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## Newsletter



*Grower Dennis Mills from Gol Gol, NSW, reviewing the survey with CRCV Water Use Efficiency Project Officer Deame Burrows from the Department of Natural Resources and Environment, Victoria.*

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### Cooperative Research Centre for Viticulture

Adelaide University

The National Wine and Grape Industry Centre  
(Charles Sturt University, NSW Agriculture)

The Australian Wine Research Institute

CSIRO

Department of Natural Resources  
and Environment, Victoria

Primary Industries & Resources, SA

The Australian Dried Fruits Association Inc.

Winemakers' Federation of Australia Inc.

Winegrape Growers' Council of Australia Inc.

Grape and Wine Research  
and Development Corporation

The Dried Fruits Research and  
Development Council

Wine Industry National Education  
& Training Advisory Council Inc.

## Grower needs 'tapped' to improve water use

About 6000 of Australia's grape growers in the Murray-Darling Basin will be targeted in a major research study to understand how and why they make irrigation decisions and determine what they need to improve their water management practices. The study, understood to be the largest ever undertaken in Australia's viticulture industry, is being conducted by the Cooperative Research Centre for Viticulture (CRCV) and funded by the Murray-Darling Basin Commission (MDBC). It is part of a project, launched in August last year, that aims to increase water use efficiency in the grape growing industries by five per cent over the next three years. The survey developed by the University of New England, is expected to take a short time to complete, and will be posted to wine grape, table grape and dried fruit growers in the Riverland, Sunraysia, Murrumbidgee Irrigation Area and Nyah/Swan Hill at the end of April. Results will be available in December this year.

The survey will include questions about vineyard characteristics, varieties grown, type of irrigation system, source of irrigation water and irrigation scheduling regimes.

Project manager Paula Gordon said the findings will be used to group growers according to their irrigation practices and needs. This information will enable researchers and extension staff to identify effective ways of delivering information to help irrigators make decisions that benefit them and the environment.

"The aim of the survey is to find out the sorts of products that irrigators are looking for, whether that be information, extension or technical products, that will help them make the best use of water for their circumstances," she said.

"Instead of assuming that everyone is looking to irrigate in a certain way we're undertaking product development, beginning with market research, that is similar to processes undertaken

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## CEO's Report

The Cooperative Research Centre for Viticulture is entering a very exciting phase of its seven-year term as it sees greater participation of industry in its research projects.

This industry involvement augurs well for the accelerated adoption of new practices, procedures and technologies arising from the Centre's research. This is the core mission of the CRCV and the one that will deliver greatest advantage to the industry. Our Viticare Initiative, reported on pages 3-5, is an excellent example of how the CRCV and industry are working together. There is so much to be gained by participating in research, even if it is only in a small way, and communicating with other groups who may be carrying out similar work. Our network of grower and winemaker groups are a powerful resource and through Viticare we are tapping into that. An industry that shares its knowledge and is actively involved in R&D is one that will have a prosperous future. We've made a good start but we can do more – we need a broad and extensive network of existing groups participating in Viticare. If you're not involved already, please call us.

### Vineyard Water Management Survey

I am pleased that the CRCV, with the support of the MDBC, will carry out this

large-scale survey of irrigation practices in the Murray-Darling Basin.

This sensitive area of our nation's water system clearly needs help and the CRCV is actively working with industry to ensure improved water use efficiency over the next five years.

If you receive a survey in the post, I encourage you to complete it so that we can help make your business more sustainable and profitable.

### Education and training accolade

Wine industry education and training is making huge strides with two people from Yalumba, Rob Bondfield and Sarah Will, being the first to complete all three levels of the industry's national accredited qualification. This is an extremely important achievement and we look forward to reporting on many more in the future.

### Reminder

If you've attended the first two-days of our award-winning Research to Practice™ workshops, don't forget to book in to attend one of the follow-up days which are being run this year. Demand is always high and places limited! See page 8 for further details.

*Jim Hardie CEO*

## Getting to the root of water use efficiency

*continued from page 1*

in the commercial sector. This is built on the premise that the irrigator or farm manager makes irrigation decisions that are best for his or her situation and perception."

Ms Gordon said irrigation decisions were often based on a multitude of factors such as crop type, soil, property size, financial situation, redevelopment potential, social influences and time constraints.

