

COOPERATIVE  
RESEARCH CENTRE  
for  
VITICULTURE



Growers sharing information with other growers

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**Disclaimer**

The information contained in this newsletter is often written by growers and published in an unedited form. As such, it should be used as a guide only. The Cooperative Research Centre for Viticulture accepts no responsibility for the consequences of the use of the information.

## Progress in the Murrumbidgee Irrigation Area and the South West Slopes of NSW

By Carol Plummer  
(National Wine and Grape Industry Centre, Wagga Wagga, NSW)

All trials within the Murrumbidgee Irrigation Area (MIA) and South West Slopes have commenced collecting data.

Both the MIA and South West Slopes regions have endured a difficult season with late frosts and low seasonal temperatures.

There were some worries about the Regulated Deficit Irrigation (RDI) trials.

Can you imagine running an RDI trial on a frost-affected vineyard? Fortunately, in this case the grower has mid-row irrigation taps that meant that RDI would only be applied to the healthy unaffected vines.

The frost affected section of the vineyard, while is unlikely to yield significantly, is contributing to the On Farm Trials project by having its growth and recovery monitored as an individual trial.



*Frost damage to new grape shoots*

The seasonal variations experienced this year demonstrate the necessity for the majority of trials to be undertaken over more than one season.

## Action in the Hills

By Maarea Karetai, Adelaide Hills

The Adelaide Hills OFT Group are hosting a workshop for potential members on 19 February at the Lenswood Research Centre. The National Coordinator, Natalie Laukart will be attending to talk about other trials throughout Australia and to hear about the progress of some of the local trials

and the experiences of the participants. The group will also be discussing a potential region-wide project on how best to manage crop yields. This will include trialing pruning methods, irrigation use, canopy management, crop thinning etc and the aim is to provide some basic information for growers throughout the Adelaide Hills.

One trial in which molybdenum has been applied in order to effect fruit set in Merlot has heralded some extraordinary results - more to come on this one, watch this space.

The Adelaide Hills viticultural discussion list is now in place and working well. It is free, useful and current. Anyone can subscribe by sending an e-mail to [ahwrlist@esc.net.au](mailto:ahwrlist@esc.net.au) and including the word "subscribe" in the subject. Get involved!

## Californian study tour – compost in horticultural production

By Kevin Wilkinson, NRE Knoxfield

Expressions of interest are invited for a Californian study tour on the use of compost in horticultural production. The five-day tour will take place between 28<sup>th</sup> April and 4<sup>th</sup> May 2002.

This is a national tour intended for growers as well as compost producers and others involved in the use of compost in horticulture. The tour is being organised by Bob Paulin from the Western Australian Department of Agriculture, with assistance from Kevin Wilkinson (Department of Natural Resources and Environment, Victoria).

Potential benefits to growers from using compost include reduced and more efficient use of fertilisers, irrigation and pesticides;

improved crop yield and quality; improved soil quality; and reduced risk of nutrients leaching into groundwater. The use of compost will also make it easier for growers to meet an increasing demand for safer, “clean/green” horticultural produce.

Over the last decade, the use of compost in Californian horticulture has increased significantly. The tour will examine both the production and use of compost and related products in a range of crops, but with particular focus on the vegetable and viticulture industries. We will also meet with researchers, consultants and extension specialists and visit research facilities. A major aim of the tour will be to identify aspects of compost quality that are important to horticultural production.



The tour starts from Los Angeles and will include the Central Valley, the University of California at Davis and the Salinas Valley. Tour costs are \$3,200 to \$3,500, depending on departure point, and include airfares, tour transport and accommodation.

Expressions of interest in taking part in the tour should be made as soon as possible. Confirmations, including a 10% deposit,

will be required in early March. For further information contact Bob Paulin, Department of Agriculture Western Australia on phone (08) 9368 3308, mobile 0419 912 629 or e-mail [bpaulin@agric.wa.gov.au](mailto:bpaulin@agric.wa.gov.au), or Kevin Wilkinson at Institute for Horticultural Development, Knoxfield, on phone: (03) 9210 9275 or e-mail [kevin.wilkinson@nre.vic.gov.au](mailto:kevin.wilkinson@nre.vic.gov.au)

## Salinity Management at Kayinga Vineyard, Langhorne Ck

Adam Jacobs A.D.App.Sc (viticulture), Director, Vitivise Pty Ltd.

