUT PMA: DEVELOPING A CODLING MOTH MATING DISRUPTION PROGRAM

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The Walnut Pest Management Alliance (PMA) was established with the funding provided by California Department of Pesticide Regulation (CDPR) in 1998 to develop a statewide broad-based demonstration and implementation project designed to encourage adoption of reduced-risk pest management programs in commercial walnuts. The PMA is a cooperative group effort that includes the University of California research and extension, walnut growers and industry, Biologically Integrated Orchard Systems (BIOS), and pest control advisors. In the second year of the Walnut PMA, the program continues to promote reduced-risk products and to improve communication and cooperation among the groups involved.

The primary pest of walnuts is the codling moth, *Cydia pomonella*, and is the focus pest of the Walnut PMA. These efforts attempt to control the economic damage of this pest by implementing reduced-risk practices. The Walnut PMA research project included six early cultivar walnut orchards ranging from Fresno county to Tehama county. Treatment areas were approximately five acres with the exception of the untreated control that was one acre. The treatments consisted of Isomate C+, Isomate C+ and *Trichogramma platneri*, Isomate C+ and chlorpyrifos or Confirm, the grower standard, and the untreated control. The Isomate C+ was applied, at a single application, at a rate of 400 per acre shortly after biofix. *T. platneri* was aerially applied once per week for four weeks during the second generation and once per week for four weeks during third generation at a rate of 200,000 per acre. The grower standard consisted of the growers' normal farming practices which normally includes organophosphate and pyrethroid use. Orchards were monitored intensively using Trécé® Delta traps, nut drop counts, canopy counts after each generation, and harvest samples.

Harvest evaluations showed that the combination of Isomate C+ and Lorsban treatment had the best codling moth control. The second best codling moth control was the grower standard, followed by the Isomate C+ alone, and finally the Isomate C+ and *T. platneri* treatment. These results have confirmed that mating disruption can be used successfully in walnut orchards.

Growers have not readily adopted these reduced-risk alternatives because these practices are perceived as high risk and more expensive than using conventional broad-spectrum insecticides. Reduced-risk programs require multiple years of implementation in order to gain the confidence of commercial walnut growers. The performance of reduced-risk techniques requires a commitment and teamwork so that the long-term effects are accurately studied. Failure to adequately research reduced-risk product may lead to the devastating economical effects of increased pest pressures.