She said it was important to identify and understand this in order to develop strategies to improve water management that were useful and sought out by the irrigator.

The first part of the market research has involved conducting personal interviews with a small group of growers and technical people to identify key issues to address in the survey. The results of the survey will be disseminated to industry through various channels in December.

**For further information please contact Paula Gordon, Department of Natural Resources and Environment Victoria on (03) 5051 4500.**

## Newsletter

The Cooperative Research Centre for Viticulture Newsletter is produced bi-monthly. All contributions are welcome, especially reports from conferences, seminars and international trips.

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*Michael McCarthy*

## McCarthy receives US award

CRCV researcher Dr Michael

McCarthy has been invited to present the Honorary Research Lecture at the 2001

Annual Meeting of the American Society of Enology and Viticulture (ASEV) in San Diego in June.

The honorary lecture is delivered annually by someone the ASEV's Board of Directors considers to have made a significant contribution to viticultural science and wishes to formally recognise.

In return, the award recipient presents a one-hour lecture at the Annual Meeting. The proposed title of his lecture is: "From waste water to PRD: 25 years of winegrape irrigation research and development in Australia."

Michael's first experiment 25 years ago related to waste water.

He is also speaking at a one day Shiraz symposium the day before ASEV's Annual Meeting.

Michael is Leader of Project 2.3 'An integrated crop management (ICM) approach to grape production'.

## Viticare network hitting the mark



*Trevor Howard and Alexander Retief from the Southwest Slopes Vignerons' Association.*

The Viticare Initiative is a national, regionally-based network of groups set up by the Cooperative Research Centre for Viticulture to help adapt its outcomes to address specific regional situations.

It's increasing the uptake of new technologies by encouraging greater levels of participation by the viticulture industry.

In this three page feature, we report on Viticare's progress to date.

[crcv.com.au](http://crcv.com.au) [crcv.com.au](http://crcv.com.au)

Participating in On Farm trials, addressing sustainability, sharing knowledge that may lead to better and more rapid outcomes and receiving information about key issues are some of the major benefits of being a part of the CRCV's Viticare network.

Viticare Coordinator Noel Ainsworth said a total of 9 groups from New South Wales, Victoria, Queensland, Tasmania and South Australia had joined the network with about eight others part way through the process.

He said the CRCV was looking for groups who were willing to be active members to join the Viticare network. "We're looking for a minimum commitment in terms of their activity and a recognition that all members play an active role, rather than simply being recipients of information," he said. Noel said the CRCV was looking to form effective, working relationships with grapegrower and winemaker groups that would add value to what the groups currently provide their members. He said the last thing the CRCV wanted to do was create new groups when existing groups could join the Viticare network.

"We're building on local systems and

encouraging communication at a district level," said Noel.

He said the CRCV is also aware that many groups are taking on a much larger role than they have before, offering greater support to their membership which has meant there is a drain on resources and people's time.

Noel said participation in the CRCV's Viticare network offered better access to research information, the opportunity to participate in trials, share information, exchange ideas with other groups, and meet face-to-face with one of his team once or twice a year. These benefits could ease some of the pressure some groups were facing to provide greater service to members.

Becoming a member of Viticare involves an assessment of how a group functions and communicates. Noel also issues feedback sheets to five members of the group to determine what their main technical issues are and find out some background, so he can determine how the CRCV can best help them.

Members of the network are encouraged to communicate with each other as much as possible, visit other properties and, at a minimum, contribute to the Viticare monthly newsletter at least four times a year.

Noel said the CRCV's plans included continuing to expand the Viticare network and interacting more with groups to test and adapt new technologies being developed by the CRCV. The CRCV is developing simple, easy-to-read information packages for Viticare groups by June this year about the issues and topics being addressed by its research and education and training programs.



**If your group would like to join the Viticare network, please contact Noel Ainsworth on (08) 8303 9304.**

Viticare network groups include:

- Adelaide Hills Wine Region, Viticultural Committee
- Robinvale Wine Grape Growers
- Cowra Region
- Bundaberg & District Winegrowers Association
- Simeon (Loxton) Shiraz Quality Group
- Tasmanian Pinot Noir Group
- Southwest Slopes Vignerons' Association
- Langhorne Creek Technical & Training Committee
- Upper Hunter Winemakers' Association Inc.