The salinity management program adopted at Kayinga Vineyard at Langhorne Creek was implemented last year and

is proving to be extremely successful. Saline groundwater in East (Triangle) and South blocks has subsided and to a sustainable level in line with design specifications allowing for optimum vine growth.

Implementation of the salinity management plan has seen both areas improve in regard to soil structure, vine growth and cropping levels. (see vine measurement table) This table represents the com-

mencement of tabling data so that a monitoring process can evaluate the program ensuring that it performs to investor and management's expectation.

## Salinity Management at Kayinga Vineyard ... continued

Block	Prefix	Variety	Treatment	Average shoot length(cm)	Average # shoots	Average # bunches	Average Cordon length (cm)
South	C	Shiraz	ABWC trial	45.8	26.4	33.3	108
			Kayinga trial	40	28.3	32.5	104.5
			<b>Control</b>	<b>74.5</b>	<b>29</b>	<b>38.9</b>	<b>111.5</b>
	D	Cab Sav	Kayinga trial	43.8	24.4	35.5	102.5
			<b>Control</b>	<b>58.5</b>	<b>29.5</b>	<b>43.5</b>	<b>106.8</b>
East	A	Merlot	ABWC trial	47.8	27	24.7	101
			Kayinga trial	46.3	30.7	25.5	102
			<b>Control</b>	<b>57</b>	<b>31</b>	<b>30.7</b>	<b>109</b>

Note: 1. (ABWC) Angus Bremer Water Committee has collaborated financially to assist in project development by the comparing the construction of drains in closer row proximity. ( ie every 4 rows compared to 6)

2. Control relates to areas outside the saline perimeter

As depicted above there are some interesting results in relation to treated areas compared with control, however the next data collected will be related to ripening aspects with baume and bunch weights which will indicate whether saline water is affecting ripening and cropping processes.

Tasks carried out according to the management plan to date are as follows:

1. Applications of gypsum and mulch under vine to improve soil moisture content and soil structure by reducing soil sodicity. Mounding of under vine areas has also been incorporated with these processes.
2. Soil moisture capacitance probes to plot irrigation water movement and saline water upward movements.
3. Planting of some 1400 Casuarina obesa around perimeters of

East and South blocks to assist in the drawing up of excess saline water that may rise to the surface.

There are 850 more trees planned for this year’s winter planting program to bulk up existing plantings. Tree lines have drip irrigation applied.

4. Drainage pits, pipes and wetland areas in accordance with the design and specifications set.
5. Monitoring program by assessment of growth rates.(as seen by above data)
6. Rootstock planting to assess variability of planting material. More rootstocks will be also planted this spring.
7. Test wells to study the draw down of saline water within the locations. This will also determine saline water movement over a larger area.

Saline water that has been pumped from the aquifer is flowing constantly and has been confirmed via meters at the evaporative wetland. They are as follows and represent kilo litres

(ie 1,000,000Litres equals 1000kl)

South block; 14<sup>th</sup> November 01 - 4327 kl, 11 December 01- 5268 kl and 02 January 02 – 5728 kl.

East block; 14<sup>th</sup> November 01 - 1730 kl, 11 December 01- 1913 kl and 02 January 02 – 2044 kl.

Overall, visual inspections of saline drainage water being pumped is pleasing for viticulture at Kayinga Vineyard, whilst measurement results being obtained by vineyard manager Nick McDonald of FABAL Pty Ltd in relation to project performance is proving a realisation that the project is succeeding.

This information will assist in monitoring for performance ensuring growth

rates and cropping expectation pertaining to quality occur so that a sustainable environment for all stakeholders exists.

