

COOPERATIVE
RESEARCH CENTRE
for
VITICULTURE



Combining the efforts of the On Farm Trials and Viticare group network newsletters

Remedial surgery to manage Eutypa dieback– not something to rush into!

By Dr Mette Creaser – Senior Research Officer, South Australian Research and Development Institute(SARDI), Adelaide

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Eutypa dieback is a fungal disease that over a period of years causes a decline in vineyard productivity and results in vine death. Infection is characterised by distinctive foliar symptoms, stunted shoots with small leaves, that are easiest to spot in spring. Wood symptoms can be seen at any time when infected vine parts are cut in cross-section to reveal a distinct wedge of dead tissue. There are currently no methods of eradicating the fungus once it becomes established within a vine other than to cut out the infected tissue. Growers have been advised to tag whole vines or vine parts that show foliar symptoms in spring and to conduct remedial surgery in winter. The vine is then cut back until healthy wood is found and a final cut made 10 cm below this point to ensure all infected wood is removed. Despite this advice, little to no work has been conducted to determine the effectiveness of remedial surgery. As a CRC for Viticulture researcher, I am working on a project to control Eutypa dieback that is super-

vised by Dr Trevor Wicks. As part of this project, I am investigating the effectiveness of remedial surgery as a method of renewing Eutypa affected vines. In particular, I am trying to determine:
At what stage of the disease should remedial surgery be conducted?
How should remedial surgery be conducted?
How effective is remedial surgery in removing infected tissue and restoring vine productivity and longevity?
To date my research has shown that:
Foliar symptoms are not always associated with wood infections, so some infections may go undetected.
It may not be possible to cut all symptomatic wood

out of a vine. I have shown that in severely infected vines infections can extend below soil level.

- The severity of foliar symptoms cannot be used to determine the extent of wood infection.
- Vines may not recover from remedial surgery. In one of my trials 37% of vines that had both cordons removed died.

Further information on remedial surgery can be found in this year's Annual Technical issue of Australian Grapegrower and Winemaker (June 2002).

Latest News
Cooperative Research Centre for Viticulture,
Research to Practice- Viticulture Workshop Updates for this Season, 2002– see inside this issue

Adelaide Hills Wine Region, On Farm Trials News.

Dr Chris Williams & Lee Bartlett,
South Australian Research and Development Institute (SARDI), Waite Precinct.

The Participatory On Farm Trials for sustainable viticulture project, in the Adelaide Hills wine region currently has 7 trials 3 of them are Molybdenum (Mo) spray application trials on Merlot (on own roots). The other 4 are compost and or lime trials on acid soils (3 are soil amelioration trials, 2 on Merlot and 1 on Sauvignon Blanc and 1 on Cabernet Sauvignon to assess depth of compost effects on soil and plant nutrition). The Adelaide Hills wine region's main focus is uneven and poor fruit set in Merlot and the implications of low pH and acid soils on poor fruit set.

A cool, wet, windy spring and the coolest summer for over 150 years occurred in the Adelaide Hills in 2001/2002. These adverse weather conditions prior to

and during flowering delayed floral development and have been associated with the poor fruit set "hen and chickens" (or shot berry formation) problem in Merlot and other varieties in the 2001/2002 season in the Adelaide Hills and most, cool temperate regions in Australia.

When Mo foliar sprays were applied in 2000/2001, no significant yield responses were recorded. However, when Mo was applied in 2001/2002 significant increases in bunch yield per vine were obtained. This was largely due to significant increase in the weight of coloured berries 5–15 mm in diameter per bunch at harvest. Further work is required to define deficient levels of Mo in petioles, and to calibrate a plant test for Mo so that growers

can assess the Mo status of their vines to determine if Mo sprays are required.

In the 2 compost trials on acid soils that have been established for 16 months or more there have been some desirable effects such as increased soil pH and calcium and some concerns, namely significant increases in potassium (K). If left unmonitored high K can have a detrimental effect on the acid balance of the finished wine (Goldspink 1998). Continuation of these compost trials will allow us to fully assess the long term effects on soil and plant nutrients and vineyard sustainability.

On the 4th of July 2002 at a team meeting the Adelaide Hills wine group members participating in the Participatory On Farm

Trials for sustainable viticulture project, decided that all 7 trials would be continued in the 2002/2003 season.

The Participatory On Farm Trials for sustainable viticulture, Adelaide Hills region coordinators thank their participating growers for their cooperation and support and look forward to another successful year in the 2002/2003 season.

