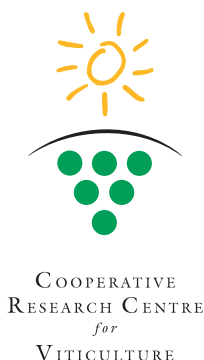


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Newsletter

Industry partners join CRCV to advance research outcomes

The delivery of new technologies to the grape and wine industry will be strengthened by new industry partners, who will be working with the CRCV over the next three years to accelerate outputs in a diverse range of projects. A number of small, medium and large viticultural and related organisations are in the process of becoming CRCV supporting participants. They will be involved in nine new projects that are being funded by supplementary funding awarded to the CRCV in the last round of CRC funding by the Commonwealth Government.

Two of the first companies to join the CRCV as supporting participants are irrigation and soil moisture monitoring specialists Sentek and molecular biology product manufacturer and distributor GeneWorks.

South Australian-based GeneWorks is involved in a project titled 'Understanding and improving quality through a genomics approach' and will be working with CRCV researchers **Dr Mark Thomas** and **Dr Chris Davies** who are based at CSIRO Plant Industry.

According to Project Leader **Dr Mark Thomas** this project will expand upon progress that has already been made in the Grapevine Gene Discovery Project. "We have already generated grapevine EST sequences and have started to research the use of microarrays as a tool for identifying gene expression changes that are associated with fruit of good or poor quality," Mark said. "This new project will allow us to evaluate the microarray technology over a wide range of samples from different seasons and carry out the essential statistical analysis on this extensive data set."

Collaborations with Orlando, BRL Hardy and Southcorp will provide access to field trials and vineyard for evaluation of the technology so that data collected in the field and winery can be related to the gene expression data.

Rob King, Manager Genomics Services at GeneWorks, says the company offers expertise in DNA synthesis, real-time PCR, sequencing and other molecular methodologies – important tools for this type of research – as well as skills in microarray technology and automation for efficiently testing large or small volumes of samples. "We are a unique supply company because we have a proficiency in custom manufacturing. We also have molecular biologists on our staff who understand the kinds of solutions scientists are looking for, which in the case of the CRCV is a diagnostic kit and simple assay for predicting fruit quality," Rob said.

Rob said the company was looking forward to working with the CRCV and gaining greater knowledge of the viticultural sector.

"We have worked extensively with SARDI and CSIRO Horticulture Unit and are looking forward to more involvement in the viticultural sector. Although we have been an independent company for a long time, the company was originally a spin-off from the University of Adelaide. We value these links with the academic world and this is one of the main reasons we decided to work with the CRCV."



Sentek's TriScan® product will be used as a management tool for salinity, water and fertiliser.



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Cooperative Research Centre for Viticulture

The University of Adelaide

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

Horticulture Australia Limited

Wine Industry National Education & Training Advisory Council Inc.

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CEO's Report

CRCV to help growers manage irrigation strategies

The coming season will be difficult and challenging for Australian grape growers in the inland irrigated regions of the Murray and Murrumbidgee Valleys – areas that account for a very significant amount of Australian winegrape production.

The possibility of water restrictions is very likely and there is a need for growers in these regions to have sound strategies for optimising production.

The CRCV is responding to this difficult situation and in the past few weeks a project has been developed that utilises CRCV grapevine yield simulation

software to assist growers with managing water restrictions.

Three facilitators have been appointed: **Max Tolson** in Mildura, **Harry Creecy** in Griffith and **Michael Roy** in the Riverland and as this newsletter goes to print, they will be running small-scale workshops to familiarise growers with VineLOGIC software.

VineLOGIC Education was released in May this year to universities and TAFEs as a teaching tool and it is the most current scientific knowledge we have. With the release of VineLOGIC Professional still some way off, which includes additional features for grape-growers, the aim of this project is to make this tool available to irrigators during the next few months when their need for this

kind of service will be at its peak.

The workshops held in Mildura, Riverland and Griffith are covering a range of issues including an overview of the current water situation and information about the VineLOGIC software simulation and how it can be used.

VineLOGIC allows for various inputs including grape variety, soil type, irrigation system, pruning and canopy management to be entered into the simulation. The software then simulates a likely outcome of the results of that particular vineyard scenario, providing information in graphs and text versions about yield, potential berry size and degree of vine stress.

