Murray Valley Winegrowers' Inc

Australian Government
Grape and Wine Research and Development Corporation

Field walks to demonstrate good irrigation practices in Robinvale and Swan Hill



FINAL REPORT to

GRAPE AND WINE RESEARCH & DEVELOPMENT CORPORATION

Project Number: **RT 03/05-2**

Principal Investigator: **Susan Byrne and Liz M^{c}Guire**

Research Organisation: **Murray Valley Winegrowers' Inc.**

Date: **10/2/2006**

PART ONE

Executive Summary

The concept for the irrigation field walks was for growers to come together and to learn from each other. A consultant was present at the field walks to fill in the gaps and to get the questions and discussions progressing.

The field walk was organised by Winegrape Industry Development Officer, Susan Byrne; viticulture consultant was, Ross Polglase. Ross began the field walk with a formal presentation, which set the scene for the day. After the presentation we visited two local vineyards. Only a loose agenda was set for the field walk, the idea being that growers would choose the topic direction based on the questions and discussion that arose on the day. Growers were encouraged to actively participate in information sharing rather than relying totally on Ross. This approach fostered co-learning between the growers. Topics discussed included:

- Soil moisture monitoring equipment,
- Interpreting and using soil moisture monitoring data,
- Correct interpretation of the visual symptoms of water stress,
- Using historical records of the vineyard,
- Knowledge of the soil type and RAW (Readily Available Water) values,
- An understanding of the different water requirements of vine at different growth stages,
- Being able to amalgamate data from numerous sources (ie dig stick, visual symptoms, moisture monitoring equipment, feedback from winery)

The project aimed to help growers in their irrigation practices, ensuring an improvement in water use efficiency. If growers were able to improve their water use efficiency through applying the right amount of water at the right time, reduced water use may result. This may mean a reduction in pumping costs, water charges as well as reduced drainage. Improved irrigation efficiency may result in surplus irrigation water, which may be used for further development or sale. Crop productivity may also be increased by irrigating the vines with the right amount at the right time, which could result in better payment for fruit.

Background

When the RITA application was written the catchments suppling water to the Murray Valley were historically low, with restrictions as of August 2003, 58% of licence allocation. This restriction was reviewed monthly and by November 2003 restrictions were completely lifted. Consequently the original RITA application needed to change its focus slightly. The original application aimed to bring growers together by means of field walks, to discuss how they were going to manage possible water restrictions. With restrictions lifted the irrigation field walks became a forum for discussions on what resources and skills growers could use to make good irrigation decisions.

Rather than provide a learning event in which an 'expert' delivered information and growers passively took on board the message, it was thought a more effective learning event would be one that requires growers to actively participate and to share information. To achieve this, an informal and relaxed field walk and BBQ was organised, which encouraged grower initiated discussions and questions. The BBQ also allowed time for growers to reflect on what they saw and heard during the day and how it fits in with problems and opportunities on their own vineyard.

Objectives

- To organise for the Swan Hill and Robinvale winegrowing regions two sets of irrigation field walks four times over the growing season, budburst, flowering, fruit set and verasion.
- Provide an opportunity for growers to learn from each other.

- Provide extension activities in which growers are able to add to their irrigation knowledge and skills.

These were the objectives in the funding application. They were achieved however only one field walk at veraison was organised for Robinvale, and two field walks for Swan Hill one at veraison and another pre-harvest. This was due to the late notification of project funding approval. The time of approval, middle of November, did not allow time to organise all the proposed field walks.

Outputs

1. Liaison meetings with viticulture consultants and key growers to choose topics to be covered at the field days and to reflect on ways to improve the field walks.
2. Minutes from meeting with viticulture consultants and key growers.
3. Handouts for field walks.
4. Flyer advertising the event.
5. Radio announcements advertising the event.
6. Use of selected vineyards for observation and demonstrations of good irrigation practices.
7. An evaluation report to ascertain the level of impact the field days have had on changes in irrigation practice and subsequent water use efficiency.
8. Article in the Murray Valley Winegrape Growers' Grapevine (see Appendix 4).

All the outputs were achieved except for numbers 1, 2, & 7. Outputs 1 and 2 were not undertaken as project organisation began in January 2004, due to late notification of funding approval, not allowing time for such meetings. Output 7 was a report that examined practice change due to the project. This did not occur, as there was not enough time to track grower progress.

Method

The field walk began with viticulture consultant Ross Polgalse going over the factors affecting water use, in a formal setting with overheads and handouts (see Appendix 1).

