

Highlights and Impacts of April 2005 – March 2006 Projects Funded by the Texas Pierce's Disease Research and Education Project

Project Investigator's Name: Isabelle Lauzière

Project Title: Entomology Research on Pierce's Disease of Grape in Texas

Significant Accomplishment	Impact on Texas Pierce's Disease Management
1. Relocation of program human and financial resources under TAES-Stephenville	Time and effort consuming but strengthened the entomology research group and increased the coordination of activities between Fredericksburg and Stephenville. Collaborative work was also initiated between our 2 stations and the University of Texas at Tyler with B. Bextine
2. Collection of biological materials and establishment of insect colonies (xylem sap feeding vectors). First steps at developing rearing protocols for some of these vectors. Attempts failed for <i>C. xanthocephala</i> so far. Many difficulties encountered under current greenhouse conditions (rain inside the greenhouses and extreme heat) led to the loss of the <i>H. coagulata</i> colony twice and subsequently, all parasitoid colonies. Insects collected thereafter did not adapt to the environmental conditions and entered reproductive diapause	Develop rearing protocols of importance for leafhopper research and biological control of xylem feeding leafhoppers transmitting Pierce's disease. Prepare to provide insects free of <i>X. fastidiosa</i> needed by other program researchers. Stable colonies are critical for biology studies at this location as well as Tyler and Stephenville. Constant attempts are being made to prevent any more losses from happening: after onset of oviposition next spring, the insect must reach Generation 4 or 5 prior to onset of fall weather conditions
3. Processed field data April 2004 - May 2005. Completed all data entry and most statistical analyses. Prepared reports, posters and slides for conferences. Initiated manuscript redaction	Determine diversity and abundance of xylem sap feeding Hemiptera and preliminary observations on seasonality of 3 dominant species in their natural habitat. Information used as a basis to develop field research objectives for FY 2006
4. Initiated seasonal observations of leafhopper/spittlebug reproductive biologies from field collected materials using different collection techniques. Egg masses collected on different host plants resulted in parasitoid emergence. Associated parasitoids were identified and a repertoire developed with information to date	Provide an understanding of the biology of sharpshooters in their natural habitat and factors affecting their populations. Seven parasitoids identified locally, 2 new species unexpected
5. Continued technical support and assistance to APHIS personnel for leafhopper field sampling 2005-2006 and support in the establishment of the APHIS database.	Facilitate survey work across Texas
Source and Amount of Funds Leveraging Current Pierces Disease Project:	
1. Loan of needed research equipment secured through TAMU-TCE colleagues saved the program approximately \$2000	

2. Pending funding proposal written with F. Mitchell and B. Bextine for research on a Frito-Lay *X. fastidiosa* problem in potato
- 3.

Publications/Presentations Documenting Research/Education Outputs (please provide full citations for publications; and the title, audience, location, and date of each presentation):

1. CDFA, UC Riverside and USDA-APHIS visited the Fredericksburg existing research facility. August 30, 2005
2. A. Hassell attended the Entomology Science Conference and met with colleagues on site. TAMU. College Station. October 26-28, 2005
3. Xylem sap feeding Hemiptera of the Edwards Plateau, Texas: identification, abundance, seasonality, and disease vectoring potential. California Department of Agriculture Pierce's Disease Research Symposium. San Diego. December 5-7, 2005
4. Abundance and seasonality of xylem feeding leafhoppers in vineyards of the Edwards Plateau, Texas. Entomological Society of America. Fort Lauderdale. December 15-18, 2005
5. Diversity and seasonal abundance of xylem sap feeding Hemiptera in vineyards and natural habitats of central Texas. Data analyses well underway. Manuscript in preparation.
6. Mitchell, Lauzière, Bextine. Insect vectors of Pierce's disease in Texas. PD feature submitted December 01, 2005

Please email to KMHeinz@tamu.edu by end of business on January 2, 2006.