It allows growers to compare different scenarios in their own vineyards, for example what will be the likely impact on yield and vine stress if they use 30% less water, and apply it in different strategies during the season.

Once the first round of workshops are completed, a broader implementation across the regions will be developed in conjunction with water boards and industry associations.

It is an exciting and timely project and we'll be working with grapegrowers, the water boards and industry associations in the regions to ensure this project fits in with the strategies they have in place to deal with the water restrictions and also get their input on the best way to get this information out to industry.

Lanning, the panel will be providing an independent assessment of the quality and relevance of the Centre's research and PhD training. The review is a scheduled feature of the CRC Program and we have found these reviews to be a highly beneficial benchmark for measuring our success to date and likelihood of meeting agreed goals.

New wine industry CRC

Planning for a new wine industry CRC has continued to progress, with a number of planning group meetings held. Chaired by **Chris Hancock** of Southcorp, the planning group has been responsible for developing the proposal focusing on the technical, scientific and education-based opportunities facing the industry over the next decade. We are currently speaking to potential participant research organisations and the next stage will be to secure their support.

On a final note, the Commonwealth Government have recently signed the variation agreement with the CRCV, marking the official start of the new projects to be developed from the supplementary funding we were awarded in the last round of CRC funding. In this edition of the newsletter we introduce Sentek and GeneWorks, two of our new industry participants and we look forward to introducing many more in the months ahead.

Jim Hardie
CEO

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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Year Five Review

During September we will be commencing Stage One of the CRCV's Five Year Review. The panel consists of Professor Andrew Walker, Professor and Geneticist in Enology and Viticulture at University of California, David, USA, Professor John Irwin, CEO, CRC for Tropical Plant Protection, Gordon Hoad, former head of Plant Science at the Long Ashton Research station in the UK, and Dr Malcolm Allen.

Assisted by CRCV Visitor Dr Shirley



Jim Hardie

Talking Technology success at WineTech 2003



Mark Krstic presented workshops on sampling strategies and managing colour.

Behind every bottle of wine produced is an extensive team of people with different skills and specialisations. And the same can be said for the range of machinery and equipment needed to produce that same bottle of wine. This point was vividly demonstrated at the recent WineTech 2003 exhibition at the Royal Adelaide Showgrounds in mid-July. The event featured a wide range of wine industry suppliers and provided another reminder of the significant size of the industry, which now employs 30,000 people directly and many more indirectly. Between the harvesters, distilling equipment and label displays was the Cooperative Research Centre for Viticulture (CRCV), providing visitors with the chance to attend a "Talking Technology" workshop covering a range of practical and topical issues. CRCV Technical Applications Manager **Ian Atkinson** said the CRCV plays a vital role in conducting collaborative research; communicating these outcomes directly to industry was the reason for the "Talking Technology" workshops. "The workshops gave members of the industry, primarily grapegrowers, the

chance to meet CRCV researchers, hear about some of the research that is happening and put that in a practical context for their own vineyards," Ian said. "Because the sessions were each limited to only about 15 to 30 people, the participants were able to ask a lot of questions of the presenters and take home really useful information." More than 230 people attended the "Talking Technology" workshops that covered: 'Sampling Strategies' and 'Managing Colour' presented by **Mark Krstic**; 'Measuring Colour' presented by **Bob Damberg**s; 'Cover Crops' presented by **Chris Penfold**; and 'Brix Measurement' and 'Brix and Colour Management' presented by **Kerry DeGaris**. The CRCV presenters were joined by **Vicki Waye** from the University of Adelaide's School of Law who presented a "Talking Technology" workshop on contract negotiation. Ian said the success of the CRCV's first "Talking Technology" seminars would lead to more such events being held in the near future. "There are a lot of really practical outputs stemming from CRCV research that will

help growers with aims such as using less water, being more aware of their environmental management and improving their grape quality. We will be working to ensure these outputs are accessible to industry and the Talking Technology workshops will form part of this strategy."