Next we visited local vineyards to hear and observe growers' irrigation practices. To set the scene and get growers thinking, Ross led participants through a visual assessment sheet similar to that used by wineries. Assessing the vines and hearing from the vineyard manager the irrigation history of the vineyard helped to put into context the quality aims of the vineyard and how irrigation was used to achieve these aims.

The field walks were informal and participants were encouraged and given plenty of time for discussion and to ask each other and the consultant questions.

A BBQ was held after each of the field walks. At the BBQ growers were interviewed to evaluate what they had learnt from attending and participating in the field walk.

The field walks was advertised via flyers (see Appendix 3) and media releases (see Appendix 2).

Results/Discussion

SWAN HILL EVALUATION (see Appendix 5)
No. of Growers…19

1. **What new information about the progressive signs of water stress did you learn today?**

Response from grower(s)	**Number of responses**
Knew the visual symptoms of water stress but felt the field walk helped to reinforce this knowledge	8
Feeling for leaf temperature	2
Leaf rolling	2
Tendrils drooping or falling off	2
Learning to look at the vine for visual symptoms rather than relying on soil moisture monitoring equipment	1
Lack of shoot growth	1
Burnt off tips	1
Drooping leaves	1
Looking at health of first 6 and last 6 leaves on the cane	1
Changing of leaf colour	1
Comparing vineyards visited could push own vines harder	1
None	2

2. **What new information about irrigation scheduling did you learn today?**

Response from grower(s)	**Number of responses**
Spend more time visually assessing vines and digging soil pits for assessment rather than relying solely on moisture monitoring equipment.	3
Pulse irrigating rather than long irrigations	3
Depth of irrigation required	2
Reinforces knowledge	1
Comparing vineyards visited he was over-watering	1
Raising dripper line off the ground	1
Each block needs to be irrigated differently	1
There is no such thing as an irrigation recipe	1
Using soil moisture monitoring equipment such as G-bugs	1
None	10

3. **Other new information?**

Response from grower(s)	**Number of responses**
Comparing different vineyards which have different markets for their fruit	3
Using the day as a benchmarking exercise	2
Acid/sugar balance plays important part of fruit quality	1
Potassium has a detrimental effect on wine quality	1
Colour of seed changing for maturity and effect on wine quality	1
Examining different varieties	1
Changing to gypsum blocks	1
Could push his vines a little harder in future	1

ROBINVALE EVALUATION (see Appendix 5)

No. of Growers…13

1. What new information about the progressive signs of water stress did you learn today?

Response from grower(s)	**Number of responses**
Feeling for leaf temperature	6
Knew the visual symptoms of water stress but felt the field walk helped to reinforce this knowledge	5
Leaves dying at the base of cane due both to water stress and shading	3
Change in leaf colour	2
Irrigating different varieties	1
Changes in petiole behaviour	1
None	1

2. What new information about irrigation scheduling did you learn today?

Response from grower(s)	**Number of responses**
Spend more time visually assessing vines and digging soil pits for assessment rather than relying solely on moisture monitoring equipment	1
Other growers approaches to scheduling	1
Using day for benchmarking exercise	1
Terms used for irrigating (using ML)	1
Change from furrow irrigation to pressurised system	1
Long-term sustainability of vines	1
None	7

3. Other new information?

Response from grower(s)	**Number of responses**
Likes the interaction with other growers on field days	1
Likes to listen to consultants talk rather than just from the winery	1
Likes the reinforcement	1
Caters for a range of learning levels	1
Row orientation affects heat absorption on different sides of canopy. Will change pruning style to create more shading.	1
Leaf layer number shows how much shading/exposure of fruit	1

The evaluation tells us that growers did learn new information about the progressive signs of water stress and irrigation scheduling.

Outcome/Conclusion

The irrigation field walks were successful in attracting a good crowd. Evaluation of the event indicates growers learnt new irrigation knowledge and skills. The evaluation also indicates growers are thinking about practice change they may make when they get home, as a result of attending the irrigation field walk.

Some of the answers growers gave in the evaluation were derived from information from other growers on the field walk. This indicates the aim of co-learning between growers was achieved.

PART TWO

Executive Summary

A field walk was organised in the Swan Hill Area to visit three local properties to examine the soil characteristics, vine performance and fruit quality issues that are related to irrigation in the vineyard. Three service providers were invited to the session to present technical information to participants.

Fifteen people attended the session which was a good group size for this field exercise. Feedback from the group indicated that the information presented was practical and useful for their own operations.

Background

The aims of the original RITA application for this project were to help growers make the best irrigation management decisions to cope with potential water restrictions in 2003/2004. Murray Valley winegrape growers were lucky in this season with water restrictions being lifted and little change in irrigation management strategies being needed.