I am very pleased to submit this update report which shows a favourable outcome so far as so soon after the adoption of the saline management plan. A continuance with monitoring saline water ground movements in synergy with wine grape quality assessment will be paramount to the success of the project.

Along with testing performance various applications of mulch, gypsum and cultural activities such as cover crops in the coming seasons will ensure viticultural operations are maximised and saline ground water movements do not have an affect on grape and wine quality.

## Managing European Wasps in Tasmania

*By Mick Statham, Tasmanian Institute of Agricultural Research*

Wasps first arrived in the State almost 50 years ago. However only in the past few years have the wasps have been causing significant losses in vineyards and orchards and are also a nuisance at outdoor social events, particularly around the Tamar district.

I started the Tasmanian research on wasps in 1999 with a small trial designed to replicate work published by a New Zealand scientist, Eric Spurr. The technique uses meat bait which is carried back to the nest by worker wasps to feed larvae. Poison is therefore introduced directly to the nest. This initial trial using fish as bait resulted in a 92% reduction in wasp numbers but posed two problems. Firstly, the insecticide used, was not registered in Australia, and secondly, mammals, in this case quolls, ate the baits each night.

In 2000 I conducted further trials utilising GWRDC RITA project funding using different protein baits and attractants suggested from American literature. I also worked on developing a feeder which was acceptable to wasps but kept the baits inaccessible to mammals. So far, the only other creatures to be

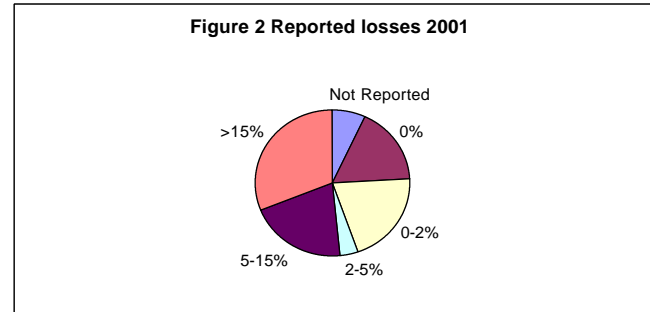
trapped have been blowflies.

Work in one vineyard indicated the potential for significant losses of production, particularly in late-picked fruit as this is the period when wasp numbers are peaking and demand for sugars is greatest.

In 2000 a survey form was included in a Vineyards Association of Tasmania newsletter to assess the perceived effect of wasp damage to fruit. Of the 14 replies, from throughout the state, all except 1 considered wasps to be a problem and the following estimates of yield loss were recorded (Figure 1).

Perceived damage appeared to be spread over a number of varieties, without any one standing out as more preferred than others.

A similar survey in 2001 (Figure 2- 29 responses) showed more reports of greater damage than the previous year, with losses of up to 60% (6 Tonnes of fruit) in one block of one



vineyard, and an overall 50% loss in another vineyard.

The increase in perceived damage may be a consequence of the increased number of wasps present in the state in 2001, or an increased awareness of the problem, rather than a specific increase in numbers in vineyards. However, it demonstrates the potential for loss which can occur.

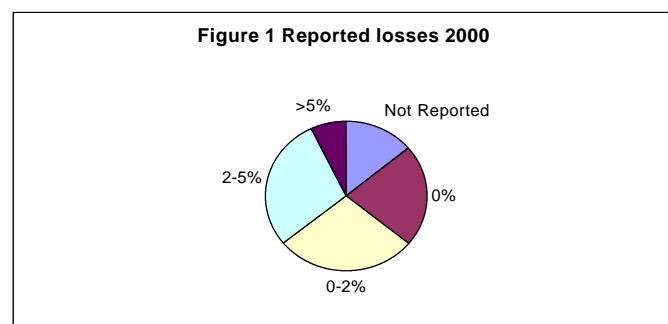
Of the respondents who reported damage, varieties most affected were Pinot Noir 15 reports, Chardonnay 7, Pinot Gris 4, Sauvignon Blanc and Traminer 2, and Riesling, Schonemberger and Muller Thurgau 1 report each. Most growers listed more than one variety being damaged while 6 reported no difference in degree of at-

tack from the previous year.