Proceedings from the workshops will be available from the CRCV website and will also be sent to anyone who is registered for the CRCV Information Service. This new email service provides a copy of the monthly Viticare newsletter and details of CRCV events and important news. To join this service visit the CRCV website www.crcv.com.au/viticare/vitinotes.



Above: CRCV Business Consultant Bridget Ransome was on hand to demonstrate VineLOGIC and AustVit software.



Kerry DeGaris presented workshops on brix measurement and management.

Environmental risk tool enhanced as CD-Rom

The task of identifying and assessing potential and existing environmental risk in Australian vineyards will be made easier by a CD-Rom that takes grape growers and vineyard managers through a step-by-step guide on how to start incorporating environmental considerations into their vineyard management. The CD-Rom contains the CRCV's Viticare Environmental Risk Assessment tool, which was previously only available in a hard copy format. According to the CRCV's **David Baker** the CD was developed in response to industry feedback and to make the tool more user friendly.

"While the initial tool was developed in late 2001, we have been working with industry since that time to refine the tool

and ensure it is in line with industry needs," David said.

"This process has been achieved through a combination of industry workshops, including a number in the grapegrowing regions of Mornington Peninsula, Margaret River, Clare, Eden Valley, Canberra, Goulburn Valley, Currency Creek and Mount Barker, as well as focus groups and broad industry consultation.

"These groups all have a keen interest in environmental management and provided us with extremely helpful feedback to prepare the tool for broader industry release. One of their recommendations was that the VERA tool should be available as a CD-Rom."

During its development phase the VERA tool was delivered to industry as part of a half-day workshop conducted by the

CRCV. This allowed the concepts of environmental management to be explained and to educate participants about how to get the greatest benefit from the tool.

"The VERA tool and accompanying workshop act as an excellent introduction to formal environmental management for growers or companies who are new to these concepts and want to get started, without necessarily wanting to go down the track of a full environmental management system," David said.

"Its value is in its ability to assist grapegrowers assess their own vineyards, identify their current problems and future needs. It doesn't provide the answers but it gets people thinking and in a way that links environmental management to their overall vineyard and business management."

The VERA tool provides growers with a generic list of questions about their vineyard management practices and helps them prioritise issues and encourages them to think about how existing or potential problems can be addressed. With an understanding of how to apply the VERA tool, growers can identify risks, establish their priority and prepare a simple action plan to start addressing these risks.

For more information contact EMS Project Leader Anne-Maree Boland at the Department of Primary Industries on (03) 9210 9203 or email anne-maree.boland@dpi.vic.gov.au



The VERA tool was refined with the assistance of industry workshops.

VineLOGIC Education is 'Flexible, user-friendly and effective'

The CRCV's VineLOGIC computer simulation package will enhance the current curriculum offered to Australian students studying viticulture at universities, TAFEs and secondary schools.

That is the opinion of University of Adelaide Lecturer in Viticulture, **Bob Barrett**, who says VineLOGIC is an extremely useful tool for expanding the skills of students and encouraging them to think about managing vineyards in a holistic manner.

"Viticultural students tend to be taught one thing at a time about vineyard management because this is the logical way of teaching all the various subjects. The VineLOGIC software will help students conceptualise how these different areas of management interact in a real situation," he said.

"While students have a lot of exposure to actual vineyards during their degree, this allows them to experiment with all kinds of management scenarios and compare the best practice for various regions in Australia which react differently due to things like climate, soil and irrigation water salinity."

Along with teaching staff from Charles Sturt University and LaTrobe University, Bob was involved in developing the package and then testing the software prior to its recent release. He said a primary aim had been to ensure the package was user-friendly and flexible. "While it is mostly university students studying viticulture using this package at the moment, I think it can also be used by high school students and TAFE students. At a university level we are also planning to use the package with Wine Marketing students and Oenology students who both need an understanding of viticultural management," he said.

"One of the best parts of the package is that the both the outputs and the scenario are both shown, allowing students to directly see how particular conditions have led to the outcome. The results are also available as a textual description or as a graph, providing students with a lot of information."

The University of Adelaide has purchased a number of VineLOGIC site licences and Bob said students will be able to extend their knowledge of viticulture by running a range of what-if vineyard scenarios. It takes students through a range of choices including: weather, soil type, pruning system, trellis system, variety, rootstock, irrigation water salinity, irrigation schedule, water table depth and soil salinity. Once these steps have been chosen, the simulation is run and a range of outputs are shown for the particular scenario. These outputs include time of dormancy, time of bud burst, time of veraison, time of ripening, potential yield, periods of stress and the severity of the stress and a summary of the weather patterns.

"One of the best parts of the package is that the both the outputs and the scenario are both shown, allowing students to directly see how particular



University of Adelaide students are learning about vineyard management using VineLOGIC.

conditions have led to the outcome. The results are also available as a textual description or as a graph, providing students with a lot of information," he said.

"The manual that comes with VineLOGIC is also a useful teaching resource, not only because it explains how to use the software and how the simulation works. It also contains example scenarios for students and asks them questions like 'What effect might irrigation have on berry weight and yield in this vineyard?'"

VineLOGIC site licences have been purchased by a number of Australian universities and TAFES. It is also available for high schools and individuals can purchase the VineLOGIC CD-Rom and manual. Sales and marketing enquiries can be referred to Bridget Ransome, CRCV Business Consultant on (08) 8303 9405 or 0403 008 331.

Research to Practice[®] licenses increase flexibility

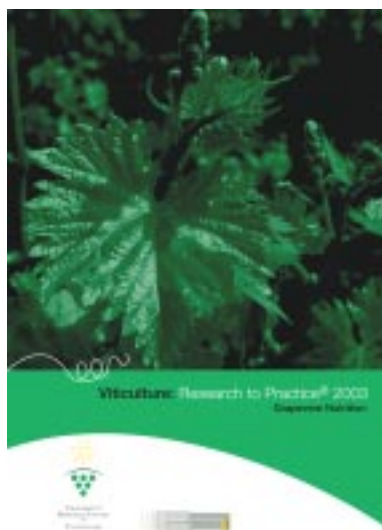
With four CRCV Research to Practice[®] workshops now available under license for training providers, companies and consultants, the benefits for industry will be a more flexible and accessible training option. While the workshops were traditionally conducted over two days, the licenses allow the content to be delivered in its entirety over two days, or broken down into smaller components.

"It means that TAFEs and universities can incorporate the Research to Practice[®] content into their courses, regional associations can deliver training directly to their growers and viticultural consultants can utilise the information," said CRCV Education and Training Manager, **Peter Mansfield**.

"We believe this system will also work well for medium and large sized wine companies, who can use the licenses to deliver training to their own viticulturists and their contracted growers when and where it's needed. For example if there is a problem with a particular pest or disease they can use the Research to Practice[®] material to run a short seminar addressing the issue."

The four workshops available as a license are: Grapevine Nutrition, Integrated Pest Management, Spray Application in Viticulture and Water Management for Grape Production. The cost of the license is \$400 (plus GST) for each topic, allowing companies and organisations to purchase all four workshops or just the ones that are relevant to them.

The license contracts will apply for the next three growing seasons and provide the licensee with the Research to Practice[®] topic information and delivery aids in hard copy and electronic formats, which will be updated at least once during the term of the license. Peter said the licenses would make the



training more accessible and affordable for grapegrowers and industry personnel wanting to improve, update or learn practical viticultural skills.

"We've had a number of training providers purchase licenses in the past month and we expect this to climb as we head towards Spring which is typically the most popular time of the year for this type of workshop," Peter said.

A list of companies and organisations who have purchased licenses is available from the CRCV website

<http://www.crcv.com.au/education/rtp/> for people to find their nearest provider.

The Research to Practice[®] Winegrape Quality Management Workshop will continue to be delivered in workshops by the CRCV for the 2003/04 season and will be available under license in the 2004/05 season. A schedule is available from the CRCV website www.crcv.com.au or from Karen.green@dpi.vic.gov.au.

For more information about the Research to Practice[®] licenses please contact Peter Mansfield on (08) 8373 7090 or email peter@winetac.com.au.

Organisations licensed to deliver Viticulture Research to Practice[®] training

Department of Primary Industries

Contact: Karen Green
Phone: (03) 9210 9229
Email: karen.green@dpi.vic.gov.au
Licenses: Grapevine Nutrition, Integrated Pest Management, Spray Application in Viticulture and Water Management for Grapevine Production

Davidson Viticultural Consulting Services

Contact: Di Davidson
Phone: (08) 8338 2540
Email: dvcs@dvcs.com.au
Licenses: Grapevine Nutrition, Integrated Pest Management and Water Management for Grapevine Production

Swinburne University of Technology

Contact: David Braybrook
Phone: (03) 9215 7212
Email: dbraybrook@swin.edu.au
License: Water Management for Grapevine Production

River Murray Training

Contact: Andrew Oliver
Phone: (08) 8582 3658
Email: aoliver@r-m-t.com.au
Licenses: Grapevine Nutrition, Integrated Pest Management, Spray Application in Viticulture and Water Management for Grapevine Production

Sunraysia Institute of TAFE

Contact: Jenny Collins
Phone: (03) 5022 3748
Email: jcollins@sunitafe.edu.au
Licenses: Grapevine Nutrition, Integrated Pest Management, Spray Application in Viticulture and Water Management for Grapevine Production

Hunter Institute of TAFE

Contact: Penny Dunstan
Phone: (02) 4923 7425
Email: hunter.courseinfo@tafe.nsw.edu.au
Licenses: Grapevine Nutrition, Integrated Pest Management, Spray Application in Viticulture and Water Management for Grapevine Production

New PhD researchers join CRCV



Stewart Field

Based at Charles Sturt University, Wagga Wagga, Stewart is working on a project titled 'Irrigation and nitrogen management effects on grapevine vigour and the role of cytokinins' under the supervision of Dr Bruno Holzapfel,

Dr Dennis Greer and Dr Jason Smith. Crossing the Tasman Sea to take up his CRCV PhD scholarship has ensured a hectic couple of months for Stewart – not only starting his research project in late May but also adjusting to a new country. Stewart has a background in plant science, with an Honours degree in Plant Science from Massey University in Palmerston, New Zealand. His Honours project focused on nitrogen strategies for the production of broccoli. He also completed a one-year Masters in Plant Science from the same university, focusing on hydroponic tomatoes. While he had planned to pursue a research career in the fruit and vegetable industry, the lure of a new challenge and the growth and opportunities within the viticultural research field led him to apply

for the CRCV scholarship.

The project is closely looking at vine vigour and how this is affected by a range of irrigation practices and nitrogen strategies, as well as assessing the role of cytokinins.

Stewart will be using a field trial at Hanwood Estate and conducting pot trials at the university to assess vigour and to investigate the impact of irrigation and nitrogen on shoot growth, flower numbers and bunch development.

Dougal Currie

After gaining an Environmental Science Honours degree majoring in geography from the University of New South Wales, Dougal spent a year traveling around the world, before returning to Sydney to work at the Manly Hydraulics Laboratory. This position involved the collection of environmental data to monitor the condition of Sydney's sewerage system.



The advertisement for the CRCV PhD scholarship prompted Dougal to return to full-time study, with the project encompassing a number of his interests and skills including environmental and water management and soil salinity – a key focus of his Honours project.

Dougal started with the CRCV in July and is based at the University of Adelaide's Waite Campus under the supervision of Dr Rob Murray, Dr Cameron Grant and Dr Mike McCarthy. His project is titled 'Impact of irrigation on plant-available water capacity of soil and on vine root growth' and aims to investigate the impact of conventional irrigation on the ability of soil to store plant-available water and to identify viable modifications of irrigation water quality and irrigation practice that minimise this impact.

Dougal said he has always been interested in agriculture and the sustainable use of resources, with his family running a mixed grazing enterprise in New South Wales. He is also looking forward to working in the viticulture industry and hopes to assist the industry with its aims to use water resources more effectively.

Industry partners

continued from page 1

Soil moisture monitoring manufacturers Sentek will be involved in a project of a totally different nature focusing on the environmental impact of nitrogen and water application.

Based at CSIRO in Griffith under the guidance of CRCV project leader Paul Hutchison, the aim of the project is to minimise drainage and ground water contamination from vineyards, in order to maintain a sustainable and economically viable grape production system.

"The project will be studying the impact of grape production on the vineyard soil and wider environment as well as examining changes in soil solution and how this relates to vine

nutrition uptake and status," Paul said. "One aim is to develop environment management systems (EMS) tools to improve the management of water and nutrient inputs and identify irrigation and nutrition strategies that ensure minimal drainage and groundwater contamination." A number of established field trial sites in Griffith and the Murrumbidgee Irrigation Area will be utilised for the project. Installed at these sites will be Sentek's new TriScan® product – a management tool for salinity, water and fertiliser. Horticulture Australia is also supporting this work. Sentek agronomist Peter Buss says the project has provided the company with an invaluable opportunity to be involved in a stringent research trial that will provide feedback on how to best use TriScan® and how it works in the field.

"We are excited to be involved in this project because salinity is a huge issue for all Australian agricultural industries, including viticulture," Peter said.

"Along with the removal of native vegetation, irrigation is one of the major contributors to salinity. This project is aiming to stop leaking irrigation which leaches salt and excess nutrients into the soil which build up and become soil pollutants after leaving the rootzone.

"The benefits will be improved irrigation, better nutrient uptake for the vines and reduced levels of soil salinity and nutrient pollutants – outcomes that will have significant benefits for the CRCV, Sentek and the entire viticultural industry."

For more information, visit: www.genetworks.com.au and www.sentek.com.au

Brief News



Visit the CRCV at Riverland Field Days

The CRCV will be teaming up with the Phylloxera and Grape Industry Board of South Australia to share a stand at the Riverland Field Days, September 10-11. A number of CRCV personnel will be available to answer any questions about the CRCV's research, education and extension programs.

Copies of the CRCV's popular new book 'Growing Quality Grapes to Winery Specifications' will be available and there will be demonstrations of the CRCV's new grapevine simulation software VineLOGIC Education. This software is currently being used by Australian education providers and by a CRCV project assisting grapegrowers in the Riverland to schedule their irrigation for this season, taking into account the likely water restrictions.

More information about the field days is available from www.riverlandonline.com/fielddays/.

New AusVit Chemical Database Available

An updated version of the AusVit chemical database will be available from the end of August. The database includes information on all chemical products registered for pest and disease control in

Australian vineyards and users can view product information, search for products for a particular disease or pest, check winery withholding periods, obtain registration information and maximum residue limits.

The chemical database is just one component of the AusVit Vineyard Management System software that provides a comprehensive decision support system for viticulturists to achieve target levels of efficiency, yield and quality.

The complete AusVit Vineyard Management System costs \$975 (including GST) and covers: pests and disease management; nutrition management; irrigation management; spray planning and recording; weather monitoring; and chemical database.

The Chemical Database can also be purchased separately for \$230 (including GST) and this cost also entitles users to annual updates of the database.

All registered users of the database will be contacted and will be able to download the updated version from the CRCV website www.crcv.com.au/products/ausvit at the end of August.

*For more information about AusVit contact **Bridget Ransome, CRCV Business Consultant on (08) 8303 9663.***

Diary Dates

September 10–11
Riverland Field Days
 Barmera
 Ph: (08) 8586 3204
 Email: fielddays@riverland.net.au
 Website: www.riverlandonline.com/fielddays

October 31
Wine Industry Outlook Conference
 Presented by the Winemakers' Federation of Australia and Winetitles
 Melbourne Exhibition & Convention Centre
 Website: www.winetitles.com.au/outlook

November 20
Australian Winegrape Conference
 Presented by Winegrape Growers' Council of Australia
 Mildura
 Ph: (03) 5021 5100
 Early bird registration: \$99 full registration or \$55 student registration (Available before October 20)

Your CRCV

The Cooperative Research Centre for Viticulture is a joint venture between Australia's viticulture industry and leading research and education organisations.



It promotes cooperative scientific research to accelerate quality viticultural management from vine to palate. Australian grapegrowers and winemakers are key stakeholders in the CRCV, contributing levies matched by the Commonwealth Government and invested by the Grape and Wine Research and Development Corporation in the Centre.

Newsletter Disclaimer

While every effort has been made to ensure the accuracy of the information in this newsletter, the Cooperative Research Centre for Viticulture cannot accept responsibility for the consequences of the use of this information. The document provides you with an explanation of research in progress and is a guide only.