## On Farm Trials to assist Merlot problems

The CRCV Viticare On Farm Trials project is giving growers the ability to successfully test and validate new technologies in their own vineyards. One key region in the project is the Adelaide Hills, with growers testing and validating new management strategies for poor fruit set and growth in Merlot vines.

"Because of acidic soils and cool conditions during fruit development, many growers in the Hills have experienced problems with fruit set and/or stunted growth in Merlot," said Dr Chris Williams, Project Leader of On Farm Trials in the Adelaide Hills Wine Region.



*Chris Williams with grape samples collected from On Farm Trials in the Adelaide Hills.*

With fruit set being a key regional issue, trials were established on five properties throughout the district, focusing on Molybdenum application to determine if it assists in growth and fruit set. Poor fruit set results in less bunches and under-developed green berries that are undesirable in winemaking. Although the region was keen to tackle the issue of fruit set through Molybdenum, it is also using On Farm Trials to test various compost and lime combinations for improving the health of the rootzone and another trial using windbreaks to improve fruit set. "Although it is still early days in the project, the researchers and growers have harvested the fruit from most trial

sites. The next step is to analyse the results, using the expertise of the researchers and growers," Chris said. "It is hoped the growers will continue their involvement so we can gain data for a number of seasons. This will give the growers involved and the region a much clearer picture, with useful results, hopefully leading to some valid answers."

Chairman of the Adelaide Hills Wine Region Viticulture Committee David Handyside said the Viticare project had given growers an opportunity to work with the researchers and an insight into how research is conducted.

"The trials will go a long way towards giving us some solutions for improving the sustainability and productivity of our vineyards and in the process we are

### *viticare network*

gaining a better understanding of research techniques and the importance of careful vineyard monitoring," David said.

The trials have already shown there is a large amount of variation in yield within individual properties. Chris said the trials were making the growers consider variability and the impact it has on the success of a trial.

"What is emerging is that solutions are going to be different for every property and different strategies need to be employed by growers to deal with these problems. This project is not only about solving some of their problems but about giving them the knowledge and skills to use replicates and test treatments that may help them to manage their vineyards more effectively," Chris said.

The advantage of researchers and growers working together is the ability to conduct trials on commercial vineyards, rather than just in research stations, David said.



*David Handyside, Chairman of the Adelaide Hills Wine Region Viticulture Committee.*

"The trials have given research a practical slant and although growers need to commit some time and some of their vines to the project, everyone involved in the Hills is enthusiastic about being involved and about the possibility of getting tangible results on their own properties," David said.

### **Other CRCV On Farm Trials include:**

- Irrigation strategies such as regulated deficit irrigation (RDI) and partial rootzone drying (PRD)
- Improvement of hardsetting and crusting soils
- Management of phosphorus nutrition
- Management of nitrogen fertilisers
- Amelioration of soil acidity
- The use of sacrificial canes to manage cropping levels
- The use of cover crops and mulch for soil moisture management and weed control
- Minimisation of pesticides for Botrytis management
- Chemical strategies for rust mite control
- Use of inter-row competition as a potential vigor control
- Use of Molybdenum to overcome specific vine disorders

## Enviro risk tool for growers

The Cooperative Research Centre for Viticulture is developing an easy-to-use tool for growers to help them identify potential environmental risks in their businesses.

The tool, a questionnaire, will help raise awareness among growers of what their environmental issues are and will be the first step in taking a more structured approach to environmental management on their properties, said the CRCV's Environmental Management Systems Officer David Baker.

"It's important for growers to realise that we're not imposing anything on them but to know that if they do want to put a system in place to manage their environmental activities then this is a good way to start," said David.

The CRCV will seek input from industry on its environmental management systems project at a workshop in the middle of this year, where feedback will also be sought on the environmental risk tool before it is trialed with three or four grower groups.

A major feature of the workshop will be the CRCV's development of three best management practice protocols covering: water and salinity management, pest, disease and weed management and community interaction.

"We'll be seeking feedback from industry about the content, scale and structure of the modules," said David.

"The modules will be 'how to' documents and will have a national focus while referring to regional guidelines."

It is expected that there will be a comprehensive version of each module as well as a simple fact sheet outlining the main principles. The modules should be ready by September/October this year.