Trial and Error

by Andrew Bengler, Vineyard Manager, Bremerton Winery, Langhorne Creek, SA

Usually after vintage you get a small window of opportunity to catch your breath and take stock of the season that just was. If you run a pretty stock standard vineyard program there's usually not much more to do than run through the figures and plan for the recommencement of the annual program. For many growers it really is that simple, I'm not saying they do it easy, it just they've got a pretty fair idea of what works in their vineyards and they

usually get the desired outcomes.

Not so for us mad keen young guns and new chums who think we might indulge ourselves with the odd trial or two. In Langhorne Creek the majority of trials are aimed at maintaining or improving grape quality. Only natural in an industry that is now clearly focused on winegrowing in preference to straight out grapegrowing.

With such an outcome focused motivation behind

most trials you quickly come to realise the complexity of the task. In all farming systems there are just so many variables to take into account when formulating plans and making decisions. Sometimes it all just seems too hard, trials like any change require a lot of effort and commitment.

So here we are going over the trials that we conducted last season and those that have been running for several seasons.

Now that the majority of the winemaking process is complete we are starting to get some feedback on what we got right and what we got wrong. With such a difficult season behind us do the results really mean anything and will we be able to repeat them in coming seasons? Some we will, some we won't, but hey that's life.

Managing Bird Populations

by Dr David Paton, Department of Environmental Biology, University of Adelaide, SA.

In many parts of Australia, many woodland bird species have declined in abundance, while a few have maintained their numbers and even increased.

Both the decreases and increases are linked to the changes that we have made to their environments. In many areas most of the native vegetation has been removed and replaced with housing or various crops and pastures. Those bird species unable to cope with the changed landscape decline while those able to use these new habitats often increase. By using these new habitats, some of the birds come into conflict with us, because they damage the crops and reduce profits.

For the grape industry the main native birds causing damage are various honeyeaters (e.g. wattlebirds), silvereyes and parrots. These birds all have a close affinity with native vegetation, often feeding on nectar from flowers. An introduced species, the Common Starling is also a major pest in many areas. This species is largely insectivorous.

Why do the native birds attack grapes and other soft fruits? One of the main reasons is that during late summer and autumn their

native foods are in shortest supply and this is because we have disproportionately removed almost all of the native vegetation from the best agricultural areas.

What native vegetation that does remain is on the poorest soils and often on ridges and steep gullies. These areas provide food in the form of nectar during winter and spring, and the birds leave these areas in search of summer and autumn fodder. The native plants that were once on the good quality land would have provided the birds with food at these times. However, we have removed much of that vegetation, and almost as a last resort the native birds are forced to switch to feeding on grapes and other horticultural crops at these times.

Some of these birds now move over distances of 10-100km in search of food and perhaps in the past they only needed to move short distances.

The above argument suggests a simple long-term solution: **put back some of the native vegetation and key plant species that traditionally provided the native birds with food during late summer and autumn.** Interestingly, in those years when the autumn-flowering eucalypts flowered extensively the dam-

age to crops by native birds was much lower.

Recent surveys of beekeepers suggest that the eucalypts - particularly autumn-flowering eucalypts no longer flower as regularly or as intensively as they did 10-20 years ago. The poor performance of these plants is also linked to too much clearance. In many areas there are just scattered trees left in paddocks, and most of these no longer flower or produce much nectar or seed. Putting back some of these deep-rooted native plants strategically in the environment, not only increase the number of plants that produce food but will also help the scattered trees regain some of their lost productivity - and to use a poor pun 'kill two birds with the one stone'.

Given that birds move freely over a relatively wide area this revegetation does not necessarily need to be done near vineyards and orchards to be effective. Clearly it is time to revisit revegetation programmes and to think regionally and strategically rather than locally when attempting to restore a balance to natural processes. But the key is that some of the good quality farming land somewhere in the region needs to be retired from agriculture and used for revegeta-

tion.

Now this strategy may help reduce problems caused by native birds, but the Common Starling is another proposition altogether. This species generally prefers to forage on invertebrates that live in pastures or in the top few millimetres of the soil. In areas where there is extensive irrigation of other pasture crops during late summer and autumn (e.g. some lucerne crops), starlings do not appear to be a problem for nearby grape crops. If so, then, management of Common Starlings may also involve providing alternative foods or feeding areas for the birds at critical times

“..... Given that birds move freely over a relatively wide area..... revegetation does not necessarily need to be done near vineyards and orchards to be effective.”

