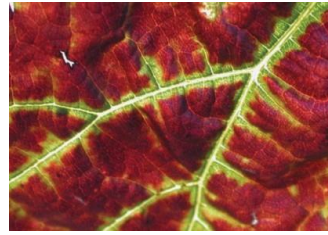




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LEAFROLL CONTROL STRATEGY

1. CAUSE OF LEAFROLL DISEASE

In South Africa leafroll is caused on *Vitis vinifera* by the infection in the vast majority of cases by a virus called grapevine leafroll-associated virus 3 (abbreviated GLRaV-3), which belongs to the family *Closteroviridae* (Fig. 1).

A number of variants of GLRaV-3 are found in South Africa, but the differences in their biological properties (severity of symptoms, efficiency of transmission, yield losses) are unknown.

The variants of GLRaV-3 are often found in mixed, multiple infections in grapevines in South Africa.

A number of other viruses, known as grapevine leafroll associated viruses -1, -2, -4, -7 all within the *Closteroviridae*, can also cause leafroll disease like symptoms, but are seldom encountered in the South African wine grape industry.

The variants of GRLAV-3 as well as the other viruses (e.g. GLRaV-1 or GLRaV-4) can all be controlled by the integrated control strategy presented in this series of fact sheets.

It is difficult to detect differences in the symptoms of leafroll disease caused by the different variants of GLRaV-3 or the

other leafroll associated viruses and laboratory tests are required to identify these in infected vines.

GLRaV-3 is transmitted in South Africa predominantly by the Vine mealybug (*Planococcus ficus*), but can also be transmitted by other mealybugs and scale insects.

Grapevine leafroll disease is currently the most important viral disease of grapevines in South Africa.

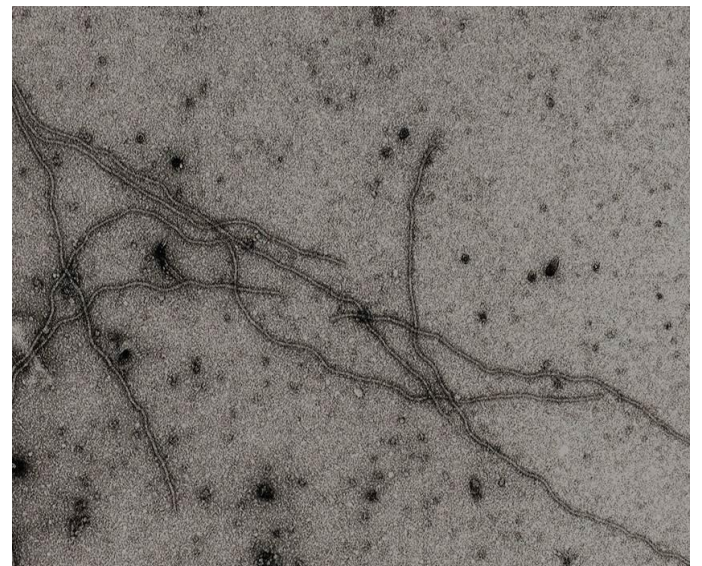


Figure 1: Image of GLRaV-3 particles observed under an electron microscope. (Image: G.G.F. Kasdorf, ARC-PPRI)

This research was funded by



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