A draft Environmental Code is also being developed by the CRCV that will present the industry's view on environmental management. It will be closely linked with the environmental management strategy being written by the South Australian Wine and Brandy Industry Association which complements the industry's blueprint Strategy 2025.

*For further information contact David Baker on phone/fax (08) 8340 0506 or email: dbaker@senet.com.au.*

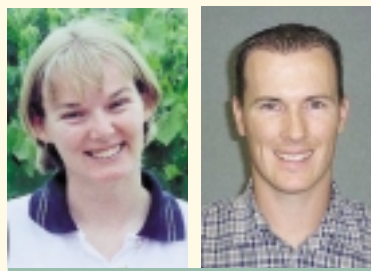
### *viticare network*

## Viticare link to expertise and tailored products

Being a member of the Viticare network enables groups to access the expertise of people like Gayle Grieger and David Braybrook. Gayle and David are Viticare's Industry Development Leaders and are a great source of information about the latest CRCV research, how groups can link into a range of projects that cater for their needs, and can also provide valuable advice.

Gayle, who has a PhD in soil science, specialises in water use efficiency while David's focus is pest and disease management and spray application. They both run the national Research to Practice™ workshops in these areas.

Developing new products that are tailored to meet the needs of various industry groups is a key part of their roles.



*Gayle Grieger and David Braybrook.*

Gayle said they were also focused on creating tools that would help accelerate the uptake by groups of new knowledge generated by the CRCV.

Another project they are working on is the development of a Viticare grower trials database.

David said this database will capture information about trials that have been conducted, what has worked, what hasn't, as well anecdotal information

about vineyard management. While it will take a couple of years to build, the plan is to make the information available to all members of the Viticare network on a searchable database on the CRCV website. Gayle and David are both currently working on producing information packages for Viticare groups that will keep them informed of the CRCV's latest research activities. They are also writing best management practice modules on water use and pest, disease and spray application management as part of the CRCV's Environmental Management Systems project.

*Gayle can be contacted on (08) 8568 6403 and David (03) 9210 9320.*

## Irrigation survey gives snapshot of efficiency

A winegrape irrigation benchmarking survey in the Sunraysia region has again confirmed that irrigation systems do not determine efficiency; management does.

The survey was commissioned by the Victorian and Murray Valley Wine Grape Growers Council Inc with funds sourced from the GWRDC and the Murray Valley Winegrape Industry Development Committee. It was conducted by NSW Agriculture and the Department of Natural Resources and Environment, Victoria.

The aim was to develop case studies and benchmarks for technology adoption through extension to Murray Valley wine grape growers.

The benchmarking survey is also an important link to the CRCV's Water Use Efficiency in Irrigated Vines project which is funded by the Murray-Darling Basin Commission. The findings will be used to chart progress in water use efficiency over the life of the project.

It measured a range of performance indicators including irrigation applied, crop yield, quality and irrigation application efficiency.

"The survey re-confirms that an irrigation system by itself doesn't determine how efficient water use will be," said Project Leader and CRCV participant Jeremy Giddings, from New South Wales Agriculture.

Although drip irrigation is strongly linked to higher application efficiencies, the survey revealed management of that system dictates its performance.

A total of 19 irrigators and 40 sites were included in the 1998-1999 survey and 31 irrigators and 63 sites in 1999-2000 covering seven winegrape varieties.

Jeremy said in the Sunraysia, an application efficiency of 85-90 per cent was desirable as the remaining 10-15 per cent was sufficient to remove harmful salts from the rootzone.

In 1998-99, 11 of the 40 sites produced an application efficiency greater than 85 per

cent. In 1999-2000, 37 of the original 40 sites participated and of those, 23 achieved greater than 85 per cent efficiency and only six sites did not equal or improve their performance from the previous year.

"Most irrigators did generally improve their performance in the second year" said Jeremy.

Increased rainfall in 1999-2000 is the main reason for this improvement, however more data was needed to make any conclusive statements about whether practices were improving.

The survey also revealed that those who performed well in the first year did so again in the second year.

"This shows that some growers can maintain good irrigation practices irrespective of seasonal conditions," said Jeremy.

However, the survey also indicated there



Jeremy Giddings

was huge variation in the amount of water being applied to vineyards that were producing the same return.

