19th ANNUAL ALMOND RESEARCH CONFERENCE, DECEMBER 3, 1991

Project No. 91-V3 - The Detection of the Almond Leaf Scorch Bacteria

Project Leaders: Dr. Doug Gubler
Dr. D.A. Golino
USDA/ARS
Department of Plant Pathology
University of California
Davis, Ca 95616
(916) 752-4568

Objectives: Short term: 1) Optimize an ELISA procedure for the detection of *Xylella fastidiosa* in almond. 2) Using ELISA, culturing, histological stains and the observation of symptoms, determine the best combination of detection techniques for each time of year and tissue type. 3) Study the distribution of the bacteria in almond trees from the time of inoculation through the development of disease in both experimental and field conditions.

Long term: 1) Determine which vectors are responsible for spread of almond leaf scorch. Are these vectors present in areas where spread does not occur? If so, how does the ecology vary to prevent disease. If not, can the vectors be controlled? 2) Determine whether strain differences of the bacteria are important in disease spread. Can non-pathogenic strains be used for control? 3) Determine the length of time between vector feeding until disease develops. Can intervention prevent disease if detected early?

Interpretive Summary: In 1991, effort were continued to determine the natural vectors of almond leaf scorch. Sticky traps were changed every two weeks; a vacuum device was used to trap live insects. Specimens of two potential vector candidates were trapped on the card, the willow sharpshooter Graphacephala confluens and the grass feeder Draeculacephala minerva. These were found in low numbers. The vacuum trapping resulted in collection of over 100 leafhoppers of the genus Idiocerus about which little is known. The Idiocerus leafhoppers were fed on test plant to ascertain if they were inoculative for the ALS agent.