

About This Newsletter



Many Thanks to the Texas Wine and Grape Industry for the warm reception given to this semi-monthly newsletter. As the Texas Pierce's Disease Research and Education Program grows and evolves, this newsletter will seek to relay program changes, introduce the researchers and

their projects and relay recent research findings of interest to commercial grape growers in areas at risk to Pierce's disease.

One grower responded to the first issue with the comment that the photos were too small to really see. Since the photos used in this issue are usually fairly high resolution, they should appear clear when blown up to larger size. This is easily

done in Acrobat or Acrobat reader. In the standard toolbar, go to the zoom feature. 400% magnification should make the photos much more viewable.

Inquiries toward published articles, suggestions for future articles or general comments can be made to any of the editors listed on this page. This newsletter is for you, the grower. Let us know what you want to read about!

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

TWGGA Formally Adds P.D. Advisory Board

Prior to this year's annual Grape Camp in Junction, the Board of the Texas Wine & Grape Growers Association voted to officially recognize and adopt the Texas PD Grower Advisory Board.

A motion was made by director Gabe Parker from Homestead Winery, and seconded by Rick Naber from Flat Creek Estate to officially recognize the PD board as the single unified voice of the Texas Wine Industry for the Texas PD Program. The motion

passed unanimously.

TWGGA now sanctions the PD Advisory Board



to speak for the Association on PD program matters and charges the PD Board with up-to-date communication with the Texas Wine & Grape Growers Association.

PD Grower Advisory Board Members include Joy Johnson (Willow

City), chair; Tom Barkley (Tow), Bobby Cox (Lubbock), Les Constable (Alvord), Alphonse Dotson (Voca), Joe Duran (Marathon), Gene Estes (Burlson), Anthony Fasano (Spring Branch), Jim Johnson (Bend), Patrick Johnson (Ft. Davis), Sam Jordan (Art), Rick Naber (Travis Peak) and Jerry Watson (Cat Spring). Growers looking for input or more information are encouraged to contact these grower-representatives.

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Feature Story Rootstock Experiment Investigates Tolerance of Native Species—Jim Kamas

Because native Texas *Vitis* species co-evolved with the Pierce's disease (PD) causal organism *Xylella fastidiosa* (*Xf*), they have prospered because only tolerant individuals survived to reproduce. Through some mechanism, these individuals do not succumb to infection by *Xf* even though they may at times show mild symptoms. Understanding the mechanism and genetic basis of this tolerance may be crucial to creating a solution to PD.

Most of the rootstocks used commercially around the world today are derived from one or more native Texas *Vitis* spp. While these species were used to help overcome phylloxera, nematodes and alkaline soils, these species are all native to areas where PD is endemic. Consequently some level of tolerance to PD is expected among these stocks.

Dr. Peter Cousins, Agriculture Research Service grape rootstock breeder in Geneva NY and Dr. Jiang Lu, viticulturist at Florida A&M initiated a rootstock trial in Tallahassee, Florida in 2001 where PD pressure is intense. Root-

stocks were grafted with 'Chardonnay' as a common scion and un-grafted vines were also included in the trial. There were no differences among expression of symptoms among plants and all quickly showed symptoms in 2001 and by 2002, many had succumbed to the pathogen.

That said, a central Texas vineyard with a long history of PD pressure was chosen as the site of the Texas rootstock study. While vinifera vines have rapidly become symptomatic at this site a lone un-grafted SO₄ vine has survived for many years. Although mild leaf scorch can be observed on this vine, the large trunk diameter and canopy indicate that this vine is in good health. Other un-grafted rootstocks in the Hill Country have also survived while sus-



Surviving SO₄ vine at PD-prone vineyard

ceptible varieties have died in the same planting.

The Texas rootstock trial was established in the spring and summer of 2005. Stocks included in this planting include: 1103P (*V. berlandieri* x *rupestris*) 1616C (*V. longii* x *riparia*) 5C (*V. berlandieri* x *riparia*) Champanel (*V. champinii*) Harmony ([*V. solinis* x Othello] x Dogridge) Freedom ([*V. solinis* x Othello] x Dogridge) 110R (*V. berlandieri* x *rupestris*) 5BB (*V. berlandieri* x *riparia*) Dog Ridge (*V. champinii*) Salt Creek (*V. champinii*) S04 (*V. berlandieri* x *riparia*)

This replicated trial has the tolerant scion 'Black Spanish' (own-rooted) as barrier vines. Growth and symptom development will be monitored over the next few seasons to compare tolerance to *Xylella fastidiosa*.

