

GUIDELINES: CONTROL OF LEAFROLL AND FANLEAF IN VINEYARDS

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PART 1: FOUNDATION UNITS

1. INTRODUCTION

Due to the sporadic appearance in vineyards throughout the entire wine industry of virus symptoms, the Vine Improvement Association (VIA) has updated its precautionary and control measures so as to more effectively combat the spread of leafroll and fanleaf within planting units. These planting units are defined in terms of the SA Plant Certification Scheme for Wine Grapes.

2. PRECAUTIONARY AND CONTROL MEASURES

Foundation units are established with plants derived from plant material originating from nucleus units, and are used to provide plant material for the establishment of mother units.

2.1. Isolation

- An isolation distance of 25 metres from other vineyards must be maintained.

2.2. Buffer strip

- No plants of any kind may be present within five metres of a foundation unit.

2.3. Soil requirements

- Virgin soil and the soil must test free of the fanleaf virus vector.
- Drainage and run-off water from other vineyards should not be permitted to flow on to a foundation unit.
- Should this land previously have been used for a foundation unit, as many as possible of the remaining roots must be removed.
- Should this land previously have been used for a foundation unit, the land must be permitted to rest for at least a year.



Fig. 1. Plants within a Foundation Unit must be cared for in a manner conducive to obtaining plant material of a high quality.

2.4. Irrigation water

- Irrigation water must not be contaminated by drainage and run-off water emanating from other vineyards.
- Irrigation water must be free of the fanleaf virus vector.

2.5. Inspection of units

- Inspections need to take place three times a year, namely in summer, autumn and winter.

2.6. Care

- Plants within a foundation unit must be cared for in a manner conducive to obtaining plant material of a high quality.

2.7. Weed control

- Plants within a foundation unit must not be overgrown with weeds.
- Weeds need be controlled by following a specific weed control programme.
- The height of weed growth must be restricted to deny ants alternative access routes to the vines, resulting from the weeds coming into contact with vines, trellises or wires.

2.8. Absence of mealybug infestation

- No mealybug or visual signs of mealybug may be present on the plants or plant material.

2.9. Removal of vines

- Vines showing visual symptoms of leafroll and vines testing positively for leafroll must be removed continually.
- Deviating vines must be removed on a continuous basis.

2.10. Monitoring for mealybug**2.10.1 Standard programme****2.10.1.1 Risk units**

- Put out one pheromone trap per hectare.
- Start at the beginning of October and continue until the end of May.
- Replace the sticky pads of the pheromone traps every second week.
- Do not fold the sticky pads and hand them in so that the number of mealybug males present can be counted under a microscope.
- Replace the capsules of the pheromone traps every second month.

2.10.1.2 Low risk units

- Put out one pheromone trap for every five hectares.
- Start at 15 November and continue until 15 January.
- Replace the sticky pads of the pheromone traps once a month.
- Do not fold the sticky pads and hand them in so that the number mealybug males present can be counted under a microscope.

2.10.2 Supplementary programme

If the count of a trap surpasses 10 males per trap over a period of two weeks:

- Draft a plan of the foundation unit with a clear indication of each row and the number of sections per row.
- Choose 20 sections of five vines each, spread proportionately throughout the unit.
- Should the area exceeds two hectares, the number of sections should be increased pro-rata.
- Monitor the bunch zone of each of the five vines in each section twice a week.
- Indicate only the presence or absence of mealybug on every vine.
- The total number of infested vines will indicate the percentage of mealybug infestation in the mother unit.

2.11. Control of mealybug

- Scion Units:
 - Start spraying as soon as the male trap count at the beginning of the season surpasses 10 and females could be visually observed.
 - Treat the entire foundation unit immediately with a registered contact or systemic mealybug insecticide, applied in accordance with the prescribed concentrations.
 - Use hand-held spray lances and not mist blowers.
 - Concentrate applications on the vine cordons and fruiting zones.
- Rootstock Units:
 - Start spraying as soon as the male trap count at the onset of the season surpasses 10 and females could be visually observed.
 - Treat the entire foundation unit immediately with a registered contact or systemic mealybug insecticide, applied in accordance with the prescribed concentrations.
 - Use hand-held spray lances and not mist blowers.

2.12. Monitoring of Ants

- Ant infestations must also be monitored while checking for mealybug.
- Ants must be monitored in Spring when the weather warms up and the ants are more active.
- Should 20% of vines be infested with ants, control measures must be applied.

2.13. Control of Ants

- The uncontrolled presence of ants within a foundation unit is not permitted.
- Ants must be controlled in Spring.
- Ants must be controlled as soon as there are signs of them moving into the vine canopy.
- Should ants make their appearance later in the season, they must be controlled before harvesting takes pace.
- Hand-held spray lances with a ring-spray attachment must be used.

- Use registered contact or bait ant insecticides, applied in accordance with the prescribed concentrations.
- Direct stem applications must be made.
- Stem applications must be directed at the portions above the permanent irrigation pipelines.
- Trellis poles must also be sprayed.
- Entire rows must be sprayed where ants occur and not merely isolated patches.
- Should the infestations be so severe that ants are seen to be moving over the ground in large numbers, a second stem application must be carried out later in the season.
- The second application must only be made when the ants appear in the vine canopy.

2.14. Movement of people and implements

- Should it become necessary to move people or implements to the foundation units from other vineyards on the same farm, the following precautions are essential:
 - Clean spray all tractors and implements;
 - Disinfect all pruning shears and
 - Wear clean protective clothing.

3. CONCLUSION

Research workers are presently engaged in a number of Winetech-projects covering various disciplines aimed at the combating and control of the spread of leafroll. Although these precautionary measures may be further augmented in the future, as and when research results are made available, the indications are that the present measures can contribute positively towards the combating of leafroll and fanleaf in commercial vineyards throughout the entire wine industry.

Compiled from the following:

- Addison, P., Protocol for Ant Control, Winetech, June 2003.
- Carstens, R., Leafroll Review, Winetech, December 2001.
- Government Printer, South African Plant Certification Scheme for Wine Grapes, Government Gazette, 28th August 1992, as amended.
- Walton, V.M., Protocol for the Combating of Mealybug Infestations in a Vineyard Unit, Winetech, December 2001.
- Walton, V.M., Pringle, K.L. and Daane, K.M., Protocol for Pheromone Traps and Monitoring of Mealybug in South African Vineyards, Winetech, June 2003.

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