The results from 2001 were very good with the best result numbers of wasps dropped from an average of 260 coming to a feeder in 10 minutes to 2 within 2 days.

While these introduced pests are fully established and there is no hope of eradicating them, these results show ever sign of an effective control option being available next season as a registered product for those growers facing current problems with this pest.

For more information contact Dr Mick Statham on phone 03 6336 5339 or e-mail : Mick.Statham@dpiwe.tas.gov.au



## Program on the control of the European Wasp in SA

By Dennis C Hopkins and  
Glenys M Wood SARDI

The introduced European wasp (*Vespula germanica*) is now well established in South Australia and the possibility of eliminating this pest is minimal. Control of European wasps currently involves nest tracking and identification followed by nest destruction. In this state, councils are the major participants in providing nest destruction services as part of the European Wasp Control Program. The program arises as the result of an agreement between State and Local Government to develop and implement a program for control of European wasps in South Australia.

Research on the control of the European wasp by de-

veloping a chemical baiting strategy is in progress. This study is part of a collaborative project developed by SARDI and The University of Adelaide looking at chemical baiting (short-term) and wasp ecology and biological control (long term).

European wasp nests are not always easy to locate and treat, particularly those in heavily vegetated reserves or rough terrain. One method to address this issue, and also reduce wasp foraging pressure locally, is the use of toxic baiting. Recent studies have shown that toxic baiting can reduce wasp foraging pressure and nest populations.

The current project aims

- to work collaboratively with members of the research team

- to further develop a chemical baiting strategy which can be used to suppress foraging wasp activity and reduce or control nest populations in inaccessible areas.
- examine a range of pesticides which have potential for use as in toxic baits
- produce efficacy packages for promising actives for their registration with the National Registration Authority.

A useful website with further information and a useful wasp identification guide can be found at <http://www.sardi.sa.gov.au/crops/entomolo/entomolo.htm>



*A wasp worker feeding on a toxic bait*



*A baiting success - dead wasps around the entrance to an underground nest*

## Chemical Baiting

By Glenys Wood, SARDI  
SARDI are developing a toxic bait system for use against the European wasp. Foraging wasps are attracted to a toxic bait, which they collect and take back to their nests. The poison is passed around the colony, killing not only the foragers but also other wasps within the nest. In this way entire nests can be killed using very small amounts of

poison. The use of protein baits ensures that most other insects are not affected as they will not be attracted to the baits. The baits contain a very low concentration of insecticide, making them relatively safe for humans and animals.

This system can rapidly solve the problem of nuisance wasps. It is applied where the wasps are causing a problem – in a back

yard or on a reserve etc. It also removes the need for the difficult and time-consuming process of locating nests, which are typically several hundred metres away. The system is currently being tested in and around Adelaide, and it is hoped that this will result in a commercial product becoming available in the near future. This would be the first pesticide registered for

baiting wasps in Australia, and would have the potential for worldwide use.

For further information contact Glenys Wood on phone (08) 8303 9660 or e-mail wood.glenys@saugov.sa.gov.au

## European Wasp management in Victoria

By Noel Ainsworth, CRCV

There has also been some work recently completed by Greg Lefoe of NRE at Frankston on chemical

baiting funded by GWRDC. This final report on the success of chemical baiting has been submitted and should be

available soon. For more detail contact Greg Lefoe on phone (03) 9785 0158 or 0409 847 979 or e-mail g.lefoe@dce.vic.gov.au

## Role of the seasonal worker

By Rick Trezona, Langhorne Creek

With vintage just beginning, planning has commenced at Langhorne Creek for the recruitment of hundreds of casual workers to come into the region and attend to the winter pruning. These people are an essential part of the industry and come from the broadest possible spectrum of our society. Experienced and inexperienced, work hardened and those looking for their first job, from students to retirees, from those between jobs to those travelling Australia, the full range become involved in this activity.

