Committee Meeting Washington, DC
Assistance to the California Department of Food and Agriculture Pierce's Disease/Glassy-Winged Sharp Shooter Board on Grapevine Viruses and Grapevine Disease

WEDNESDAY, MAY 8, 2024

OPEN SESSION (9:30 – 12:00 PM) – *Public welcome (livestream)*

9:30 **Welcome and introductions; Overview of open session**
Anna Whitfield, Committee Chair

9:40 **Q&A on Grapevine Leafroll Disease (GLD) and its Management in South Africa**
Gerhard Pietersen, Patho Solutions; Committee

The committee asked the speaker to address the following topics/questions in their pre-recorded presentation, which was submitted beforehand for the committee to view (available at the study website):

- Can you provide an overview of the status of grapevine leafroll disease (GLD) in South Africa, including its prevalence and impact on vineyards?
- What are the primary methods used in South Africa for diagnosing GLD?
- What are the key strategies employed in South Africa for managing GLD, both in terms of prevention and control?
- Can you discuss any specific cultural practices or vineyard management techniques that have been effective in reducing the spread and impact of GLD?
- Are there any challenges or unique considerations in managing GLD in the South African context, such as climate, grapevine varieties, or regulatory issues?
- What are the best management practices for implementing rouging and replanting strategy in South Africa, including their approach to early identification of infected vines, rouging protocols, thresholds for replanting, and the economics of implementation?
    - What is the industry-wide adoption rate of the rouging and replanting strategy?
    - What are some of the barriers to adopting the rouging and replanting strategy?
    - How do South African growers deal with the management of multiple generations grapevines as a consequence of the rouging and replanting strategy?
- Can you speak to the issue of the so-called 'bad neighbors' with respect to GLD management and how this is dealt with in South Africa?

10:30 **Coffee break**

11:00 **Q&A on Why Growers Adopt Best Management Practices**

Mark Lubell, UC Davis; Committee

The committee asked the speaker to address the following topics/questions in their pre-recorded presentation, which was submitted beforehand for the committee to view (available at the study website):

- What are the barriers to grower adoption of disease/pest management practices? How can grower demographics (age, income, primary language, etc.) and communication strategies influence grower adoption?
- Can you share any case studies or examples of successful collaborations between the social science research community and growers in addressing disease/pest management challenges?
- In your experience, what communication methods or platforms have been most effective in disseminating information about disease/pest management practices to growers?
- How can we increase research utilization and ensure that the best available knowledge is used to inform grower practices?
- What are the key considerations for designing outreach and education programs aimed at improving grower adoption of disease/pest management practices? What are the best practices for fostering communal (area-wide) management of diseases/pests?
- How can we address potential socioeconomic disparities in access to resources and information related to disease/pest management in farms (vineyards)?

12:00   Adjourn Open Session

CLOSED SESSION (12:00 – 1:30 PM) – *Committee and Staff only*

OPEN SESSION (1:30 – 2:15 PM)

1:30   Q&A on Airborne and Spaceborne Imaging Spectroscopy for Early Grapevine Viral Disease Detection

Katie Gold, Cornell University; Committee

The committee asked the speaker to address the following topics/questions in their pre-recorded presentation, which was submitted beforehand for the committee to view (available at the study website):

- What is the current state of research on hyperspectral imaging for detecting grapevine viruses such as leafroll and red blotch?
- What are the major roadblocks in applying hyperspectral imaging to virus detection?
- How early in the infection process can hyperspectral imaging detect viral infections in grapevines? Is it effective for detecting asymptomatic infections?
- What specific spectral signatures or patterns are indicative of grapevine viruses, and how reliable are they for accurate diagnosis?
- Are the challenges different for asymptomatic and symptomatic plants? Do you expect that co-infection also complicates this?
- What do you prefer as a ground truthing method (i.e., ELISA/PCR?) and is ground truthing data a challenge?
- Are there any ongoing research projects or future directions in this field that you find particularly promising or exciting?
- Are there are any specific camera instruments/vendors that you would recommend for hyperspectral imaging given that the performance continues to improve and cost to fall (cubert, for example).

2:15   Adjourn Open Session

OPEN SESSION SPEAKER BIOS

Prof. Gerhard Pietersen currently serves as a senior researcher at Patho Solutions, a private plant virology diagnostic company, which he joined in September 2021. From 1980 until he joined Patho Solutions, Gerhard held research, academic, and administration positions at ARC-Plant Protection Research Institute, Citrus Research International, Microbiology Dept at the University of Pretoria, and the Department of Genetics at Stellenbosch University. In the first 15 years of his career he performed or directed research aimed at determining which viruses occur in South Africa, to aid in the formulation of effective phytosanitary legislation to control plant viruses on legumes, grapevines, and other important horticultural and agronomic crops. Since 1990, most of his research has focused on the epidemiology and control of grapevine leafroll disease.

Dr. Mark Lubell Mark Lubell is a Professor of Environmental Science and Policy at UC Davis. His research focuses on cooperation problems in the context of environmental policy and governance. Current topics include climate adaptation, groundwater management, agricultural nutrient management, and wildlife health. Many of his projects have used grower surveys, semi-structured interviews, and participant observation to understand the factors influencing grower adoption of best management practices including the role of outreach and extension systems.

Dr. Katie Gold is an Assistant Professor of Grape Pathology at Cornell University, where her and her lab, the Grape Sensing, Pathology, and Extension Laboratory at Cornell AgriTech (GrapeSPEC), study the fundamental and applied science of plant disease sensing to improve early disease detection and sustainable integrated management. The Gold Lab studies plant-pathogen interactions at scale with a range of technological approaches, but with specialization in imaging spectroscopy (also known as "hyperspectral imaging") deployed across scales, from laboratory platforms to autonomous field robots to satellites. Gold leads the pest and disease risk mitigation arm of NASA Acres and is an internationally recognized expert in remote sensing of plant disease. Her lab's research has been featured in a range of media including the LA Times, NASA HQ, Cornell Chronicle , Good Fruit Grower, and The Late Show with Steven Colbert. Gold completed her PhD in Plant Pathology and MS in Applied Statistics concurrently at the University of Wisconsin–Madison in 2019. In 2019 she was honored by the American Phytopathological Society with the Schroth Face of the Future Award for her pioneering dissertation research on the use of hyperspectral sensing for pre-symptomatic differentiation. Prior to starting her tenure-track position at Cornell, she held a visiting faculty fellowship at the NASA Jet Propulsion Laboratory in Pasadena, CA.