



NEW test added to HealthCheck Panel A: Grapevine Syrah virus-1

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Above Photo: Symptoms expressed in Pinot Noir grown in a Californian vineyard

For the last few years the Grapevine Disease testing lab at ESTA has found indications of a new virus related to Grapevine fleck virus and begun its characterization. At the 16th ICVG* meeting held in Dijon, France (September, 2009), two independent research groups at U.C. Davis and Mississippi State University announced the discovery of *Grapevine Syrah virus-1* (GSYV-1) and *Grapevine virus Q* (GVQ), respectively. Each virus originated from different vines with different symptoms; one from Syrah expressed Syrah Decline while the other, found in a wild *Vitis* species, expressed no symptoms. Outstandingly, the genetic sequences of each virus are identical. The accepted nomenclature for this virus is *Grapevine Syrah virus-1* (GSYV-1). The reported results are consistent with ESTA research on the new virus finding.

This newly reported *Grapevine Syrah virus-1* is a member of the Marafivirus genus within the Tymoviridae family. Other viruses in the Marafivirus genus have been reported to be leafhopper transmitted. The study at the UC Davis detected *Grapevine Syrah virus-1* in leafhoppers collected from symptomatic vines infected with *Grapevine Syrah virus-1*, supporting the concept of leafhopper transmission potential. This virus is phylogenetically related to

Grapevine fleck virus (GFKV), which is also grouped within the Tymoviridae (Maculavirus genus). While GFKV expresses mild symptoms in infected grapevines, variant strains of the virus have been reported to cause more severe effects.

Prior to this announcement ESTA applied "Tymovirus generic primers" to detect viruses in this family using RT-PCR. The presence of this virus was verified recently using GSYV-1 specific primers. Based on our experience with fleck, the detection of *Grapevine Syrah virus-1* is most effective in the fall season. Therefore it is now included in HealthCheck Panel A (please link to our website: http://www.stalabs.com/Grapevine_Testing/Grapevine_Healthcheck.php). The availability of the new test will allow the viticulture community to learn more about characteristic symptoms and widespread presence of *Grapevine Syrah virus-1* in California vineyards.

Syrah decline disease or disorder was first identified in California vineyards in 2004. The symptoms include swollen graft unions, cracking and pitting of the wood, stem necrosis, leaf reddening and scorching, vine decline, and death of the vines. Although the symptoms described for Syrah decline disease in

France appear to be similar, French and South African scientists visiting affected Californian vineyards reported that the disease symptoms were not the same. Studies in France have been unable to attribute their disease symptoms to any pathogen. The etiology of Syrah decline could potentially be due to combinations of various pathogens, stress factors, and the genetic make up of the Syrah variety.

Please call our laboratory with questions related to the new virus test or check our website for updates on ESTA diagnostic tools.


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