This project is a collaborative effort between Mark Black and Jim Kamas. This project could not be conducted without the capable field assistance from Penny Adams, Bud Davis and Alfred Sanchez.



Texas Rootstock Trial



Penny Adams installs irrigation emitter in Hill Country RS trial



Texas Pierce's Disease Research and Education Program

Were on the web!

<http://piercesdisease.tamu.edu>

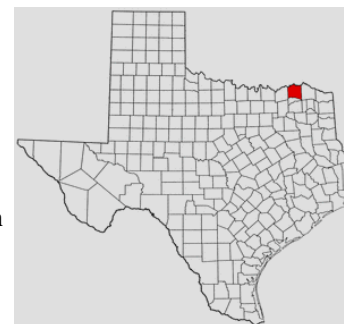
Pierce's Disease Confirmed on Red River

Over the course of the last summer, a devastating Pierce's disease outbreak was confirmed in a four acre vineyard in northern Lamar county approximately eleven miles south of the Red River. This diagnosis constitutes the most northerly confirmed case of Pierce's disease in the

state .

While PD is believed to be an occasional problem in northeast Texas and southwestern Arkansas, the incidence of this disease was much higher than expected. Conventional wisdom dictates that north of Texas Highway 82, PD is not a

significant problem. It is estimated that at least 1000 vines in this planting were infected. While sharpshooter egg-masses were observed on adjacent ornamental vegetation, late summer sticky trap surveys collected no sharpshooter adults. Investigations at this site will continue in 2006.



Lamar County, Texas

Supplemental plant hosts of *Xylella fastidiosa*- Mark Black

Starting in 2003, we searched for *Xylella fastidiosa* (*Xf*) in weeds and woody plants at four central Texas vineyards. One of the two “non-PD” vineyards had their first outbreak in 2005.

We sent our *Xf* isolates to other laboratories for genetic analysis. So far, most grape isolates are like grape isolates from California, and most weed isolates are unlike grape isolates. However, some *Xf* in some weeds may be the same as that in grapes.

Only two plant families are implicated in Texas wine grape PD so far: Vitaceae (grape family) and Asteraceae (composite family). *Xf* in trees and woody ornamentals seem unrelated to grape PD. Three weed species with *Xf* were found at all four vineyards [*Ratibida columnifera*, Mexican hat; *Ambrosia psilostachya*, western ragweed; *Symphotrichum divaricatum*, hierba del marrano (slim aster)]. Recovery rate of *Xf* isolates from these species is low, and we are less concerned about *Xf* in these three weeds. When we do get an isolate to grow, the colonies when present, are usually smaller and slower

growing in culture than typical isolates from wine grape.

Three weed host species were found only at the two vineyards with long PD histories [*Ambrosia trifida*, giant ragweed; *Helianthus annuus*, common sunflower; *Iva annua*, seacoast sumpweed]. Glassy winged sharpshooters are frequently seen on giant ragweed and common sunflower. We propose these three as indicator species for PD risk. Seeds of giant ragweed and common sunflower may be spread on highway mowers.

We did not isolate *Xf* from *Vitis mustangensis*, mustang grape; *V. cinerea* var. *helleri* (syn. *V. berlandieri*), winter grape; and *V. vulpina*, frost (chicken) grape in central Texas in 2003-04. However, in 2005, there were two *Xf* finds in these native grapes.

An old vineyard in south Texas with PD had grafted an infected PD-tolerant variety (*V. aestivalis*) on native mustang grape. The experiment was abandoned but the mustang roots

refused to die, even with annual cut back. Previous mustang tests were all negative, but these mustang leaves with PD-symptoms were positive, and we have *Xf* isolates from them. Mustang grape was infected through the graft or insect inoculation was efficient when inter-planted with vines of a tolerant variety teeming with *Xf* bacteria.

The other native grape infected with *Xf* in 2005 was *V. vulpina*. We found this population late in 2004 in Llano County and in 2005, we confirmed *Xf*.

Isolates of *Xf* from *V. mustangensis* and *V. vulpina* behave like grape isolates in the lab, and we have sent them out for genetic characterization.

Monocot species (grass, sedge, rush, iris, etc.) have been clean in tests to date, and may be candidates for plant cover within and near vineyards at risk for PD.

Lisa Morano, Blake Bextine, and Danel Vickerman provided genetic tests on our isolates.



Field crew samples native vegetation proximal to survey vineyards



Giant ragweed, a proposed indicator of PD risk



Dr. Mark Black secures a sample for laboratory analysis

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