

Thresholds, Monitoring and Sampling

Field Bioassays of Synthetic Sex Pheromones for *Phytocoris* spp. (Hemiptera: Miridae)

R. E. Rice¹ and J. G. Millar²

University of California

¹Kearney Agricultural Center, Parlier, CA

²Department of Entomology, Riverside, CA

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Phytocoris relativus

Prior to the 1996 field bioassays for *Phytocoris relativus*, *Phytocoris* nymphs and adults were collected at Parlier and Kettleman City and sent to Dr. Millar at UC Riverside to confirm the tentative pheromone identifications that he found in late 1995. A series of *Phytocoris*, both *relativus* and *californicus*, in four separate collections was also sent to Dr. G. M. Stonedahl, British Museum of Natural History, London, for confirmation of identification of the two species of adult bugs. The taxonomy of this genus is extremely difficult with only very minor differences in adult morphology resulting in description of distinct and separate species. Consequently, it has been extremely important during the *Phytocoris* bioassay work to correctly identify the individual bugs that have been trapped in the various *relativus* and *californicus* bioassay trials.

Field bioassays for *P. relativus* were initiated at Parlier in plums on April 22 and continued at both Kettleman City and Caruthers in pistachio and almond orchards. The majority of these field trials for *relativus* were terminated on August 19. A seasonal monitoring trial with a standard *P. relativus* pheromone blend is continuing at Parlier and will probably terminate in December.

Included in the *P. relativus* field bioassays in 1996 were isomer identification and confirmation, optimum blend ratios, optimum dose response, and pheromone lure longevity trials. In addition, *P. relativus* was trapped at several locations in the San Joaquin Valley, including Parlier, Kettleman City, Madera, Caruthers, Arvin, Terra Bella, Dinuba, LeGrand, Patterson, and Waterloo. *P. relativus* was collected in pistachio, almond, plum, grape, lemon, persimmon, apple, kiwi, and pyracantha.

Phytocoris californicus

Adults and nymphs of *P. californicus* were collected from a pistachio orchard near Kettleman City, CA, and sent to Dr. Millar at UC Riverside for collection of male and female volatiles and chemical characterization and identification of potential pheromone isomers. Based upon his laboratory work, he then provided initial candidate pheromone blends for *P. californicus*. Field bioassay trials for *P. californicus* commenced on July 15 and continued in the pistachio orchards at Kettleman City through October. These trials have included isomer identification, isomer blend ratios, dose response, and field longevity of pheromone lures. To date *P. californicus* has been collected in significant numbers only in the orchards at Kettleman City.