"For instance two growers may have produced the same yield and fruit quality, but one did it applying 8ML while the other used only 4ML. There are many other examples of this,"

said Jeremy.

"This shows that there is enormous opportunities to reduce water use with no detriment to production."

The results from the survey have been analysed and will be distributed to participating growers and presented to industry.

Jeremy said there were plans to continue the benchmarking study to establish long-term water use trends in the Sunraysia and Swan Hill regions.

*For further information contact Jeremy Giddings on (03) 5027 4409.*

## Comparing notes with the Californians

Cooperative Research Centre for Viticulture researchers and a group of Californian farm advisers got a chance to compare viticulture notes recently.

Eight advisers from the University of California Cooperative Extension Service spent 12 days on a national familiarisation tour of Australia's viticultural regions, research facilities and research in progress, which took in trial sites in Victoria, CSIRO Mildura, the Riverland, Coonawarra, the Waite Campus of Adelaide University and the Nuriootpa Research Centre.

They were from the counties of Napa, Sonoma, Monterey, Sacramento, San Joaquin, Madera, Fresno and Kern, which represent 75-80 per cent of California's grape acreage.

CRCV CEO Jim Hardie welcomed the opportunity to meet with the advisers to exchange information on technical chal-



*The Californian farm advisers and CRCV researchers visited trial sites at Nuriootpa in the Barossa Valley.*

lenges, research progress and establish further collaboration.

During the meeting, CRCV participants were briefed about the challenges posed by the increasing spread of the Glassy Winged Sharpshooter (vector of Pierce's Disease).

Jim said Australia could learn from how the Californians deal with the Glassy Winged Sharpshooter and also from the way they continued to re-establish their wine industry following phylloxera outbreaks since the late 70s.

## Education milestone reached

The CRCV's education and training project has reached an important milestone with two people from The Yalumba Wine Company (Barossa Valley) being the first to complete all three levels of the industry's nationally accredited qualification under the Wine Industry Training Package.

Rob Bondfield and Sarah Will, both Cellar Hands with Yalumba, have worked hard to achieve the national qualification, Certificate 3 in Food Processing (Wine).

"Although the training package has been in use since the end of 1998, it's great to see people finishing all three certificate levels of the package," said Peter Mansfield, leader of the CRCV's Project 4.2 'New industry-responsive education and training solutions'.

"We worked extensively with the industry in creating the package and this has ensured a sense of ownership and a real commitment and willingness to be involved with training," he said.

Yalumba Staff Relations Manager Nick Slape said the package had given them the opportunity to give their staff greater

skills, recognition for existing skills and a more integrated and strategic approach to training.

"The business climate is getting tougher, especially in international markets, making it important to have well-trained people. Offering comprehensive, nationally-accredited training can help attract and keep the best people," Nick said.

The package offers practical and comprehensive skills at Certificate levels 1-3 for all aspects of vineyard and winery operations. Units of training from other industry sectors, for example computing or hospitality, can be added to suit individual needs.

The high level of flexibility in the package was a key incentive for becoming involved, according to Nick. "We can assess and recognise the skills that our people already have so they don't need to go over the same territory again. Our team have been enthusiastic about the training and even the people who have been at Yalumba for many years are enjoying the chance to have their skills formally recognised," Nick said.

He said an added bonus was the ability



Yalumba cellar hands Rob Bondfield and Sarah Will have worked hard to achieve the national qualification, Certificate 3 in Food Processing (Wine). They are pictured with Bill Cant (far right) at Yalumba, Barossa Valley.

to include other company-specific training requirements such as occupational health and safety and communications into the one training package to meet both national standards and the specific needs of Yalumba.

Peter said the certificate levels of training were suited to the vast majority of wine and grape industry workers who did not require tertiary qualifications. He said the program allowed flexibility in combining the use of training institutions and workplace personnel to maximise the efficiency and effectiveness of training and assessment.

## Research to unravel key question

The yeast strains used in winemaking, beer brewing and bread making all have different physiological characteristics but it is unclear why that is so.

A Cooperative Research Centre for Viticulture project is aiming to discover the genetic makeup of wine yeasts and determine why yeasts behave as they do during grape juice fermentation.

Anthony Heinrich, a CRCV PhD student, is a member of Program 3, Sub-project 4.4 'Identifying genes for wine yeast improvements' and said the project was still at an early stage in answering this important question.