Seasonal workers do form part of the local community, seeking the normal range of accommodation, goods and services. They contribute with involvement in community activities, entertainment and sport. Those with experience who come back each season are a wonderful asset. They know the systems, develop an 'ownership' of the district

or of particular vineyards and take pride in their work. They assist with training newcomers and developing a team. The regulars are really worth encouraging back from one year to the next.

Health and safety continue to be an issue with seasonal workers. Whilst most vineyard managers (host employers) recognise their responsibilities, some still regard that when they engage a contractor, they have no further concern of the people working in their vineyard. In South Australia, contractors are responsible for the workers' compensation of their employees. However, both the contractor and host employer are responsible for health and safety matters. These responsibilities are, essentially, to provide a safe working environment, safe systems of work, training and information, supervision, and protective equipment if it is needed. The host employer needs to be able to show that these responsibilities have been carried

out. A very important part of these responsibilities is induction onto the work-site and supervision.

There is evidence that authorities are targeting vineyards on Occupational Health and Safety matters and action has been taken where host employers fall short of meeting the requirements.

The most difficult part of organising an OH&S system in a vineyard is just getting started. There are many resources available, but they all seem to come in manuals the size of telephone books. WorkCover have a good website and you can download much of what is needed. Your WorkCover agent, local grower association, local regional development organisation may also help. A good contractor will see that all is in place for workers to work safely at the commencement of a contract. This should include the OH&S system on the property. The contractor may also be able to assist in getting started with an

OH&S system.

Well trained and experienced people returning each season and working in a safe environment give great value for this huge investment necessary with the winter pruning. These people are worth looking after. A good Occupational Health and Safety system can be regarded by some as a burden. However, it is really a great benefit. It encourages not only safer methods of work, but better methods of work. An industry with less workers' compensation claims benefits with reduced levies which, in turn, result in a better return to the grower.



## Irrigation decision making – testing the theories

*By Andrew Bengler, Langhorne Creek*

Developing irrigation decision-making skills would have to be one of the most valuable of 'on farm trials'. By treating the acquisition of these skills as a trial you are recognising the trial and error nature of irrigation decision making. Just as you constantly need to calibrate a vineyard sprayer you also need to calibrate irrigation decisions. Such calibration accommodates seasonal climatic conditions, changes to soil physical properties through management strategies, changes to cropping levels etc.

To start our trial we looked at irrigation strategies that had already been well researched or were in the process of being researched, and appeared applicable to our irrigation method (suspended drip tube), soil types and desired cropping outcomes. Three methods were selected for evaluation, Regulated Deficit Irrigation (RDI), Hardie & Martin (1990) 'A strategy for vine growth regulation by soil water management' (H&M), and a look at the principles of Partial Rootzone Drying (PRD).

In establishing the vineyard each dominant soil type was given its own irrigation zone, these zones constitute irrigation man-

agement units. To date experience has shown that some irrigation units respond best to RDI whilst others are best managed using the principles of H&M, the determining factors being soil type and the level and timing of winter rainfall. PRD in its true form has never been attempted because of the need to modify/redesign the irrigation system. Although, I believe that our irrigation management practices mean that portions of the vines rootzones go through a cycle of wet and dry, over a given growing season.

What we have learned from our trials is best summarised as follows;

If winter rainfall has not been sufficient to fill the vines rootzone to field capacity, irrigation is applied to achieve this prior to budburst. Field capacity is measured by physical observation, rainfall record keeping, and the use of soil moisture measurement devices.

Vine growth is monitored in relation to soil moisture levels, climatic conditions and soil temperatures in the rootzone. Application of irrigation water only occurs if it is required, this requirement is determined by measuring shoot and shoot internode length, leaf size and number, probable crop loads etc. We use standard viti-

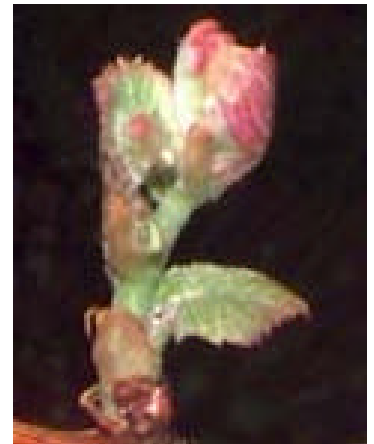
cultural measures in this determination.

