

Grapevine red blotch-associated virus

What is Grapevine red blotch-associated virus?

Grapevine red blotch-associated virus (GRBaV) is a recently identified and described virus which was first reported on Cabernet Sauvignon in the Napa Valley (California, USA) in 2008. The virus is associated with red blotch symptoms on leaves, as well as causing a significant reduction in sugar accumulation in grapes. Preliminary studies suggest that this virus is not of recent origin, but had instead escaped attention from grape growers in America because of the very similar symptoms to those of Leafroll virus.

What should I look for?

The symptoms of GRBaV generally start appearing in autumn as irregular blotches on leaf blades and the basal portions of shoots. Look for primary and secondary veins on leaves turning red, as well as red blotches between the interveinal margins.

GRBaV can also cause a significant reduction in sugar accumulation of up to 5° Brix as well as increased acidity. It is likely that GRBaV would be first detected in wine grapes, as these grapes are carefully monitored for sugar content to determine harvest date. Look for lower than expected Brix values in both red and white wine grapes.

Unfortunately, much is still unknown about the effect of GRBaV on yield and transmission, and how it may affect different cultivars and rootstocks.

What can it be confused with?

Grapevines with GRBaV cause quite similar symptoms to those caused by Leafroll virus.

However, there are a few distinct differences between the two viruses that can easily be observed. Firstly, grapevines infected with Leafroll virus only turn red in and around the secondary veins of the grapevine leaf, with the primary veins and surrounding area remaining green.



Marc Fuchs, Cornell University

Grapevine infected with Grapevine red blotch-associated virus



M. R. Sudarshana, USDA-ARS

Symptoms of Grapevine red blotch-associated virus include red blotches around the leaf and through the primary and secondary veins



Marc Fuchs, Cornell University

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With GRBaV, the primary and secondary veins, as well as the interveinal zones turn red. Secondly, infection with Leafroll virus typically causes the margins of the leaf to roll onto itself, which gives the virus its symptomatic name. However, in GRBaV the leaves do not roll at the margins.

How does it spread?

It is believed that the main modes of spread and transmission are through grafting and propagation material. The ability of GRBaV to affect both mature and young grapevines has led researchers to suggest the possibility of a vector for the virus.

Where is it now?

GRBaV is a recently described virus. However, preliminary studies have determined the virus is already widespread in both old and mature red and white *V. vinifera* cultivars throughout grape growing regions of America. The sequence of a virus nearly identical to GRBaV has also been detected in Canada.

How can I protect my vineyard from Grapevine red blotch-associated virus?

Only source high health status (preferably certified) plant material from reliable and accredited suppliers. Check your vineyard frequently for the presence of new pests and investigate any sick grapevines for unusual symptoms. Make sure you are familiar with common grapevine pests so you can tell if you see something different. Keep records of anything unusual and ensure all staff and visitors adhere to on farm biosecurity and hygiene practices.

If you see anything unusual, call the Exotic Plant Pest Hotline



Grapevine infected with Leafroll virus; note the different symptoms, most noticeably the green primary leaf veins

Marc Fuchs, Cornell University



Prunings heavily infected with Leafroll virus; note the different symptoms, most noticeably the green primary leaf veins

Nureddin Habibi, University of Adelaide



Symptoms similar to Grapevine red blotch-associated virus; if reddening of the leaves and veins is observed, call the Exotic Plant Pest Hotline immediately

Nureddin Habibi, University of Adelaide

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