



LEAFROLL CONTROL STRATEGY

10.2 CHEMICAL CONTROL OF MEALYBUG IN VINEYARDS

The vine mealybug is the main vector responsible for the spread of grapevine leafroll-associated virus 3 (GLRaV-3) in South African vineyards. Therefore, mealybug control is vital to manage and control the spread of grapevine leafroll disease. An integrated pest management (IPM) system, consisting of management practices, biological control and chemical control, is required to suppress mealybug in vineyards. This fact sheet will only cover the chemical control of mealybugs.

10.2.1 Chemical control when establishing new vineyards

When establishing a vineyard with young grapevines, always use certified (virus free) planting material to reduce the possibility of grapevine leafroll disease from infected planting material. Young grapevines should be treated with a systemic insecticide to prevent the spread of leafroll by virus carrying (viruliferous) mealybugs from any potentially infected grapevine to those surrounding it (secondary spread).

Systemic insecticide should be applied after budbreak as a soil drench around the trunk of the grapevine on moist soil. Before application, all organic matter on the soil surface must be removed; otherwise the active ingredient will not be absorbed by the grapevine's roots, but will bind to the organic matter. Systemic insecticides may not be used as a soil drench in vineyards where irrigation is not available after application of the insecticide. Where irrigation is not available, other systemic insecticides can be applied as an above ground foliar spray, after planting the new vines. Grapevines with leafroll symptoms must be removed in the subsequent seasons.

10.2.2 Chemical control of mealybugs in established vineyards during dormancy

Mealybugs spend the winter under loose bark, in cracks of the trunk and cordon and on the roots of the grapevine. During dormancy in winter, grapevines must be treated with a contact insecticide in vineyards where high levels of mealybug infestation occurred during the previous season.

10.2.3 Chemical control of mealybugs in established vineyards during the growing season

Chemical control with insecticides during the growing season must be based on monitoring of mealybugs. Pheromone traps are used for monitoring, supplemented by physical inspections of vines once the threshold of 65 male mealybugs per trap are reached for two consecutive weeks. Chemical control should be applied only when physical inspections indicate that 2% or more of the vines in a block is infested with mealy bug. If infestation occurs early in the season, the infested vines as well as the two adjacent vines, or the infested spot should be treated. There are currently both contact and systemic insecticides registered for chemical control of mealy bug during the growing season. If monitoring indicates that infestation is so widespread throughout the block that spot control is not feasible, the whole block should be treated.

Systemic insecticides can also be used as a soil drench in established vineyards where irrigation is available. These insecticides may only be applied at budbreak or within 30 days after harvest (but prior to leaf-fall). The application of these systemic insecticides at budbreak should be preceded by the application of a contact insecticide

during dormancy. Application after harvest should be followed by the use of a contact insecticide during dormancy.

It is important to alternate applications of insecticides with insecticides from different insecticide groups to prevent mealybugs from building up resistance to a specific insecticide.

10.2.4 Insecticide resistance

Mealybug populations may contain individuals which are naturally resistant to insecticides, from any group code,

used to control them. When an insecticide from any group code is used repeatedly, these resistant individuals in the mealybug population can eventually dominate the population. Therefore, the resistant mealybugs may not be controlled by the insecticide in the specific group code or any other insecticide in the same group code. To delay insecticide resistance, avoid using insecticides from the same group code repeatedly by alternating insecticides from different group codes. An IPM system which includes control methods such as biological control or mating disruption, will also be advantageous to delay insect resistance to chemical control.

IMPORTANT NOTICE

Before any chemical control for mealybug is applied in a vineyard, consult your chemical advisor for information regarding suitable products and dosages. Ensure that only registered products are applied and be aware of withholding periods and other restrictions regarding when and how products should be applied. If wine produced from the grapes of treated vineyards is going to be exported, ensure that the treatment applied complies with the relevant market's export requirements.