In our region we are fortunate enough to be able use irrigation to regulate growth. Once shoot and leaf growth has ceased at the desired level (sounds simple, isn't) trial and error applications of irrigation commence. The desired outcome being no recommencement of shoot or leaf growth, but the maintenance of healthy and fully functional canopies. Past experience has shown that stressing vines is far too risky in our situation, rather we like to think we make them 'work hard'. The main reason we have abandoned stressing our vines is that the fine line between 'stress' and 'distress' is far too difficult to reliably manage.

Once the appropriate irrigation strategy for each management unit is determined for the given season it is basically implemented unless observation and measurement indicates that further 'fine tuning' is required.

This season the use of Bureau of Meteorology 'Meteograms' has assisted greatly in irrigation decision making, taking a bit of the guess work out of pre-planning irrigation applications.

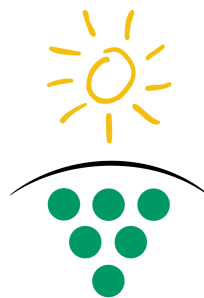
By trialing various irrigation methodologies we



*Matching water application to desired vine growth*

feel we have come up with an irrigation decision making strategy best suited to our needs. It's success requires constant monitoring and a fair degree of flexibility. The most important aspect has been the need to remain focused on the desired cropping outcomes by constantly evaluating the effects of all vineyard inputs, of which irrigation is proving to be one of the most important and easiest to control.

.....accelerating the uptake of new technologies



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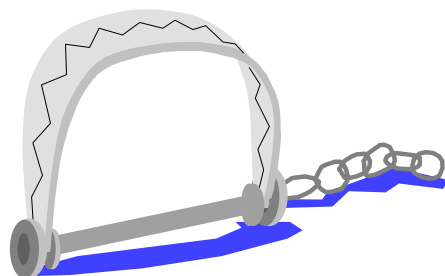
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## Around the traps

*By Noel Ainsworth, CRCV*

Steve Mitchell of Tumbarumba reported that the vintage for 2002 is looming and things are quite busy. David Braybrook presented some informative and interesting developments in Botrytis management although indications suggest a lower threat this year. Aside from this one of the key projects for the association is to strive for Phylloxera Free status by starting out with vineyard surveys this season.

Gayle Grieger has been spending considerable time looking into the implementation of RDI and PRD by growers, particularly in South Australia's Riverland. Gayle will report of some of her findings next month.



There was some feedback on the Grape harvesters article from last month with considerable opinion suggesting that self-propelled grape harvesters are at least as good if not better than tow-behind machines in hilly terrain.

Since last issue the CRCV web site has been completely remodelled. You can visit the site at [www.crcv.com.au](http://www.crcv.com.au). One item that may be of interest to regional groups is the op-

portunity to have a link to your regional site. Just contact the CRCV at e-mail [crcv@saugov.sa.gov.au](mailto:crcv@saugov.sa.gov.au). The back-issues of this newsletter are hopefully going to be uploaded to the site within the next month.

Several groups around WA seem interested in joining the network following visits in December including Frankland River, Margaret River, Blackwood Valley, Manjimup and Geographe. I guess we'll wait to see what happens.

Following a visit to Langhorne Creek in December it seems that a number of growers were eager to find out more from other growers about milk and oil formulations for powdery mildew control, management of Elephant Weevil, control of Bunch Stem Necrosis and any improvements that they may have been able to achieve with merlot set and establishment.

Similarly the Adelaide Hills growers are chasing any advice they can get on pre flowering necrosis, soil born pathogens and their treatment, causes of hen and chicken and lag phase estimation of bunch weights.

Any suggestions either through the newsletter or directly would be welcome.



*The new CRCV web-site home page*