REGULATION OF BIOTECHNOLOGY APPLIED TO AGRICULTURE

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ABSTRACT
Regulatory agencies are faced with an increasing number of permit applications using biotechnology to solve agricultural problems. Newer innovations include engineered biopesticides, transgenic and paratransgenic insects such as the symbiotic control project aimed at controlling Pierce's disease. Review panels point to the regulatory burden as one reason not to fund new technology. The results of a Workshop held 7-9 November 2006 in Washington DC to address these and other regulatory issues will be described.

Section 5:
Crop Biology and Disease Epidemiology

ROLE OF ALFALFA IN THE EPIDEMIOLOGY OF *XYLELLA FASTIDIOSA* IN CALIFORNIA

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Reporting Period:
The results reported here are from work conducted July 2006 to September 2006.

ABSTRACT
Alfalfa occurs widely throughout the Central Valley, often adjacent to grape and other plants susceptible to *Xylella fastidiosa (Xf)*. A previous epidemic of Pierce's disease in the Central Valley was associated with migration of infective insects from alfalfa fields to vineyards. We will determine the importance of alfalfa as a host of different strains of *Xf* and its role as a source of the pathogen for vector transmission. These studies provide basic information on these interactions, which would be incorporated in disease management strategies that include alfalfa as a host of *Xf* and sharpshooter vectors.

INTRODUCTION
The role of alfalfa in the maintenance and spread of *Xylella fastidiosa (Xf)* in California is poorly understood, despite the fact that the epidemic of Pierce's disease (PD) in the Central Valley during the 1940s was linked to alfalfa fields. We will conduct studies aimed to understand the importance of alfalfa in the epidemiology of *Xf* in California in relation to grape and almond hosts, and native and invasive insect vectors. We will conduct transmission experiments with different *Xf* strains and different vector species to determine what factors are of important in the spread of this bacterium among different host plants. Recent research on *Xf* has also examined its biology within alfalfa plants. Our work will also study the movement and multiplication of *Xf* in alfalfa and the potential role of this crop as a reservoir of *Xf* for vector acquisition. Information gathered in this project will lead to determination of the importance of alfalfa in the epidemiology of *Xf*.

OBJECTIVES
1. Determine the fate and role of *Xf* in alfalfa.
2. Determine the transmission efficiency of *Xf* strains to/from alfalfa to grape and almond by three sharpshooter vector species.

RESULTS
This project is being initiated. We have no results to report at this point.

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