fact sheet № 3

EUTYPA DIEBACK

WHAT IS EUTYPA?

Eutypa dieback is caused by the fungus *Eutypa lata* and is one of the major trunk diseases of grapevines. Eutypa occurs worldwide in wine regions that exceed an annual rainfall of 350mm. In Australia, eutypa was first detected in the 1930s and is now widespread. Grapevines can become infected by eutypa through fresh cuts such as those made during pruning or reworking, causing a significant impact on the productivity and profitability of grape growing. The fungus grows slowly, causing stunted shoots and eventually the demise of affected vines.







CASE STUDY: Taylors Wines

SHIRAZ VINEYARDS TARGETED FOR TRUNK RENEWAL AT TAYLORS WINES

Taylors Wines is combatting eutypa dieback with a staged trunk renewal program across 90ha of its Shiraz vineyards.

The Clare Valley winery started the process in 2008 in response to declining yields, with production on many of its 20-year-old blocks reduced by up to 60%.

Taylors Wines vineyard manager Colin Hinze said many grape growers with vineyards planted in the mid-1990s were now experiencing symptoms and reduced yields indicative of the disease.

"Eutypa was always seen as an old vine disease, but the rapid expansion of the wine industry has brought to light that many 20-year-old vineyards now have eutypa problems," said Colin. "Approximately 40% of our vineyard was planted between 1994 and 1997, so we have a large exposure to the disease."

Following an initial 40-vine trial, Taylors up-scaled its response to eutypa in 2009, taking the radical approach of lopping trunks 30cm above the ground, or if the infection remains visible, at ground level. "In a previous role we took a slow and steady process that involved cutting the diseased arm, whereas we chose an 'off with its head' system of trunk removal here," said Colin. "After experimenting with cutting the trunk fairly high and then moving down to find the lowest infection point, we decided to make the first cut at 30cm. It is a much more efficient way to do it on a broad scale."



Colin Hinze



Taylors outsource the trunk-cutting process to a three-person team that use a hydraulic-powered lopper to sever the trunk. They take a vine-by-vine approach, cutting the wire between vines and placing each vine in the mid-row for collection by a loader. A member of Taylors' viticultural team follows directly behind, painting the newly-exposed wounds with the fungicide Greenseal™ (Tebuconazole). All cut-off vines are stockpiled on the vineyard's headlands and burnt as soon as the fire danger season ends the following autumn. Removing the debris from the vine row before new fragile suckers emerge is another important part of the process.





Taylors has experienced positive water shoot rates with only 2% of its Shiraz vines not producing a viable sucker. Colin believes Taylors' practice of using herbicides for desuckering rather than manually removing watershoots in previous years has supported bud development. "It's not the secret to our success, but I think that management practice over history has enabled this technique to work in our favour," he said.



The Taylors team use a bamboo stake on each vine to train the shoot up to a new cordon wire and typically train the vine once a month during the growing season. They allow the vines two years to establish arms and practise fruit thinning and nutrition management during that time. "We've found that it's best to focus on setting up the structure of the plant rather than fruit production in year two. We remove any crop and look for fruit in the third year," said Colin. While restructured vines produce fruit with young vine characteristics two years following establishment, they quickly return to quality production according to Colin.

"What we've seen is that the vines settle down much quicker compared to replanted vines. We've returned to A and B-grade quality fruit from restructured vineyards in their third or fourth cycle of grape production."

Taylors is rolling out staged renewal of its affected Shiraz vineyards, targeting up to 10ha per year. They identified the starting point and priority vineyards with a canopy survey that involved rating the incidence and severity of visible vine symptoms, a process they repeat every two years in October.

For Taylors, the decision to treat a vineyard for Eutypa is based on two key criteria: the right variety and the right place. The variety must produce quality fruit and prove responsive to the restructuring process, as well as complement the soil type and characteristics of the region.

"We focussed on Shiraz to start with because it displayed the highest incidence of symptoms and we had the confidence that it would respond well to restructuring," said Colin.

They have also conducted restructuring trials on approximately 2,500 Cabernet Sauvignon



and Merlot vines, but the results were less convincing. After two years, 17% of Cabernet Sauvignon vines hadn't performed well, compared to 2% of Shiraz vines. With Merlot, less than 60% were producing fruit, up to 30% hadn't yet established on the wire and 10% displayed either very weak growth or no growth.

Taylors has completed 60% of its planned Shiraz program and has seen vineyards return to normal yield production after three years. The winery spends about $10,000/ha on the process, compared to $45,000/ha to grub and replant a vineyard. "If we do a full trellis replacement as well, it's probably 30% of the cost of a full removal and replant," said Colin. "And we're out of production for two years for renewal compared to 6 years when starting from scratch. The yield response is the biggest single tick. The $10,000/ha spent is returned to us after three years of healthy growth."

Ongoing eutypa protection involves annually spraying both younger vineyards and restructured vines following hand-pruning, as a form of risk management. Currently, Taylors use a recycling sprayer to apply a protection fungicide at the end of each day.

It remains unclear how the winery will continue to tackle eutypa following the completion of the current renewal program. "Do we wait to restructure vineyards again in the future or do we try to keep on top of it early by cutting arms? I don't know the answer to that question yet, but we've drawn a line in the sand and given these vines another 15 years at least," he said.

What other research or information is available?

Eutypa Dieback factsheets and other resources http://research.wineaustralia.com/resource_categories/eutypa-dieback/

Agrochemicals registered for use in Australian Viticulture http://www.awri.com.au/industry_support/viticulture/agrochemicals/agrochemical_booklet/

Wine Australia for Australian Wine

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