ABOUT US

Founded in 1981, Agri-Analysis LLC is a premier plant pathology laboratory focusing on viral, bacterial and fungal diseases of grapevines. We conduct cutting edge research and apply new knowledge and discoveries to help clients answer their practical questions in grape production. Our customers include growers, growers associations, agricultural consultants, universities, research institutes, service laboratories, seed companies, real estate agents, and property owners. We are a *CDFA Approved Laboratory* under permits No. 2771 and No. 57-11. We are also under permit by the USDA to receive plant materials originated from outside of the U.S. for testing purposes.

OUR MISSION

As wine growers are faced with increasing risks and challenges from important grapevine diseases, Agri-Analysis is your trusted laboratory partner in identifying, managing, and mitigating these risks through research, experience, innovation, cooperation and uncompromising integrity and professionalism.

Agri-Analysis LLC
930 Riverside Parkway, Suite 30
West Sacramento, CA 95605
Toll Free: (800)506-9852
Fax: (530)757-4655
www.agri-analysis.com

We Help Protect Your Vineyards

You know grapes.
We know grape diseases
We help protect your vineyards.

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930 Riverside Parkway, Suite 30
West Sacramento, CA 95605
(800)506-9852

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GRAPEVINE RED BLOTCH Associated VIRUS (GRBaV)

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WHEN WAS GRBaV VIRUS DISCOVERED?

During the 17th scientific meeting of the International Council for the Study of Virus and Virus-Like Diseases of the Grapevine (ICVG) held at UC Davis, October 7-14, 2012, scientists from Cornell and UC Davis reported the discovery of a new grapevine virus. Dr. Keith Perry, Department of Plant Pathology of Cornell Univeristy, reported a new circular DNA virus from grapevine which is named "Grapevine cabernet franc-associated virus (GCFaV)". Dr. Mysore Sudarshana, USDA-ARS, Department of Plant Pathology of UC Davis reported a circular DNA virus in grapevines affected by red blotch diseases. They named this virus "Grapevine red blotch-associated virus (GRBaV)". It is believed that GCFaV and GRBaV are the same virus that belongs to the family of Geminiviridae. Noteworthy is the fact that it is a circular DNA virus composed of 3,206 nucleotides as opposed to linear RNA viruses which make up the majority of the grapevine virodom. This is the 2nd DNA virus found in grapevines.

WHERE HAS THE RED BLOTCH VIRUS BEEN FOUND & IN WHAT VARIETIES?

We have found this virus in samples from Napa, Sonoma, Paso Robles, San Luis Obispo, Monterey, Mendocino, Santa Barbara areas as well as in states of Virginia and Maryland. Grape varieties include not only red such as Merlot, Zinfandel, Mourvedre, Petite Syrah, Cabernet Franc, Cabernet sauvignon, Malbec, Pinot Noir, Petit Verdot, but also white varieties such as Chardonnay and Riesling. The virus appears to be widely spread in California and other wine growing regions of the U.S.

HOW IS THE GRBaV VIRUS TRANSMITTED?

In other crops, viruses of the geminiviridae family are known to be transmitted by whiteflies and leafhoppers feeding on plant phloem fluids. Some research suggests that the global climate change is causing the virus to migrate from tropical climate to new areas. However, it is too early to tell exactly what vectors harbor and transmit this virus in grapevines. Therefore, pest management guidelines are not yet available. New and exciting research activities are bound to answer these questions in the near future.

WHAT ARE THE SYMPTOMS TO LOOK FOR?

We have observed typical symptoms ranging from mild patchy red leaves with red veins to severe vine decline as shown in the cover photo and pictures below:

WHAT MAKES GRBaV VIRUS IMPORTANT?

Although newly found in grapevines, members of the geminiviridae family have been known to cause serious damages in other crops. For example, it was reported in early 1990s that geminiviruses destroyed up to 95% of the tomato harvest in the Dominican Republic. In the 1991-92 growing season in Florida, they caused $140 million in damage to the tomato crop there. While there is much we do not know about the impact of this virus in grapevines, preliminary indications suggest that it could cause potentially serious damages including vine decline, delayed ripening, low yield, and low sugar content.

HOW IS THE GRBaV VIRUS DETECTED?

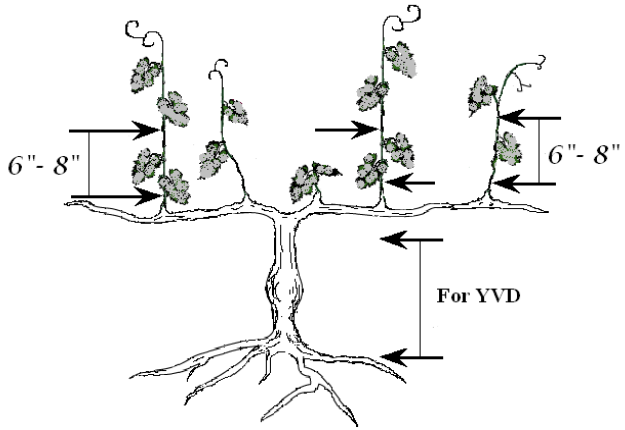
Currently only one isolate of GRBaV has been reported. We use state-of-the-art polymerase chain reaction technology to detect this virus. We also use DNA sequencing which is the gold standard for identification. As more genetic variants are discovered, we constantly develop new detection methods to improve sensitivity and specificity. We collaborate with scientists from two of the world's leading universities in their research efforts so as to enhance our understanding and detection capability.

VINEGUARD[SM] TESTING SERVICE

Our **VINEGUARD[SM]** testing service detects the commonly encountered and economically important viral and bacterial pathogens affecting grapevine production. Clients may choose all or part of the pathogens on this list to test depending on their testing objective.

- Grapevine leafroll virus (GLRaV) types 1 through 9
- Grapevine fanleaf virus (GFLV)
- Grapevine virus B (corky bark virus)
- Grapevine virus A (GVA)
- Grapevine virus D (GVD)
- Pierce's Disease (Xylella fastidiosa)
- Grapevine fleck virus (GFkV)
- Rupestris stem-pitting associated virus
- GLRaV-2 Red Globe Strain (GLRaV2-RG)
- Grapevine Red Blotch Associated Virus (GRBaV)

Sample Collection Protocol



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