

Research in Review

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Pierce's Disease Program Efforts Important to Texas Wine Industry

MARBLE FALLS—A collaborative effort between a federal and state agency, several universities, and Texas and California grape producers is addressing the greatest threat to the Texas wine industry.

On May 21, 2007, more than 40 scientists, viticulture experts, wine-grape growers, and winery owners met at Texas Tech University at Highland Lakes in Marble Falls for the Texas Pierce's Disease Research and Education Program Roundtable.

"Pierce's disease is by far the most serious problem wine-grape growers in and outside of Texas are facing," said **James Supak** of the Texas Agricultural Experiment Station, the program's coordinator. "The thrust of the program, which is now entering its fifth year, is to conduct research and education efforts on the disease and get input on where to direct our efforts in the future."

This year's roundtable review included presenters from the Experiment Station, Texas Cooperative Extension, Texas Tech University, University of Texas–Tyler and University of Houston–Downtown. Experts in molecular biology, plant pathology, entomology, and other disciplines provided updates on Pierce's disease research and educational outreach.

Many wine industry representatives attending the roundtable discussion belong to the Texas Pierce's Disease Growers' Advisory Board. The advisory board consists of 13 team members from wine-grape growing areas throughout the state, said **Joy Johnson**, board chair.

"This program provides us with important information for understanding and controlling Pierce's disease," said Johnson, co-owner of the Granite Hill vineyard. "Over the past four years, we've gone from just identifying the glassy-winged sharpshooter as a major disease vector to finding concrete ways to control or mitigate the disease."

Research and educational efforts center around host plants, disease movement, transmission, and detection and control, program coordinators said.

Topics covered at this year's program included how the disease is spread, current control methods, possible biological controls, genetic diversity in disease bacterium, and the role of root stock selection and environmental factors in reducing infection risk.

"Texas is the fifth-largest wine-producing state, and new vineyards are being planted all the time," said **Dr. Mark Hussey**, associate director of programs for the Experiment Station. "It's important for wine-grape growers to know more about what organisms might be vectors for the disease, the life cycle of the disease and how it might be transferred."

The state's wine industry has a \$1 billion economic impact, according to estimates by the Texas Wine and Grape Growers Association. The organization also estimates the state has about 3,700 acres of family-owned vineyard land.

Pierce's disease, which has caused millions of dollars in losses to the Texas wine industry, is caused by the *xylella fastidiosa* bacterium, said **Jim Kamas**, an Extension

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PIERCE'S SYMPTOMS

Pierce's disease is considered by viticulture experts to be the single greatest threat to susceptible grape cultivars in Texas. The disease, caused by the xylella fastidiosa bacterium and transmitted by insects known as glassy-winged sharpshooters, has cost the Texas wine industry millions of dollars. Symptoms of Pierce's disease include leaf scorch, blackened, shriveled fruit, cluster collapse, and leaf drop.



fruit specialist based in Fredericksburg. And vineyard survival is dependent on numerous factors, including grape variety, weed control, plant stress, and insect vector activity.

"Problems with the disease have escalated over the past years, in part due to a series of warm winters which helped increase spread and winter survival rates of the primary disease vectors," Kamas said.

But the spread of the disease in many parts of the state may be less this year due to colder late-season temperatures which may have reduced the population of insects known to be vectors for the disease, he said. And while there is no known "cure" for the Pierce's disease, grape growers can still mitigate the risk and control it.

Kamas will direct efforts at the new experimental vineyard located next to the recently constructed Texas Pierce's Disease Research and Extension Program facility in Fredericksburg, which is scheduled for its official opening on June 14.

"We have surveyed many areas of the state and have a good fix on the potential carriers of the disease," said **Isabelle Lauziere**, a research entomologist with the Experiment Station in Fredericksburg. "Our future research will probably focus even more on the relationship between these insect carriers and the host plants, trying to determine exactly how they transmit the (infecting) bacterium into the vineyard."

"To help protect the rural communities and help create more jobs in the state, not only in the wine-producing industry but also the associated tourism industry, we need to do all we can to manage and control this disease," said **Dr. Ron Lacewell**, assistant vice chancellor for federal relations at Texas A&M. "It's similar to other important agricultural efforts in the past, like those toward boll weevil and screwworm eradication."

"What we're getting—and what we need more of from this research—is information on how to inoculate against the disease, and how weed control and possibly certain changes in environmental conditions can reduce its spread," said **Rick Naber**, advisory board member and Flat Creek Estates Winery owner.

Along with attending the roundtable, Naber hosted the fourth annual Pierce's Disease Research Symposium at his winery on May 22, 2007.

"The Pierce's disease research efforts really complement other viticulture education programs through Texas Cooperative Extension," said **Dr. Roland Smith**, an Extension program leader who shares Pierce's disease project oversight with Hussey. "With knowledge gained from this program and other applied research discoveries, we are able to offer best management practices to Texas growers to address risk and improve production and grape quality."

Educational programs in viticulture are being conducted in large part through four Extension viticulturists located in different wine-grape-producing areas of the state, Smith said. These positions are funded through a grant from the Texas Department of Agriculture from money obtained from the Texas wine-grape industry.

Funding for the Texas Pierce's Disease Research and Education Program comes from the U.S. Department of Agriculture's Animal and Plant Health Inspection Service, he added.

"Those groups collaborating in the Pierce's program, as well as those who support it financially, have already seen good progress in detecting and managing the disease," Smith said. "Assuming the USDA funding continues, we're optimistic that future discoveries would allow Texas and California grape producers to avoid the current devastation caused by this disease."

More information on the Pierce's disease research and education program can be found at <http://piercesdisease.tamu.edu>.

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