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Defending California from the Grapevine-loving Spotted Lanternfly

With the spotted lanternfly continuing to spread in the northeast and mid-Atlantic regions, the agriculture industry, government, researchers, and the public are coming together to fight back. Action priorities at the federal and state levels include surveying, trapping, research, predictive modeling, and outreach.



SLF egg masses laid on vineyard trellis equipment. Photo credit: Heather Leach.

egg mass during routine air cargo and border protection station inspections since 2019, annual statewide surveys and trapping have not detected any established infestations in California. During the 2021 survey, a total of 576 high-risk sites across the state were searched August through October 2021. CDFA is focusing its efforts on research, keeping the pest out of the state, and creating a rapid response action plan in case the pest is found in the state.

“We want to have the infrastructure in place to rapidly respond and eradicate the spotted lanternfly, should it be found alive in California,” said CDFA Secretary Karen Ross. “Experience has taught us how important it is to consult with experts around the nation and the globe to inform our actions and to give us confidence that the pathways we’re pursuing will ultimately be successful.”

California established a state exterior quarantine in July 2021, prohibiting the entry of the SLF, and placing restrictions on material from any infested area that could harbor the pest. Read more about the quarantine at bit.ly/SLFquarantine.

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PD/GWSS Board Welcomes New Research Coordinator

CDFA has taken the following additional proactive steps, including:

- Designating SLF as an A-rated pest, which means a pest determined to pose a significant risk of economic or environmental detriment and either not known to be established in California or present but currently or potentially in the future under official control, thus allowing the state to eradicate or successfully contain an infestation;
- Providing training to county regulatory staff through CDFA's Pest Prevention University;
- Sending advisories to state and county staff;
- Conducting canine inspections in parcel facilities;
- Participating in the national SLF Summit and other coordination meetings;
- Creating a Science Advisory Panel to inform development of an SLF action plan;
- Creating a training module for UC Master Gardeners;
- Conducting host specificity testing;
- Developing risk-based maps and models;
- Conducting research on suitability of specialty crops and biological control



SPOT THE SPOTTED LANTERNFLY?

CDFA Pest Hotline: 1-800-491-1899

Report online: cdfa.ca.gov/plant/reportapest/

Learn more: cdfa.ca.gov/pdcp/slf

Snag it. Snap it. Report it.



The PD/GWSS Board created a communications toolkit to help the winegrape industry and others learn what the SLF looks like in its various

life stages and what to do if people spot one. The toolkit is available online at bit.ly/SLFtools. To request printed material or digital files, contact the Pierce's Disease Control Program at pdcpinfo@cdfa.ca.gov or (916) 900-5024.

New Glassy-Winged Sharpshooter Infestation in Solano County

An infestation of the glassy-winged sharpshooter (GWSS) has been discovered in a residential area of Vacaville in Solano County. Five adults were found October 1, 2021 in traps set as part of routine trapping to detect the pest. More traps were set in the area, with over 45 more GWSS found, and egg masses were also detected during visual survey of plant material in the area.

Working with the Solano County Agricultural Commissioner's office and others in the area, the Pierce's Disease Control Program continues to survey the area, inform local growers and the broader community, and take steps to eradicate this infestation. Foliar treatments of residential properties took place in fall 2021. Additional systemic applications are planned for late winter/early spring 2022 and additional survey activities are planned for spring 2022.

"It is a testament to our growers' steadfast commitment to the cooperative Pierce's Disease Control Program that we have been able to eradicate 18 localized infestations since the initial detection of this pest in Southern California, and we are working toward the same result here," said CDFA Secretary Karen Ross. "We have conducted two decades of research to develop not only

a mature, proven program and protocols to eradicate these incipient infestations, but also answers to Pierce's disease itself, in the form of disease-resistant grapevines and other approaches that will protect this great industry for decades to come."

Thanks to the continued partnership between federal, state, and local governments to conduct surveying, trapping, nursery stock and bulk citrus inspections, treatments, biological control, and area-wide management programs, GWSS infestations have mostly been contained to the southern San Joaquin Valley and Southern California. Infestations occasionally occur in other parts of the state, and all have been successfully eradicated. This new infestation in Vacaville is the only current infestation north of the Madera area. Learn more at bit.ly/GWSSmap.

on the RESEARCH FRONT



CALIFORNIA PD/GWSS BOARD

Partnership for Winegrape Pest Solutions



Vine mealybug on a grapevine trunk.

