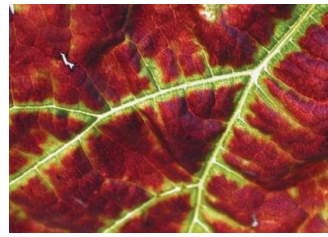




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## LEAFROLL CONTROL STRATEGY

### 3. DISORDERS THAT CAN BE CONFUSED WITH LEAFROLL:

#### 3.6 Other diseases

##### 3.6.1 Shiraz disease

Shiraz disease is different disease to leafroll but has the same virus (GLRaV-3) being closely associated with it, possibly with additional viruses such as grapevine virus A (GVA) and/or possibly others.

In its earliest phases of development the disease symptoms look like those of leafroll but after a few seasons the shoots fail to lignify and become "rubbery" (Fig. 1).



Figure 1: Shoots that failed to lignify as a result of Shiraz disease. (Image: R. Carstens, ARC Infruitec-Nietvoorbij)

Grapevine vigor is severely compromised. Leaf fall is dramatically delayed and the plant takes on a dark green aspect that includes leafroll-like leaf symptoms.

Shiraz disease grapevines are very easy to observe in early winter (Fig. 2).

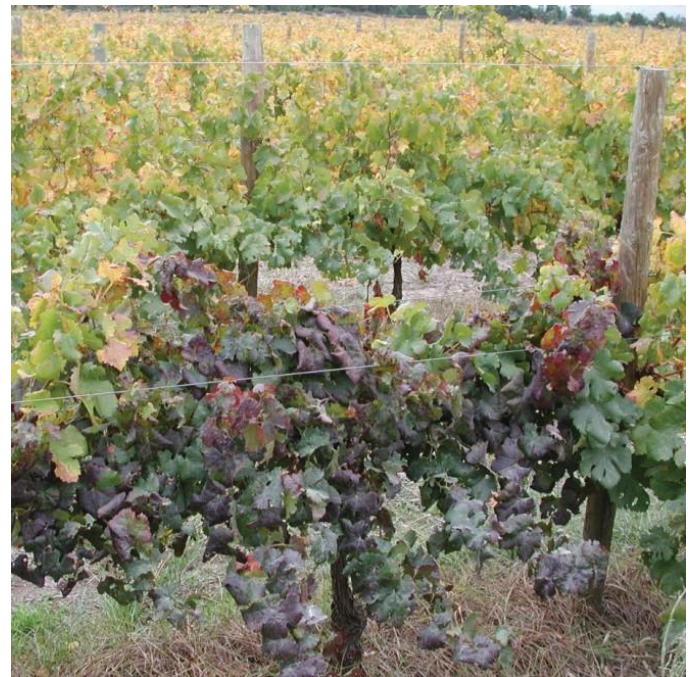


Figure 2: Typical Shiraz disease symptoms late in the growth season. Leaves tend not to drop off in autumn. (Image: G. Pietersen, LNR-PPRI)

### 3.6.2 Shiraz decline

This disease, not to be confused with the similar sounding Shiraz disease (above), is limited to only Shiraz clone 99 in South Africa.

Symptoms are an even red discoloration of leaves from mid to late summer, similar to those of girdled grapevines and shoots (Fig. 3).

The graft union is thickened along with the stem above the union, and deep cracks are observed on the stem and cordon.

The cause of this disease is not fully understood.



Figure 3: Shiraz decline disease on a Shiraz clone 99 vine. (Image: G. Pietersen, ARC-PPRI)

### 3.6.3 Aster yellows

The symptoms of aster yellows generally start appearing in late autumn as irregular blotches on leaf blades on basal portions of shoots.

The secondary and tertiary veins turn partly or fully red (Fig. 4).

Occasionally, the reddening of leaf blade in the interveinal zones between secondary veins resembles those of leafroll diseases, but the leaf margins do not roll downward. Also, in leafroll infected red varieties the secondary and tertiary veins remain green.



Figure 4: Aster yellows phytoplasma symptoms on Pinotage. (Image: R. Carstens, ARCInfruitec-Nietvoorbij)

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