

## Introduction



Growers and Colleagues, This new publication, Texas PD Notes is designed to increase information transfer and familiarity with the nature and scope of the Texas Pierce's Disease Research and Education Project. As many of you may know, the project is a cooperative agreement between USDA APHIS and Texas A&M University that funds basic and applied research on the pathogen/vector/host relationship.

*Xylella fastidiosa*, the causal agent of Pierce's disease is indigenous to the Gulf Coast region and research conducted



in Texas has national as well as local significance.

The Texas Pierce's Disease Research and Education Project is a multi-institutional effort. While funding is managed through the Texas A&M University System, Project members have a broad range of

institutional affiliations including Texas Cooperative Extension, Texas Agricultural Experiment Station, Texas Tech, University of Houston-Downtown and Texas A&M International.

In each issue, the editors will strive to offer timely management guidelines, information on current newsworthy events and offer insight into specific projects and research efforts. Grower input on the content of this newsletter is welcomed. Feel free to contact any of the editors to discuss or suggest content. -JSK

**TEXAS PD NOTES is produced and edited by:**

- ◆ Mark Black, Extension Plant Pathologist, Uvalde TX  
m-black@tamu.edu
- ◆ Ed Hellman, Extension Viticulturist, Lubbock, TX  
e-hellman@tamu.edu
- ◆ Jim Kamas, Extension Fruit Specialist, Fredericksburg, TX  
j-kamas@tamu.edu

*Additional Articles Contributed by Members of the Texas Pierce's Disease Research & Education Project*

## Demonstration Vineyard Planned for Fredericksburg

Over the course of the past six months, Gillespie County and the Texas A&M University System have negotiated and signed a lease for a four acre parcel of land that will house the future insect rearing greenhouses, laboratory facilities, and demonstration vineyards.

The PD research facility will be located at the Gillespie County Industrial Park adjacent to the

airport. While the research facility is in the developmental phase, pre-plant preparations are underway for the vineyard site and planting is scheduled for the spring of 2006.



The purpose of the vine-

yard is to provide an opportunity to demonstrate best management practices designed to manage the risk of Pierce's disease.

Varieties scheduled for planting include 'Viognier', 'Semillion', 'Shiraz', 'Tempranillo', 'Sangiovese' and 'Grenache'. All scions will be requested on 5BB rootstock for Cotton Root Rot tolerance. -JSK

## Inside this issue:

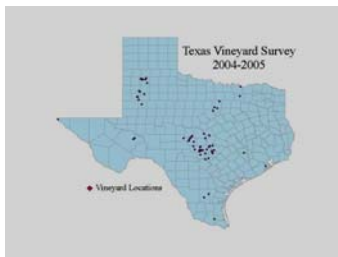
<i>Introduction</i>	1
<i>Vineyard Planned for Fredericksburg</i>	1
<i>Feature Article- Statenide Vineyard Survey in Full Swing</i>	2
<i>CDEA &amp; APHIS PD Workers Tour Texas</i>	2
<i>Disease Diagnosis is the First Step in Management</i>	3
<i>Diagnostics &amp; Management of Infected Vines</i>	3

***Feature Story Statewide Vineyard Survey in Full******Swing— Ed Hellman***

The Texas vineyard survey plans to visit every commercial vineyard in the State that is growing at least 1 acre of grapes. One of the objectives is to collect geographic coordinates with a global positioning system (GPS) so that each vineyard can be accurately located on a map. The survey also collects information about the vineyard itself, selected production practices, and surrounding vegetation. To date, the project has surveyed more than 75 vineyards across the state (Figure 1) and we thank these producers for their cooperation. There are many more vineyards to be surveyed for this project so if you have not yet been visited by Penny Adams or Jacy Lewis, expect a call and a visit sometime soon. The survey is scheduled to be completed by the end of the 2006 season.

For each vineyard, the survey records grape acreage by variety, type of cover crop, extent of weed control, use of the insecticide imidicloprid, prox-

imity to bodies of water, and the type of surrounding vegetation. Observations also are made looking for symptoms of Pierce's disease, glassy-winged sharpshooters, and potential supplemental hosts for *Xylella fastidiosa*. Survey data is incorporated into a geographic information system (GIS) that associates the vineyard's data with its accurate location on a map.