"The initial part of this project is to



Anthony Heinrich conducting tests in the laboratory.

discover what is in the genetic structure of wine yeasts that allows them to make good wine," Anthony said.

"A laboratory strain of *Saccharomyces cerevisia* has had its genome completely sequenced. Although this strain has different characteristics to wine yeasts, we can use the sequence information available to screen for genes present in

wine strains that are not in the lab yeast."

The research will compare the properties of wine yeasts to the lab yeast and attempt to identify the genes and proteins that code for winemaking attributes. Once these genes and proteins have been identified, their role in the winemaking process can be determined.

Anthony is based at The Australian Wine Research Institute (AWRI) and is supervised by Drs Miguel de Barros Lopes (AWRI) and Vladimir Jiranek (Adelaide University). He completed a Bachelor of Biotechnology (Honours) degree in 1998 and worked as a research assistant for two years at AWRI before starting his PhD in November last year.

## Important viticulture workshop sessions on soon

The Cooperative Research Centre for Viticulture is encouraging people who participated in its Research to Practice™ workshops last year to attend an important follow-up day to report on their progress and learn from others.

The award-winning Research to Practice™ workshops have proven to be a highly effective vehicle for communicating new inventions, technologies and protocols to the viticulture industry.

The first two days of the workshops were delivered across Australia during the growing season on four key topics: Integrated Pest Management, Water Management for Grape Production, Spray Application for Viticulture and Grapevine Nutrition. The third day follow-up sessions are being held from May onwards.

“The first two days of the workshop involve participants hearing from national and local experts about the latest research and development and then through a series of guided exercises and discussions, critically evaluating the information against specific local and regional conditions,” said Project Leader Robert Sward.

“Towards the end of the two days we ask the participants to commit to trialing at least one change in practice in their own vineyard.

“During the third (follow-up) day we discuss the changes they’ve made and look at what worked, what didn’t and what information was needed to find solutions. It is also an opportunity to present any new topics or information that participants may have requested.” Rob said even if those who had attended the first two days of the workshop had not completed their commitment or trialed any new practices because of seasonal or other factors, the third day of the workshop was still extremely useful and they were encouraged to come along.

“It’s a real problem-solving day and from the comments we get back from people who’ve been to all three days, the last one is often regarded as the most valuable as it gives them a chance to analyse whether changes in practice have been beneficial to the vineyard,” said Rob.



Gayle Grieger (standing) with a group discussing a topic in the Research to Practice™ Grapevine Nutrition workshop held in Campagna, near Hobart in February this year.

For further information contact Franca Horlock on (03) 9210 9222 or visit the CRCV website: [crcv.com.au](http://crcv.com.au)

### The Research to Practice™ follow-up workshops are being held on these dates:

#### Victoria

##### Spray Application for Viticulture

Merbein South	22 May
Mildura	23 May
Rutherglen	5 July

##### Integrated Pest Management

Rutherglen	5 June
Gippsland	19 June
Echuca	27 June

##### Nutrition

Nagambie	6 June
Robinvale	21 June

##### Water Management for Grape Production

Geelong	7 June
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#### Tasmania

##### Nutrition

Hobart	5 September
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#### South Australia

##### Spray Application for Viticulture

Angaston	11 June
Nuriootpa	12 June
McLaren Vale	13 & 14 June
Langhorne Creek	15 June
Coonawarra	11 July

##### Integrated Pest Management

McLaren Vale	16 May
Nuriootpa	17 May

##### Nutrition

Adelaide Hills	9 May
Langhorne Creek	8 May
Mt Benson	16 May
Barossa	14 May
McLaren Vale	7 & 8 June
Riverland	20 June

##### Water Management for Grape Production

Angaston	1 June
McLaren Vale	14 June

#### New South Wales

##### Spray Application for Viticulture

Griffith	26 June
Orange	27 June
Tumbarumba	28 June

##### Integrated Pest Management

Griffith	24 May
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##### Nutrition

Hunter	22 May
Mudgee	23 May

#### Western Australia

##### Water Management, Integrated Pest Management and Nutrition

Cowaramup	30 April,
(Margaret River)	1 May, 2 May

#### Queensland

##### Nutrition

Applethorpe	29 June
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