Genomics Based Technology for Identification, Tracking, Insecticide Resistance Surveillance, and Pest Management of Vine Mealybug and Grape Mealybug in Vineyards

Project leader: Lindsey Burbank, U.S. Department of Agriculture – ARS

Continued use of chemical control for pests such as mealybugs is likely to lead to insecticide resistance, so it's important to explore alternative control strategies. This project will expand DNA sequence information for vine mealybug representative of pest populations across California to aid developing a reference genome sequence for grape mealybug. This information will be used to track pest populations, evaluate prevalence of insecticide resistance, and develop new pest control technologies based on novel genetic targets. Learn more at bit.ly/research465.

Progression of Pierce's Disease Symptoms and *Xylella Fastidiosa* (Xf) Colonization of Grapevines Under Field Conditions

Project leader: Rodrigo Almeida, UC Berkeley

The team has the unique opportunity to study the progression of Pierce's disease (PD) in inoculated vines using a 10-year-old vineyard with 13 winegrape cultivars grown under commercially relevant conditions at a UC research station. The team sampled the plants and isolated two *Xylella fastidiosa* (Xf) strains, infected vines with one of two strains, and checked for PD symptoms in late summer. Some varieties showed early disease symptoms in the inoculated canes and disease symptoms varied substantially based on variety. Learn more at bit.ly/research457.



Example of defoliation on an inoculated shoot on Tinta Francisca.



Screenshot of dashboard tracking grower and project team data.

Improved Decision-making for Grapevine Leafroll and Red Blotch Diseases Using Rapid Identification Tools and a Regional Approach to Monitoring and Management

Project leaders: Monica Cooper and Jennifer Rohrs, UC Cooperative Extension

This project is focused on building the industry's capability to rapidly identify diseased vines and improving red blotch disease management through network-based learning. The team is developing decision-support tools, increasing access to actionable information, improving the efficiency of efforts to reduce virus inoculum in commercial vineyards, and reducing knowledge gaps for red blotch disease management. Learn more about the project and see resources and live data at bit.ly/ucce-red-blotch.

PD/GWSS Board Welcomes New Research Coordinator

Continuing its goal of supporting leading research to deliver pest and disease solutions to California winegrape growers, the PD/GWSS Board is pleased to announce that Dr. Kristin Lowe will guide the research program as research coordinator.

Dr. Lowe will focus on a productive and cost-effective research strategy for finding solutions to Pierce's disease, glassy-winged sharpshooter, and other pests and diseases of winegrapes designated for Board funding. She will facilitate the progress and momentum of the Board's research program by directing and supporting current research projects, ensuring new projects align with the Board's research priorities, and making connections to other grapevine pest and disease research in the United States and around the world.

"I want growers to know that the Board's research portfolio is built on a robust review process of research that is relevant to their needs," said Dr. Lowe. "Their assessment dollars are going to the very top ideas and researchers out there to deliver practical solutions to pest and disease problems growers face."

Dr. Lowe has been studying, researching, teaching, and consulting in viticulture for over 20 years. She has a degree in Plant Sciences from Cornell University and a Ph.D. in Genetics, with a focus on grape rootstock genetics and breeding, from the University of California, Davis. Dr. Lowe began her career in the grape and wine industry as a viticulturist and California licensed pest control advisor in Napa and Sonoma counties.

She has worked in vineyards ranging in approach from sustainable to biodynamic, and has consulted with small vineyard owners, large winery corporations, and everything in between on pest management, fertilization, irrigation, viticulture practices, disease diagnostics, and vineyard development plans. She is passionate about working in the interface between viticulture science and practical farming in the pursuit of growing premium quality grapes.

"There have been some major advances and progress made against PD and GWSS, but there's still work to do with other grapevine pests and diseases," said Dr. Lowe. "I want to have those potentially powerful tools available for other viruses as well. I want to ensure those areas of research are coordinated and targeted, with researchers focusing on what growers need."