In addition to the vineyard location and survey data, the GIS system incorporates other preexisting datasets that characterize the climate, soils, topography, and vegetation of Texas. Each of these datasets can be presented in map form with vineyard attributes overlain to look for patterns at a broad landscape level across the State that might suggest potential relationships. For

example, we could display the locations of vineyards that are known to have Pierce's disease onto a map showing the geographic distribution of the average number of days in January with freezing temperatures. Perhaps this would demonstrate a possible relationship between winter cold and the distribution of Pierce's disease in Texas. Beyond just visualization, spatial analysis statistical procedures can be applied to discover potential relationships between PD or sharpshooters and vineyard or geophysical attributes.

The PD Program's entomologists will also be able to add their insect trapping data to the GIS system to help them study sharpshooter biology and movements at the landscape level in relation to vineyards and geophysical factors. Completion of the GIS and spatial analysis may give us new insights into Pierce's disease and the glassy-winged sharpshooter that ultimately could lead to improved management recommendations and reduced losses from PD.

Beyond just

visualization, spatial

analysis statistical

procedures can be

applied to discover

potential

relationships

between PD or

sharpshooters and

vineyard or

geophysical

attributes.

***CDFA & APHIS PD Workers Tour Texas***

This past August, several key members of the PD Management Team from the California Department of Food & Agriculture and the Animal Plant Health Inspection Service toured several areas of the state where the Texas PD effort is ongoing. Beth Stone-Smith, GWSS Program Director, David Morgan, CDFA

Bio-control Specialist, Bob Wynn, CDFA P.D. Director along with Gary Carpenter, Joe Davidson and Bobby Guerra from the APHIS management team participated in the visit.

The Fredericksburg insect rearing facility, several Hill Country vineyards and wineries, meetings with TDA and A&M Administrators and the

Agriculture Research Service bio-control lab in Weslaco were all points of interest for the group.

All felt that work in California and Texas complimented each other and that continuing the exchange of information is the best way to make advancements in the common goal— Control of Pierce's Disease. *JSK*



## Disease Diagnosis is the First Step to Management

The first step in managing Pierce's disease is for growers to acquire the ability to diagnose diseased vines in their vineyards. While laboratory diagnostics are important in verifying suspicions, it is not economically feasible for a grower to run lab tests on every vine suspected of being infected.

The time from infection to expression of symptoms varies considerably between varieties. Leaf scorch is the most typical first symptom of PD infection, but again varieties vary in how scorch

specifically appears.

As vines begin to decline from Pierce's disease, symptoms progress to include leaf abscission with the retention of petioles. Other factors can cause this phenomenon, so growers should use caution in considering this symptom to be definitive of PD infection.

Uneven periderm formation or the appearance of green islands at the nodes of canes is a further expression of vine decline after infection. As autumn progresses, these islands disappear, but during

late July and August, these symptoms can be quite diagnostic of infection.

Vines in the later phase of decline commonly exhibit the collapse of clusters as maturity approaches. In mild or wet summers, symptoms are commonly delayed until August, but in hot dry summers, symptom development may begin as early as June.

With cluster collapse commonly comes the death of canes or cordons. At this point, imminent vine death should be expected.

## Management of Infected Vines

Before autumn takes its toll on the vineyard canopy, growers with vineyards in PD prone areas should consider removing or at least flagging symptomatic vines for removal at a later time.

Removing infected grapevines is still viewed as an extremely important task in the overall management of Pierce's dis-

ease. Removing inoculum in close proximity to non-infected vines can drastically reduce the rate of disease spread in the coming season. If growers are in doubt of the disease status of vines, verification of infection status can be achieved by submitting samples to the Texas Plant

Disease Diagnostic Lab at Texas A&M University.

For information on ELISA testing of suspected grapevine samples, consult the lab's web page at: <http://plantpathology.tamu.edu/extension/tpddl/tpddlcontact.asp>



One expression of leaf scorch caused by *X. fastidiosa*



Leaf abscission with retained petioles



Uneven periderm formation



Cluster collapse & cordon death

**This publication may contain pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are possible. Questions concerning the legality and/or registration status for pesticide use should be directed to the appropriate Extension Agent / Specialist or state regulatory agency. Read the label before applying any pesticide. The Texas A&M University System and its employees assume no responsibility for the effectiveness or results of any chemical pesticide usage. No endorsements of products are made nor implied.**

Extension programs serve people of all ages regardless of socioeconomic level, race, color, sex, religion, disability or national origin. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.

A member of the Texas A&M University System and its statewide Agriculture Program