Have you a short story of interest that you feel may be of value to the Viticare Newsletter? If so, please forward to;

hogan.gerard@saugov.sa.gov.au

Satellite Technology Set to Improve Viticulture Production.

by Dr Rohan Rainbow, Southern Precision Agriculture Association (SPAA)

The advent of global positioning systems technology or GPS is beginning to provide significant scope for agricultural industries to accurately measure variation in soils and yields. Mr Malcolm Sargent, a Crystal Brook Farmer who is the elected president of the newly formed Southern Precision Agriculture Association or SPAA believes "Precision Agriculture or PA will be as important in the future of the horticulture and particularly the viticulture industry as it will be in broad acre crop production". SPAA was formed following an inaugural meeting of people involved in agricultural industries at Roseworthy in April 2002. "Financial assistance of the SA Grains Industry Trust has been significant in providing seed funding for the association. We are interested in input from other agricultural industries" Mr Sargent said. CSIRO Scientist and SPAA committee member Dr Rob Bramley has been

working on the application of precision agriculture to wine grape production for 4 vintages now, and had similar experience with grains and sugarcane production. "Amongst the many things emerging from the precision viticulture research, it is clear that the issue of variability confronts grape growers in just the same way as it confronts growers of just about any other crop. Vineyards are highly variable" Dr Bramley said. CSIRO grape yield mapping work has demonstrated that yield variation is typically 8 to 10 fold within a vineyard. "Through the CSIRO precision viticulture research, being conducted in partnership with the Cooperative Research Centre for Viticulture, Southcorp Wines and others, we have also been able to demonstrate very significant variation in crop quality" Dr Bramley said. "A detailed understanding of the land supporting the vineyard is critical to getting on top of the variation in the product being sent to the winery". However Dr Bramley said,

"there are a number of inexpensive technologies already available to assist growers in acquiring the knowledge needed for targeting their management within individual vineyard blocks". SPAA therefore provides primary producers in Southern Australia with a forum to share and address issues which are essentially generic. "I think its formation is a very positive step" Dr Bramley said. Southcorp Wines Richard Hamilton has a few years experience in the use of PA in viticulture: He said "Precision agriculture provides Southcorp Wines with opportunities for identifying and exploiting areas that meet grape specifications to maximize quality. The remaining areas provide opportunity for modifying management and inputs to reduce variability and maximize specification". "Vineyard managers generally know the variation in performance of their vineyards. Being able to delineate the areas of variation through yield monitoring and remote

sensing provide opportunity to maximize the profitability of their vineyards" Dr Hamilton said. Mr Sargent said 'Viticulturalist's and horticulturalists who want to join the move to precision agriculture should attend a special seminar being convened by SPAA at 2.00 pm at the Orlando Jacobs Creek Visitor Centre at Rowland Flat in the Barossa Valley on Friday the 2nd August 2002'. Speakers include Mr Malcolm Sargent SPAA president, CSIRO Scientist Dr Rob Bramley, SARDI's Dr John Heap. Dr Richard Hamilton and Mr John Matz of Southcorp Wines will speak on their experiences with precision agriculture.

For further information on SPAA and membership contact:

Dr Rohan Rainbow, Executive Officer
Southern Precision Agriculture Association (SPAA)
Phone (08) 8842 1568

Langhorne Creek (SA) Phone Lines Update

There will be a maintenance team from **Telstra Country Wide** focusing on the Langhorne Creek area over the next months.

This is your chance to report any phone line issues.

I will be liaising with the team manager.

Please contact me at the Langhorne Creek Wine Industry Council Office, ASAP with any problems (08 8537 3362) - Cheers, Lian Jaensch.



*Keeping the team in touch
through the newsletter*

Vintage 2002, Langhorne Creek

(by Lian Jaensch, Executive Officer Langhorne Creek Wine Industry Council, with thanks to Michael Potts (Wine maker, Bleasedale Winery, and Greg & Robyn Follett, Wine Maker, Lake Breeze Winery)

The growing season in Langhorne Creek this year was very mild, being one of the coolest summers on record. Only a few rare days pushed the mercury above 35°C. The cool season, with little rain, meant disease was restricted to nothing more than the odd spot of powdery mildew. This was of little concern and easily controlled. Ideal weather throughout March and April (warm, sunny and dry) provided slow even ripening of the

fruit throughout vintage and a relatively smooth intake of grapes at optimum maturity. The cool summer resulted in a late start to vintage, and slightly below average yields for both red and white varieties, but the quality of the fruit was extremely pleasing.

Cabernet Sauvignon in particular has produced some outstanding fruit this year, showing fantastic varietal character, plenty of colour, and superb flavours of

mint, blackberry and cassis. Langhorne Creek Shiraz looks excellent with wonderful ripe fruit characters of intense spice and plum. Malbec wines are showing signs of being the best for many years with inky colours and terrific depth of spice, raspberry and plum flavours. The Langhorne Creek reds are showing tannins that indicate the resulting wines will have great structure and a long cellar life.

