

GUIDELINES: CONTROL OF LEAFROLL AND FANLEAF IN VINEYARDS

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PART 2: MOTHER UNITS

1. INTRODUCTION

Because of the sporadic appearance in vineyards throughout the entire wine industry of virus symptoms, particularly of leafroll, and the spread of fanleaf in the lower Breede River Valley, 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

Mother units are established with plants derived from plant material originating from foundation units and are used to provide plant material for the production of nursery vines.

2.1. Isolation

- An isolation distance of three metres from another vineyard must be maintained.

2.2. Soil requirements

- Units must be at least three hectares in size.
- Virgin soil or soil which tests free of the fanleaf virus vector.
- Should this land previously have been used for a nursery or a vineyard, as many as possible of the remaining roots must be removed.
- In the case of old vineyards or nursery soils, the land must be permitted to rest for at least a year.
- Drainage and run-off water from other vineyards must not be permitted to flow on to a mother unit.

2.3. Inspection of units

- Inspections take place at least once a year and, thereafter, in succession during summer, winter and autumn.
- Autumn inspections for visual leafroll symptoms on all red varieties are compulsory, as is the case with the white varieties, Chardonnay, Cape Riesling and Semillon.

2.4. Care

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

2.5. Weed control

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



Fig. 1. Vines must not be overgrown with weeds.

2.6. Absence of mealybug infestations

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

2.7. Removal of vines

- Vines showing visual symptoms of Leafroll and vines testing positively for leafroll:
 - Must be removed in the first and second growth season.
 - After the second year, the vines are merely marked. Before the gathering of any propagation material, the marked vines and the two vines immediately adjacent to them must be pre-pruned, so that there is no chance of any of their shoots ever being used for propagation purposes.
- Deviating vines must be continually marked and must be pre-pruned, as in the case of the other marked vines.

2.8. Buffer strips for high-risk scion units

- Vines in the two rows on either side of the unit must serve as a catchment and barrier zone for the naturally distributed vectors.
- Vines in the first and last sections, or at least five vines in each row, must also serve as a catchment and barrier zone.
- Vines in the two side rows and the headlands, as is the case with the marked vines, must be pre-pruned so that their shoots cannot be used for propagation material.



Fig. 2. Precautionary measures must be taken whenever people or implements are moved from older vineyards to younger vineyards.

2.9. Monitoring of Mealybug

- Start at the beginning of October and continue until the end of May.
- Draft a plan of the mother 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 unit be greater than two hectares, the number of sections must be increased pro rata.
- Monitor the fruiting zones of each of the five vines in each section twice a week.
- Note down only the presence or absence of mealybug on each vine.
- The total number of infested vines will then indicate the percentage of mealybug infestation in the mother unit.

2.10 Control of mealybug

- Scion Units:
 - As soon as mealybug infestation is detected, the entire mother unit must be sprayed 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 the fruiting zones.
- Rootstocks Units:
 - As soon as mealybug infestation is detected, the entire mother unit must be sprayed with a registered contact or systemic mealybug insecticide, applied in accordance with the prescribed concentrations.
 - Use hand-held spray lances and not mist blowers.

2.11. Monitoring for 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.

2.12. Control of Ants

- The uncontrolled presence of ants within a mother 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 place.
- Hand-held spray lances equipped 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 portion 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.

2.13. Movement of people and implements

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



Fig. 3. Mealybug must be controlled.



Fig. 4. Ants must be controlled.

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. en Daane, K.M., Protocol for Pheromone Traps and Monitoring of Mealybug in South African Vineyards, Winetech, June 2003.

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