

Mini Alert data sheet on grapevine Roditis leaf discoloration-associated virus

Added to the EPPO Alert List in 2018 - Deleted in 2022

Reasons for deletion:

Grapevine Roditis leaf discoloration-associated virus has been included in EPPO Alert List for more than 3 years and during this period no particular international action was requested by the EPPO member countries. This virus occurs in the EPPO region, at low incidence and without any signs of active spread. In 2022, the Working Party on Phytosanitary Regulations agreed that it could be deleted, considering that sufficient alert has been given.

Grapevine Roditis leaf discoloration-associated virus

Why: in the 1980s, a virus-like disease ‘Grapevine Roditis leaf discoloration’ was first observed and described in Greece. This disease was initially found on 4-year old plants (*Vitis vinifera* cv. Roditis, a redberry cultivar, grafted on 110R) in the vineyards of Almyros province. The aetiology of the disease remained undermined for a long time. In 2015, a new virus species called Grapevine Roditis leaf discoloration-associated virus (GRLDaV) and belonging to the genus *Badnavirus* was isolated from symptomatic vines using high throughput sequencing (HTS). In 2015, GRLDaV was detected (by HTS) in a symptomless grapevine plant (*V. vinifera* cv. Bombino nero) growing in a foundation block in Apulia, Italy. In June 2016, GRLDaV was detected in 4 samples collected from 3 different vineyards in the Adana province in Turkey. More recently, GRLDaV was detected in some grapevine cultivars in Croatia using HTS. Considering the emergence of GRLDaV in grapevine, the EPPO Panel on Phytosanitary Measures suggested that this virus should be added to the EPPO Alert List.

Where: until now, GRLDaV has only been detected (mainly using HTS) in small numbers of grapevine samples (symptomatic and asymptomatic) from the EPPO countries listed below. Being a newly described virus, its geographical distribution remains to be further studied.

EPPO region: Croatia, Greece, Italy, Turkey.

On which plants: the only known host of GRLDaV is grapevine (*Vitis vinifera*).

Damage: diseased plants show yellow and/or reddish discolorations on the leaves, along the veins or between the veins. These discolorations can be rather uniformly distributed over the entire leaf blade or only affecting leaf sectors. The latter being of variable shape and size. Discoloured areas also show abnormal venation and downward leaf curling. Grape clusters are smaller and do not develop their full colour, remaining green and unripe. At harvest time, they often have lower sugar content.

Transmission: early studies carried out in Greece have shown that the virus is mechanically transmissible to grapevine (e.g. *V. vinifera* cv. Mission) and to some herbaceous test plants (*Chenopodium quinoa*, *Gomphrena globosa* and *Nicotiana benthamiana*). As some natural spread has been observed in Greece between 1988 and 1992 and as GRLDaV is a *Badnavirus*, it is hypothesized that a vector (possibly mealybugs) might be involved in disease transmission in the field but this remains to be demonstrated.

Pathways: plants for planting of *V. vinifera* from countries where GRLDaV occurs.

Possible risks: grapevine is grown in many countries of the EPPO region, and the emergence of a new virus might represent a threat to this crop which is of major economic and cultural importance. However, the risks associated with GRLDaV are currently difficult to assess considering the general lack of data about its biology, epidemiology, distribution and

impacts on grapevine production. In Croatia, Italy, and Turkey, GRLDaV was detected only in a small number of samples, some of which were asymptomatic. In the early studies conducted in Greece in the 1980s, it was noted that the incidence of the disease was very low (less than 1%) but some negative impacts on plant growth and sugar content of the grapes were described. Despite this high uncertainty about the economic impact of the disease, it seems wise that grapevine-growing countries verify the presence or absence of GRLDaV in their crops, and eventually include this new virus in certification schemes to avoid its further spread.

Sources

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