

This report was in Annual Report binder. Appears to be Interpretive Summary in lieu of Annual Report. No other report is on file.

12TH ANNUAL ALMOND RESEARCH CONFERENCE, DECEMBER 4, 1984, SACRAMENTO

Project No. 84-A5 - Navel Orangeworm, Mite and Insect Research
Sex Pheromone Blend Isolation & Identification

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Personnel: P. Larry Phelan, collaborating with Dr. Martin Barnes (UCR);
Dr. Charles Curtis (USDA Fresno); and Drs. Wendell Roelofs and
Louis Bjostad (Geneva Agricultural Experiment Station, New York)

Objectives: (1) To isolate and identify the secondary pheromone components essential for optimal male sex pheromone response; (2) through extensive field testing, develop the pheromone blend formulation eliciting optimal trap catch of males.

Interpretive Summary:

During the past year, more information was obtained on the second area of activity from navel orangeworm sex pheromone gland extracts. Research on this project has indicated consistently that the most important secondary chemicals for increasing attraction of male navel orangeworm moths are one or more hydrocarbons. In conjunction with Drs. Lou Bjostad and Wendell Roelofs at the N.Y. St. Ag. Experiment Station in Geneva, N.Y., we isolated and identified two candidate compounds, branched hydrocarbons, that were from a fraction that significantly increased the percentage of upwind flights to the source. Unfortunately, when the synthetic compounds were tested, they exhibited no behavioral activity. Consequently, we went back and re-examined the activity in relation to other major classes of hydrocarbons. In the meantime, we established an additional collaboration with another pheromone research group headed by Dr. Jerry Klun of the U.S.D.A in Beltsville, Maryland. He reported to us that although using a different approach, his results after several years on this problem are in close agreement with ours. We have arranged to send him extract from our female moths as well as the females themselves. In addition, we are coordinating our techniques so that our efforts will be easily interpretable. Finally, a leading pheromone researcher from Shanghai, China, Dr. Wen-gu Li, has joined our lab at Riverside as a visiting scientist for one year. We immediately involved him in the effort to identify these difficult secondary sex pheromone components, and we look forward to his continued contributions to this project.