Regional whites also fared well from the mild weather, having excellent acid balance and attractive flavours and aroma. Verdelho and Chardonnay are producing vibrant, fresh characters of citrus and fruit salad.

Although harvest was a week or so later in the Langhorne Creek district, with some fruit still coming off the vine into the second week of May, this merely bares testament to the idyllic autumn conditions the

CRCV Research to Practice –

Viticulture Workshop Update, 2002, further enquiries, KAREN GREEN– 903) 9210 9222

Integrated Pest Management

8/9	July	NSW	Mudgee
10/11	July	NSW	Hunter Valley
4/5	Sept	VIC	Rosebud
6/7	Sept	VIC	Lancefield
23/24	Sept	SA	Eden Valley/Barossa
25/26	Sept	SA	Langhorne Ck
10/11	Oct	VIC	Yarra Valley
4/5	Nov	SA	Lenswood

Grape Vine Nutrition

4/5	Sept	SA	Langhorne Ck
10/11	Sept	NSW	Hunter Valley
12/13	Sept	NSW	Canowindra
no dates		NSW	Griffith
24/25	Sept	VIC	Mildura
17/18	Oct	SA	Naracoorte

Water Management for Grape Production

2/3	Oct	NSW	Cowra
16/17	Oct	SA	Langhorne Ck
29/30	Oct	VIC	Mildura

Winegrape Quality Management

23/24	July	VIC	Wangarratta
29/30	July	NSW	Hunter
1/2	Aug	NSW	Mudgee
20/21	Aug	NSW	Orange
22/23	Aug	NSW	Cowra
3/4	Sept	SA	Riverland
5/6	Sept	SA	Tanunda
17/18	Sept	VIC	Robinvale
19/20	Sept	VIC	Swan Hill
2/3	Oct	TAS	Launceston
22/23	Oct	NSW	Griffith
19/20	Nov	SA	Naracoorte
21/22	Nov	SA	Adelaide Hills
Jan 2003		WA	Albany/Swan

Spray Application

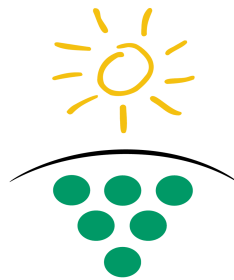
16/17	Sept	SA	Clare
19/20	Sept	SA	Barossa Valley
24/25	Sept	NSW	Mudgee
1/2	Oct	VIC	Geelong
3/4	Oct	VIC	Mornington Peninsula
22/23	Oct	NSW	Orange
4/5	Nov	NSW	Hunter Valley
7/8	Nov	SA	Langhorne Ck
26/27	Nov	SA	Berri

.....accelerating the uptake of new technologies

For further information,
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Langhorne Creek Vine Improvement Committee (LCVIC) Audit Report

by Rick Trezona, Administrative Manager to the Langhorne Creek Wine Industry Council.

On Thursday, 20th June, 2002, the Langhorne Creek Vine Improvement Committee was audited for the ongoing accreditation under the National Vine Accreditation Scheme. The scheme has been developed to improve access to quality propagation material for the Australian grape industries. With the accreditation, LCVIC is able to provide certified cuttings from clonal source material established in the Langhorne Creek district.

The audit was conducted by an independent auditor, Michael Awaballa, using as a guide the *AS/NZS ISO 9001 Quality systems – Model for quality assurance in design, development, production, installation and servicing*. Wayne Farquhar, Executive Officer of SAVI, attended and LCVIC was represented by Cutting Manager, Committee Member and Treasurer, Heather Tucker, and Rick Trezona.

The day commenced with the inspection of LCVIC records where 3 source

blocks were randomly selected for specific inspection. Field maps, ampelographers reports, health inspection reports and cutting managers inspection sheets were scrutinised and details later checked in the field. Ordering procedures were also audited.

The group then went out to the cutting team where the worked was physically checked for cutting to specification, numbers and identification. Cutting summaries, quality control inspections, stock summary records, cutter identification, cutter instructions and procedures were all checked. The cutting team was made up of Jenny and Reg McConnell, Bev and Peter Gray and Trapper Holdsworth.

The auditor was well satisfied with his inspection and gave continued certification. In his report he made the comment "Particular note is made of the commitment in not only addressing the issues raised including opportunities for improvement, but also the

noticeable enhancement and modification to the system ensuring further improvement and hence effectiveness".

In the course of the day Wayne Farquhar commented on the facilities now at SAVI, Nuriootpa, where trials can be carried out with the wine making of small batches of fruit from clonal material. Last vintage he made approximately 50 litres each of wine in a controlled trial from a number of chardonnay and riesling clones to provide a very direct comparison. He expressed that these facilities would be available for fruit from Langhorne Creek.