

Vergelegen winning the fight against leaf roll virus

The leaves in many vineyards are turning fine shades of red as the Western Cape eases into autumn, but what many visitors don't know is that this color is also a sign of a virus that is having a serious impact on wine production and its economic viability.



Vergelegen vineyards, modern cellar in background

The good news, however, is that a pioneering, multi-million rand project, which has seen swathes of vineyards treated, or uprooted and replanted, is bearing fruit for a historic Helderberg wine estate. Wine quality has improved, production increased, and its methods are being adopted as far afield as New Zealand, Israel and the Napa Valley of California.

Anglo American-owned Vergelegen in Somerset West began its hugely ambitious project to eradicate leaf roll virus from the estate in 1999. That first, newly-planted vineyard on the farm is now 17 years old, making it the world's oldest virus-free vineyard of its type.

The virus was discovered in South African vineyards in 1936, but farmers thought it was impossible to eradicate. The disease, spread by mealybugs, is much more apparent in red wine cultivars, but also affects white wine cultivars. Leaf roll virus diminishes the quality and volume of the harvest. Eventually, the vines become uneconomical and must be uprooted - yet another burden for a sector that is already under severe financial constraints.

The team at Vergelegen is led by MD Don Tooth and winemaker André van Rensburg. They have worked closely with Professor Gerhard Pietersen of the Agricultural Research Council - Plant Protection Research Institute at the University of Pretoria.



Prof. Gerhard Pietersen in Vergelegen vineyard

Professor Pietersen, whose research was funded by Winetech, sought an agricultural property where he could demonstrate the scientific and commercial value to the industry if the virus could be well-managed and even eradicated. A sustainable model had to be established, with a balance between replanting vineyards and ongoing commercial farming.

“It was not a decision we took lightly,” says Tooth. “But we have set our sights on being recognised as one of the best wine producers in the world, so considered it a long-term investment in the future quality of our wine.” Besides the replanting costs, the estate also had to buy in grapes to make up the shortfall after the vineyards had been uprooted. The programme was implemented in three phases: planting new, intact vineyards; uprooting badly-infected red wine cultivar vineyards and replanting them; and testing and treating white wine cultivars that, apart from Chardonnay and Semillon, do not readily show the effects of the virus.

Phase one:

Vergelegen planned to replace 25 hectares of citrus with vineyards and accordingly, in 1999, the first completely “clean” vineyard was planted. These vines were regularly tested and any infected vines were removed. The virus has virtually been eradicated here.

Phase two:

The farm was divided into two – “clean”, young vineyards and “infected”, old vineyards. The team implemented a program involving a pheromone bait, spraying (and occasional application via drip irrigation) of systemic insecticide, with low toxicity to mammals, at various stages of the production cycle.

Increasingly, Vergelegen’s alien-clearing programme is now providing more natural solutions. In a programme believed to be the largest private conservation undertaking in South Africa, some 2,000 of 2,200 hectares of land have been cleared of invasive alien vegetation.

As the indigenous fynbos returns, it attracts increasing numbers of birds and insects. Amongst them is an abundance of ladybirds, one of the most effective predators of mealybugs. Birds and other predatory insects also eat other pests that prey on the vines. In attracting these predators, the fynbos and buchu growing near the vineyards act as a form of natural pesticide, limiting the need to use chemical applications for mealybug control.

Another interesting finding, says van Rensburg, is that mealybugs are spread mainly by people and tools, not by wind and birds as thought. Accordingly, the newly-planted vineyards are located as far as possible from old, infected vineyards and farm boundaries. Workers and their tools have been divided into two distinct teams and no worker may move from an infected to a clean vineyard.



Vergelegen workers are limited to specific vineyards

As mealybugs can live for several years on vine roots, old vineyards are cleared as thoroughly as possible and the ground left fallow for two years before replanting.

Phase three:

Many of the older white wine cultivar vineyards still produce superb wine and are only replaced when the production and quality decrease. As the white cultivars do not reveal clear symptoms, the estate's winemaking assistant and laboratory technician Martiza van Rensburg and her team check the vines for infection annually.

Every block and plant is recorded on a chart. Adjoining sections are tested and if a result is positive, every vine in a section is tested. Over 16,000 tests were undertaken on over 127,000 vines in 2012 alone. Last year, only 35 out of more than half a million vines revealed signs of leaf roll virus. Internationally, in more temperate climates such as Europe, the impact of the leaf roll virus is not as great as in harsh, dry environments. The virus does not spread as fast in New Zealand as in South Africa, but its wine producers are starting to address the problem in the same way as at Vergelegen. Its pioneering treatment is also being implemented in Israel and the Napa Valley.



Assistant winemaker Martiza van Rensburg

"Quality wines are made in the vineyards, not the cellar, and wine produced from virus-free vines will continue to improve year after year," says Tooth. "It is the only way to positively change South Africa's wine image internationally. For too long we've been regarded as cheap and cheerful when in fact top South African wine can hold its own with some of the best in the world. In terms of wine quality, there are encouraging signs. Vergelegen won seven international gold medals last year alone, from AWC Vienna (the world's biggest wine competition), the San Francisco International Wine Show, the

International Wine Challenge and the Lyon International Competition in France.

Van Rensburg recognises that it will be his successors who will really benefit from the estate's foresight. "There aren't enough old vineyards in the country, which is a problem because the quality of the fruit gets better over time. My successors should be able to make wine from vineyards that are 40-60 years old, ensuring that Vergelegen will still be producing quality wines well into the future."

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