

Final Progress Reports due April 14, 2006

USDA APHIS – Texas Pierce’s Disease Research and Education Program

Title of project: Texas Research & Education Program to Combat Pierce's Disease

Principal investigator: J.S. Kamas

Major accomplishments to date (April 1, 2005 through March 31, 2006):

Genetic Diversity of Xylella- Collected specimens of grape and other plant material infected with *Xylella fastidiosa*. Colonies were plated by M. Black & L. Morano. Colonies were analyzed by Morano to discern genetic diversity.

- 1.) Collected grape tissue from visually PD positive grapevines from across the state.
- 2.) Sampled sap at budburst from wild grapevines from across the Texas Gulf Coast
- 3.) Identified suspected *X.f* infected peach for 06 season sampling

Hickory Soils Experiment- In conjunction with Mark Black, began an experiment to determine the impact of the granitic soils common to the Hickory Soils and Aquifer area in the northern part of the Texas Hill Country.

- 1.) Established potted community of 'Chardonnay' grapevines in three media profiles (granitic, calcitic and commercial soil-less mix).
- 2.) Assist in the set up of an appropriate growing conditions and location in order to eliminate variability from other environmental influences.
- 3.) Begin in the inoculation of potted grapevines

Grape Rootstock Trial- In conjunction with M. Black, established a grape rootstock trial to determine the individual tolerance of common stocks to Pierce's disease.

- 1.) Assisted in vine procurement
- 2.) Assisted in vineyard design, planting and irrigation system installation
- 3.) Trained vines during the growing season and pruning this past dormant season.

Texas Vineyard Survey- In conjunction with Ed Hellman and Laura Stretch, continued collecting data for the Texas Statewide Vineyard Survey.

- 1.) Participated in Hardware/software training provided by Western Region APHIS personnel
- 2.) Assisted in troubleshooting software problems encountered in the field
3. Directed data acquisition in the Texas Hill Country

Pierce's Disease Education Program- Advised experienced, new and prospective growers on the best approach to mitigating the risk of Pierce's disease. Spoke at numerous educational events in Texas, and other states the management of Pierce's disease and on the Texas PD research program. Took the lead on writing and publishing Texas PD Notes extension publication.

1. Answered a multitude of inquiries from prospective growers interested in growing grapes in Texas. I offered insight into proper site and variety

- selection based on where they intended to plant.
2. Worked with existing grape growers across Texas in order to manage vectors and disease incidence.
 3. Presented vector management options at the 2005 Hill Country Grape Growers' Field Day in Spicewood.
 - 4.) Delivered an invited presentation on the Hill Country Wine Industry and the Texas PD Program at the 2005 Extension Specialist's Retreat July 25th at Becker Vineyards near Stonewall.
 - 5.) Presented a talk on "Best Management Practices to Avoid and Manage Pierce's Disease" at the 2005 Texas Wine & Grape Growers' Grapecamp.
 - 6.) Organized and delivered the Pierce's Disease module at the TAMU/TTU In-depth Viticulture workshop in Junction
 - 7.) Delivered an invited presentation entitled "Pierce's Disease of Grape Understand the Disease, Mitigate the Risk- The Limiting Factor to the Production of High Quality Wine Grapes in the Gulf Coast" at the Deep South Fruit & Vegetable Conference in Mobile, Alabama
 - 8.) Gave a presentation at the Mid-America Wine & Grape Growers Annual Conference in Missouri entitled "Pierce's Disease Management in Texas Current Research & Practical Approaches for Control".
 - 9.) Continued planning and site preparation for the establishment of a research vineyard for Pierce's disease work in Gillespie county.
 - 10.) Provided leadership for the publication of a semi-monthly newsletter highlighting applied research from the Texas PD Program and providing guidance on management practices for Pierce's disease in commercial vineyards.

Goals achieved:

- 1.) Collected plant specimens infected with *Xylella fastidiosa* for comparative DNA analysis.
- 2.) Began investigations on the impact of soil type on the survival of *Xylella fastidiosa* en vivo.
- 3.) Established a field trial on the growth and survival of commercial grape rootstocks planted in a high Pierce's disease pressure location.
- 4.) Continued collecting relevant data for inclusion in the State-wide Vineyard Survey
- 5.) Through phone, site, office and email consultations, advised prospective growers on the mitigation of PD risk through wise vineyard site selection.
- 6.) Advised existing grape growers on day-to-day management strategies to minimize the impact of Pierce's disease on their commercial grape operations.
- 7.) Delivered formal conference presentations to extend the knowledge gained from the Texas Pierce's Disease Research & Education Program to growers throughout Texas and other areas with PD risk.
- 8.) Participated in the planning of a research vineyard to enable field studies on Pierce's disease.

Relevance to the USDA APHIS – Texas Pierce's Disease Research and Education Program:

- * Enhanced understanding genetic diversity of *Xylella fastidiosa*,
- * Began understanding whether specific soil types have an impact on the survival of *Xylella fastidiosa*. This knowledge could lead to the identification of areas with little or no PD risk.
- * Began a trial that could identify PD tolerance among commercial grape rootstocks.

- * Continued data collection for the statewide vineyard survey could assist in identifying PD risk factors and quantify the economic impact of the disease on the Texas Grape Industry.
- * Offered advice to prospective and existing growers by extending information learned by the Texas PD Research Program
- * Delivered presentations on PD research and practical management guidelines at grower and professional meetings in Texas, Alabama and Missouri.

Publications submitted/published; presentations/posters presented at national technical meetings/conferences:

- * Reported ongoing PD research activities in Texas to the SERA IEG-14 Meeting (Extension grape personnel from the Southeast) in Missouri, September, 2005
- * M.C. Black, J.S. Kamas. A. M. Sanchez, J.L. Davis and P.S. Adams. 2005 Aspects of Pierce's Disease Risk in Texas: I. Screen-house inoculations of wine grape grown in soils from vineyards with and without Pierce's disease histories. II. Field Evaluations of grape rootstocks most commonly used in Texas vineyards. III. *Xylella fastidiosa* tests on native Vitis species. Proceedings of Pierce's Disease Research Symposium. San Diego, CA. 5-7 Dec.05.
- *Presentation- "Pierce's Disease of Grape Understand the Disease, Mitigate the Risk- The Limiting Factor to the Production of High Quality Wine Grapes in the Gulf Coast". 2005 Deep South Fruit & Vegetable Conference- Mobile, Alabama.
- *Presentation- "Pierce's Disease Management in Texas Current Research & Practical Approaches for Control". 2006 Mid-America Wine & Grape Growers Annual Conference, Lake of the Ozarks, Missouri.
- *Texas PD Notes. Volume 1, Issue 1, September, 2005
- *Texas PD Notes. Volume 1, Issue 2, November, 2005
- *Texas PD Notes. Volume 2, Issue 1, January, 2006
- *Texas PD Notes. Volume 2, Issue 2, March, 2006

Signature:

Date:

If prepared by someone other than the Principal Investigator, please provide name and contact information: