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COOPERATIVE
RESEARCH CENTRE
for
VITICULTURE

Newsletter



CRCV Environmental Systems Manager, David Baker.

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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.

One step at a time for environmental management

Australian grapegrowers stand to benefit from a new CRCV environmental tool that will equip them with better management skills and improve their ability to demonstrate to wineries, statutory authorities and other interested parties that environmental consideration has been taken.

According to the CRCV's Environmental Management Systems (EMS) Officer, **David Baker**, growers are likely to come under increasing pressure from wineries buying their grapes and governments and councils to demonstrate that their grapes have been grown in a sustainable and responsible way.

The new tool, Viticare Environmental Risk Assessment Tool – or VERA – guides growers through a list of questions about their vineyard management practices, helps them prioritise issues and encourages them to think about how real or potential problems can be addressed.

“The aim of the tool is not to give growers rigid answers about what they should be doing, but to encourage and assist

them to take the first step in thinking about environmental management as one component of their vineyard,” David said. “The advantage to using the CRCV's VERA tool is that it forms part of a larger environmental management framework which builds toward a system that meets international standards.”

David said it was important to stress that not all growers would need a full environmental management system and that the tools being developed by the CRCV would cater for a variety of needs and help growers decide what level of structured environmental certification is appropriate for them.

VERA is currently in final draft stage and will be released soon. A number of trials with grower groups are being conducted before the tool's release.

If you are interested in being part of these trials or would like further information please contact David Baker on (08) 8340 0506 or Anne Maree Boland on (03) 9210 9222.

CEO's Report

The Cooperative Research Centre for Viticulture is a vital part of the long-term future and viability of Australia's wine and grape industries.

I am convinced that it will be the rapid adoption of leading edge research outcomes, innovative technologies and best practice management techniques that will enable our industry to remain internationally competitive and environmentally sustainable.

Specifically, through CRCV research, the industry is rapidly moving toward being able to:

- Grow grapes to meet colour, sugar, pH, tannin and flavour targets
- Detect long-term vine disorders such as Eutypa dieback early
- Deal with variable vine growth, yield and grape quality within vineyards.

From an environmental perspective, CRCV research outcomes will enable:

- More efficient use of irrigation water
- Salinity management
- A reduction in environmental impacts
- Credible environmental performance.

We are already producing significant outcomes in these areas and with adequate resources we can continue to achieve greater benefits for industry. And those

benefits don't just flow to growers and winemakers but rather to whole communities, urban and rural. A competitive, efficient, sustainable industry leads to economic prosperity and employment growth that is good for us all.

However, much of this could be at risk as the industry confronts a research-funding shortfall. 2002 is the year the industry has a big opportunity to secure the future of the Australian wine and grape industry for the current generation and beyond.

The Grape and Wine Research and Development Corporation is the body which invests grapegrower and winemaker levies into the research programs of the CRCV and other research organisations. The Commonwealth Government matches this contribution by offering up to 0.5% of the industry's "determined Gross Value of Production (GVP)" for that year. However, because industry each year contributes less than 0.5%, in fact only 0.26% of the estimated GVP, it is foregoing the opportunity for very significant additional funding. For example, based on 2000/01 values the amount the industry missed out on was about \$5.8m.

It is worth noting that the wine industry is contributing significantly less relative to the Gross Value of Production than other substantial primary industry sectors. Most other rural industries are contributing at, near and even above the 0.5% GVP level and receiving the full benefit of the matching Commonwealth dollar.

The GWRDC is proposing that industry increase its levy contribution to enable this full matching contribution to be claimed from the Commonwealth and the CRCV fully supports this.

Without the levy increase, the CRCV faces a 20 per cent reduction on its present R&D and education capacity.

In basic terms, we are going to experi-

ence an \$8m shortfall on current operating levels (cash and in-kind agency support) over the next three years unless industry supports the move to boost its R&D contribution.

Without additional industry funding research progress will be slower, we will lose some of our capacity to deliver outcomes to industry and to support their uptake, we will have fewer researchers and we will be less able to respond to industry's call for a greater focus on development.

While the R&D levy increase is being addressed, the CRCV has a new opportunity to apply for supplementary funding for new or complementary programs combining "research and commercialisation, technology transfer or utilisation and that particularly engages the participation of small to medium enterprises". Our submission deadline is May this year.

Under the guidance of the CRCV's Industry Reference Group we are preparing an application that will extend the cooperative arrangements and the range of outcomes that can be achieved within the current term of the Centre. The competition will be intense but if successful, we could have an additional \$3m in Commonwealth funds that must be matched by contributions from industry and the CRCV's joint-venture participants. Yet another opportunity that will rely on levy support.

Industry stakeholders, grape and wine producers are currently being asked to give serious consideration to a levy increase. The heart of the issue is the ability of the Australian viticulture industry to generate and rapidly apply new scientific knowledge. Promoting every opportunity to 'accelerate quality management from "vine to palate" is what the CRCV is committed to!

Jim Hardie
CEO



Jim Hardie

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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Collaboration on Eutypa ‘puzzle’

Developing an early diagnostic test for the grapevine trunk disease Eutypa dieback is proving more complex than scientists first thought.

CRCV PhD researcher **Richard Lardner**, who recently spent four months at the US Department of Agriculture in California, said American Vineyard Foundation (AVF) researchers have discovered the fungal toxin eutypine is not solely responsible for foliar symptoms, as was previously believed, and is not produced by all strains of the fungus, *Eutypa lata*.

“When a grapevine is infected with *Eutypa lata*, metabolites that are toxic to the grapevine are produced and transferred to the leaves, creating foliar symptoms,” Richard said.

“It was thought that eutypine alone was responsible for causing foliar symptoms, but recent research suggests a variety of compounds are capable of causing symptoms, which means we need to keep looking for a compound which may be used as a chemical marker for the early diagnosis of Eutypa dieback.”

Researchers from the CRCV and AVF Eutypa dieback programs have been working together since a collaborative agreement was struck in 2001. They are looking for a compound that is produced by all strains of *Eutypa lata*. If this is found, a diagnostic test can be developed to detect that particular toxin.

Richard said working in California with AVF researchers, Dr Russell Molyneux and Noreen Mahoney, had been of great benefit to him and that he had learnt a lot about the techniques used in this kind of research.



Richard Lardner in the laboratory at Adelaide University.

He is supervised by Drs Eileen Scott, Belinda Stummer, Trevor Wicks and Mary Cole as part of project 2.2.3 Pathology and diagnosis of Eutypa dieback in grapevines. His visit to America was supported by the CRCV visiting scholars program and a GWRDC travel grant. The AVF covered research expenses while Richard was in America.

Reducing Botrytis incidence in warm region vineyards

It is out of the laboratory and into the field for CRCV PhD researcher **Rachel Ashley** as she takes a holistic approach to studying vineyard management practices. For the past 18 months she has looked at a range of variables including irrigation, canopy management, Botrytis development and the resultant grape and wine quality.

She has recently narrowed her study to two key issues – the spread of Botrytis and how reduced irrigation impacts on vine physiology.

Of particular interest is how canopy and bunch architecture might play a role in the severity and spread of Botrytis bunch rot, with the aim of reducing Botrytis incidence with less chemical use.

“I am looking at how Botrytis spreads and how factors including canopy and bunch architecture and the number of spores present accelerate or halt the spread,” Rachel said.

“I am using a commercial block of Shiraz in the Sunraysia district which will give a better indication than glasshouse experiments of the best management practices for controlling Botrytis in warm region irrigated vineyards.”

Rachel has inoculated bunches of grapes with varying quantities of Botrytis spores and will use irrigation and canopy management practices, including PRD and minimal pruning, to see which practices are most effective in reducing the incidence and severity of Botrytis.

She will also study the impact of irrigation and canopy treatments on vine physiology – that is how the vine functions in response to imposed treatments. She will compare the vine response to standard drip irrigation and PRD.

Rachel is supervised by Peter Clingeffer, Dr Peter Dry and Dr Bob Emmett in this project 2.3.2 Improving sustainability and wine grape quality in warm region vineyards.

Viticare raising research awareness

The details and opportunities arising from the industry-focused research projects of the CRCV will soon be known by more Australian grapegrowers.

“While growers generally know the main areas of viticultural research such as quality and sustainability, and contribute significantly to the projects through their GWRDC levies, it is important that they are well-informed about current research and are well positioned to benefit,” said CRCV Viticare Coordinator **Noel Ainsworth**.

“To address this need the Viticare Network team has created 11 information packs that cover the main areas of CRCV research from water use efficiency to minimising pest and disease damage.”

The CRCV Viticare Network has now established a network of grapegrower groups across Australia and according to Noel the information packs represented the next stage in the Network’s aim to improve information exchange between groups and with researchers.

“We have trialed various information packs with a number of regional groups

who chose the topics of most relevance to them. This enabled them to then learn a lot about the CRCV and its research projects.”

Noel said the presentations also serve as a starting point to grower discussions. From the groups involved in the initial information pack presentations, a number have expressed interest in creating links with relevant researchers, taking it further with local trials or organising training activities in their districts.

“In response to the initial information packs developed and trialed, a further two information packs were developed to introduce what the CRCV is and does, and another to help groups go through a process of identifying and prioritising regional issues,” Noel said.

“In the next year we aim to further improve the delivery of information packs by tapping into the other regional service providers around Australia.”

For more information about the Viticare Network or the Information Packs please contact Noel Ainsworth on (08) 8303 9304 or ainsworth.noel@saugov.sa.gov.au

Viticare Information Topics

Quality

1. Assessing and managing vineyard variability and its affect on yield and quality attributes
2. Grape quality assessment (including Specifying quality parameters and Measuring quality)
3. Minimising pest, disease and pesticide contaminants
4. Managing vineyards to meet grape quality specifications (a) Dried fruit and (b) Wine grapes)
5. Improving fruit quality through plant breeding
6. Advancements in molecular plant breeding

Sustainability

7. Understanding grapevine water use efficiency (WUE) as an integrated management practice (including Tools and understanding, Strategies, Influence bunch architecture and disease incidence, Nitrogen requirements and Salinity)
8. Increasing understanding of the grapevine – environment interaction, VineLOGIC
9. Improving pest management
10. Environmental Management for the viticultural industry
11. Supporting changes in sustainability and quality with training and industry participation

Other

12. Introduction to the CRCV
13. Issue prioritisation for grower groups

Recommendations for Viticulture Research to Practice®

Due to the enormous growth in the grape and wine industry since the Viticulture Research to Practice® workshops were first run five years ago, the CRCV has engaged a specialist consultant to look at the program and provide recommendations for the future.

CRCV Education and Training Program Manager **Libby Boschen** said the workshops had been a key part in ensuring research outputs were quickly implemented in vineyards.

“It is important that the workshops keep their significance and high esteem in the industry. A specialist consultant will provide us with suggestions on how the current model can be changed to best suit the needs of the industry,” she said.

“This will ensure continued effective extension, optimum value for money for paying participants and wise investment of industry dollars within the CRCV.”

A steering committee of key stakeholders has been organised to advise the consultant and provide feedback. If you have experienced Viticulture Research to Practice® yourself and would like to offer ideas and suggestions, please contact Libby Boschen on 08 8373 7090 or email libby@winetac.com.au

Commercial vineyard development top priority for new Professor

The development of a 205 hectare property south of Adelaide, as a commercial vineyard for research and teaching, is a top priority for the new Professor of Viticulture at Adelaide University, Professor Steve Tyerman.

The Glenthorne Farm property was previously occupied by CSIRO before being purchased by the State Government and given to Adelaide University in June last year. It is proposed that a vineyard will be established in partnership with BRL Hardy.

“The facility will be important for research and training and will feature an online vine management system, allowing students to see real-time data on things like water use and growth,” Steve said.

Apart from the advantage of having a commercial-scale facility, Steve said all profits would go back to the University for research, and close collaboration with industry would be strengthened.

“Unless we have direct links with industry, it is difficult to achieve vital goals of improved sustainability, better water use and decreased environmental problems such as salinity,” he said.

“It is important to work with industry for the benefit of our research programs and to ensure we are giving our students the best grounding before they enter the industry.”

Steve has spent the past 18 years at Flinders University, most recently as Associate Professor. His main focus has been plant physiology, including why plants take up beneficial nutrients like potassium, and exclude toxins such as sodium.

He will be involved in teaching and is currently reviewing Adelaide University’s oenology and viticulture courses to ensure they are relevant and in the best interests of the students.

His major areas of research will be salt tolerance and drought tolerance in vines and measuring water stress in vines. He is also involved in the CRCV’s project looking into grape berry development and berry shrinkage in Shiraz grapes.



Steve Tyerman in the glasshouses at Adelaide University, Waite Campus.

New chairman of CRCV Board

Third generation grapegrower **Tony Martin** has been appointed the new chairman of the CRCV Board.



A grower of dried vine fruits and wine grapes, Tony has been Deputy Chairman of the CRCV Board for the past two years and takes over from Peter Barnes.

Tony said the impetus for taking on the role was his ‘great interest and passion’ for the viticultural industry, the importance of research and the need to keep expanding the grape industries and retain a progressive outlook.

Tony has managed his family’s 100 acre property at Merbein in north west Victoria for the past 21 years and has been a board member of the Australian Dried Fruits Association Inc (ADFA) for

14 years, Chairman of the ADFA Water and Environment Committee and of ADFA’s Drying for Profit Program.

And retirements

The CRCV would like to express its sincere gratitude to **Peter Barnes**, who resigned as CRCV Chairman at the end of 2001 to take up a position as President of the Winemakers’ Federation of Australia.

Peter was appointed Chairman in 1999 and became an enthusiastic supporter and advocate of the CRCV and his contribution to the sound governance of the Centre was significant.

The CRCV would also like to thank **Dennis Mutton** for the contribution he made on the CRCV Board over the past 3 years. We wish him well in his retirement and will be announcing his replacement in the next edition of the newsletter.

New environmental management project for the CRCV



Researchers Mahabub Mollah and Alison MacGregor.

A new CRCV project aims to minimise the effects of agrichemicals on the environment by providing growers with simple ways to predict, measure and manage chemical movement and impacts.

According to CRCV researchers Dr **Mahabub Mollah** and **Alison MacGregor**, the project is looking at specific chemicals and potential off-target impacts associated with different soil types, rainfall, wind, proximity to waterways and urban developments.

“Currently the best practice protocols for chemical use are quite general and lack regional relevance. This project will address the need to have the predicted impacts of chemical use validated and develop regionally-specific recommendations for agrichemical use,” Mahabubur said.

Mahabubur, who is based at the Department of Natural Resources and Environment Victoria, said the project had been developed in response to growers, consumers and local communities becoming increasingly conscious of the potential impacts of agri-industries on the environment.

“This project is important for growers who want to reduce the use of chemicals in their vineyards for more sustainable production. It will also be vital in placing the Australian wine industry in a strong position to assure domestic and overseas consumers and rural communities that viticulture is managed in a way that protects soil and water quality, biodiversity and consumer health,” he said.

Mahabubur said the environment was complex and because a variety of

things influenced the movement of agrichemicals it was important to have regional recommendations.

“Some of the things that affect the movement of chemicals in the environment include the method of application, the amount, timing and frequency of application and the placement of chemicals,” he said.

“The weather, land forms, soil type and vegetation which are different in many viticultural regions can also determine how much of the agrichemical is distributed in the air, soil and water.”

The project team will be reviewing current knowledge on known and predicted environmental impacts of key agrichemicals used in Australian viticulture and the techniques used to predict and measure the movement of such chemicals in a range of soil types and climates.

The project also involves developing a decision-making framework for ongoing assessment of chemical hazards and best management practices with ready-to-use tools for vineyard managers to self-audit.

Your feedback welcome

Your feedback and comments about this newsletter are most welcome. If you have any suggestions or there are any particular types of articles you would like to read, please let us know. You can email your comments to: sally.raphael@peterfuller.com.au or fax them to (08) 8363 6822.

Viticare – A national approach to delivering regional outcomes

Yenda, located within the Murrumbidgee Irrigation Area in New South Wales, was first opened up for farming in the early 1920s when the Burrinjuk dam and irrigation channels were built to service the area. David Rossetto from the Yenda Grapegrowers' Association talks about some of the issues facing growers in the region.

Q: How many growers are there in the region?

David: About 130 in the Yenda area and more than 500 in the entire area covered by our Wine Grapes Marketing Board. Our association was formed in 1979 and has a committee consisting of nominated growers, who are changed or re-nominated every year. We have a Chairman, Treasurer, Secretary and seven committee members.

Q: What are the characteristics of your region?

David: The area is very flat and in the past it has been under flood or furrow irrigation. Some of the properties, particularly the larger plantings, now have more sophisticated irrigation systems. The viticultural area is surrounded by rice farms and dry land/grown farms.

Q: What are the main varieties grown?

David: The main white varieties grown here are Semillon, Chardonnay, Colombard and Trebbiano and reds include Shiraz, Cabernet Sauvignon and Mataro. However there is a great diversity of varieties with about 12 other white and 11 other red varieties in addition to the main ones.

Q: What is the average size of vineyards in the region?

David: The average size is about 30 hectares.

Q: What is the average annual crush?

David: It has been about 135,000 tonnes but we are expecting somewhere in the vicinity of 170,000 this year.

Q: What are some of the issues facing growers in the region?

David: Water is the main issue – the increasing price of water and the increasing lack of water being the main two issues. We are also concerned about the low prices, on average, we receive for grapes in comparison to other areas. There is little recognition that growers in the region are capable of growing good quality grapes that make good quality wines. In this respect marketing our region and our grapes is something that is an issue for us.

Q: When did your association join the Viticare Network?

David: We joined in April 2001 in the hope of being able to contribute and also keep in touch with what other grape-growing regions were doing.

Q: How useful have you found the Network?

David: So far it has been very useful as a communication tool and a source of information. It has also shown us that many of the problems we face are also being felt by other regions and growers.

Q: How important is it to be aware of the latest research and technology?

David: No matter where the research is being conducted it is very important to be aware that it is happening and to gauge whether it could have any future application for our region.

Q: What outcomes would you like to see from the Viticare Network?

David: With the help of the Viticare Network we'd like to see a greater number of growers in this region share both their problems and ideas and work together to achieve some gains, rather than keeping to themselves.

Q: Are you involved with the On-Farm Trials project?

David: Not at the moment, but we are involved with trials with the Wine Grapes Marketing Board and Charles Sturt University and trials are definitely something that are important.

To join Viticare:



If your group is interested in joining the Viticare network, please contact Noel Ainsworth on (08) 8303 9304.

There are 22 current members of the Viticare network including:

- 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.

New Bugmatch CD-ROM released

The new version of the CRCV's 'Bugmatch – Grapes' CD-ROM has been released, offering growers a comprehensive and up-to-date directory of the latest research and management of pests and diseases.

Produced by the CRCV and Aventis CropScience, with support from the Phylloxera and Grape Industry Board of South Australia and Monash University, the CD-ROM enables the easy identification of pests and diseases.

Project Manager Dr Mary Cole, Director of Wine Technology and Marketing at Monash University, said

the new 'Bugmatch-Grapes' would provide users with the text and graphical information to identify pests and diseases, as well as offer biological, cultural and chemical management options.

"Importantly, 'Bugmatch-Grapes' will now include the National Phylloxera Protocols and a module dealing with organic methods of viticulture," Mary said.

'Bugmatch-Grapes' is now available through Aventis CropScience for \$48.50 (including GST and postage). Please contact Jessica Greenwell at Aventis on (03) 9248 6823 for details and orders.

Brief News

www.crcv.com.au

A fresh look, a host of up-to-date information and easy navigation are just some of the features of the CRCV's newly upgraded website.

CRCV project descriptions are now accompanied by the latest progress reports, a wealth of information about the CRCV and its participant agencies exists, as well as details about CRCV achievements and Board members. An extensive database of scientific publications and a personnel database with CRCV contact information are available.

The site also features a comprehensive 2002 calendar of events and information on the Precision Viticulture project, including a yield map protocol and a workshop presentation from the 2001 Australian Wine Industry Technical Conference.

The CRCV's Education and Training and Viticare programs have a much stronger presence on the website, with better resources for the CRCV's PhD students, training providers, assessors and growers and winemaker associations involved in the Viticare Network.

The website address is www.crcv.com.au

CRCV Symposium

The 2002 CRCV Symposium will be held on June 17-18 at the Sunraysia TAFE in Mildura. Further details will be made available on the website and in the next edition of the newsletter. For more information contact the CRCV on (08) 8303 9405.

Diary Dates

May 8-9
Expo 17 Horticultural Field Days
University of Queensland, Gatton
Campus
Ph: (07) 4635 6845
Fax: (07) 4635 9422
Email: annestory@bigpond.com

May 21-23
Irrigation Australia 2002 Exhibition
and Conference
Sydney Convention Centre
Details from Martin Phipps at
Exhibitions & Trade Fairs
Ph: (02) 9290 1234
Email: irrigation@sydney.etf.com.au

Scientific Publication

Distribution pattern of root-knot nematodes (*Meloidogyne* spp.) in South Australian vineyards
Quader, M., Riley, I.T. and Walker, G.E.

Australasian Plant Pathology, Volume 30, p357-360, 2001

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.