While water restrictions were lifted in this season, growers' were still very interested in improving their irrigation management strategies. An irrigation field walk was previously organised to observe different irrigation techniques and technologies in the field prompting discussion and questions amongst participants. This workshop was positively received by growers and can be seen in part one of this report compiled by Susan Byrne.

With funding still available, GWRDC was approached to expand the life of the project to allow another field event to be held. The request was granted and the following activities were developed.

Objectives

1. To organise a field walk in the Swan Hill region focusing the interactions between soil and irrigation and the effects they have on vine performance and fruit quality.
2. To provide an opportunity for growers' to learn from viticultural consultants.
3. To provide an opportunity for growers' to interact and learn from each other.

Methods

A field walk was organised to visit three different winegrape properties in the Swan Hill area to look at:

- soil pits and different soil types and characteristics.
- Irrigation types.
- Vine performance
- Fruit quality measurements.

Three service providers (listed below) were approached to present technical information during the session.

- Garth Swinburne from Scholefield Robinson,
- Melissa Cann from DPI, Swan Hill,
- Lindsay Jones from Soil Solutions.

An invitation was sent to growers' inviting them to attend the field walk (see Appendix 6).

Results / Discussion

Fifteen people attended the irrigation field session. Growers who attended indicated to the Industry Development Officer Susan Byrne the information was well presented by the service providers, it was informative and practical and could be easily integrated into their own management strategies.

Participants indicated the session was worth while attending, they enjoyed seeing other producer's management strategies and be able to discuss the best choices for their own properties with service providers.

Growers interacted well on the day and shared a lot of their own experiences indicating that small groups are less intimidating and the presence of good service providers can ensure a two way flow of information.

Topics that were discussed during the session included:

- Defining and meeting quality,
- Vine performance indicators,
- The influence of soil and water on vine growth,
- Critical stages for water application,
- Climatic impacts on vine water use and
- Identification of major soil types in the region and their characteristics.

The field session was followed by a BBQ where the results of a bench marking project was discussed creating discussion amongst growers in a social setting.

Outcome / Conclusion

The field session highlighted a number of key irrigation topics for the growers who attended. The information presented by the service providers was well received. Acknowledgements are made to the service providers who attended the field session.

The small size of the group allowed growers to interact and share personal experiences. This allowed practical information to be shared and the potential for this information to be integrated into different properties. This could lead to increases in efficiency and effectiveness of irrigation management strategies. Acknowledgements are made to the growers who hosted the sessions and shared their irrigation management strategies with the group.

Acknowledgements are made to GWRDC for providing funding for this project.

PART THREE

Executive Summary

Irrigation is a vineyard management strategy that can influence winegrape growth and quality. For this reason Winegrape growers' in the Murray Valley nominate irrigation as an area for continuous learning. This project aimed to demonstrate good irrigation practices through field walks and presentations from industry personnel who work closely with irrigation technology and practice.

A field event was organised for both the Robinvale and Swan Hill areas with the same program as the field event for Mildura (see Appendix 8).

Due to the minimal level of interest in both these areas the field events were cancelled. Growers commented that they were more concerned in selling their produce than expanding their knowledge on irrigation at this time.

Acknowledgements are made to GWRDC for providing funding for this project.

APPENDIX 1

IRRIGATION STRATEGIES FOR WINEGRAPES

(and a bit on grape quality)

By Ross Polglase,

Factors affecting the rate of water use

- Leaf area
- Crop load
- Stage of development of crop
- Degree of water stress
- *Temperature*
- *Humidity*
- *Wind*
- *Sunlight*

Seasonal patterns of vine growth

- Bud burst to flowering: shoot growth dominates; root activity strong from 4 weeks post bud burst to shortly after berry set
- Set to veraison: berry growth occurs through cell division
- Veraison: berry growth pauses; seed development commences, berries soften and colour development begins
- Veraison to harvest: sugar and flavour accumulation occur; colour development in red varieties; berry growth occurs through cell expansion
- Post harvest: may be a small flush of shoot growth; second largest flush of root growth

Water availability and soil types

Factors influencing water availability include:

- Soil texture: the proportion of sand, silt and clay
- Soil structure: the way in which the primary particles are arranged in the soil
- Physical barriers to root growth: compaction; soil fissures
- Chemical barriers to root growth: carbonate layers; soil acidification (aluminium toxicity)
- Irrigation system and scheduling
- Rainfall amount and timing

The most important question when devising a strategy:

What kind of vines do want to grow?

The answer is influenced by:

- soil type
- irrigation system
- approach to irrigation scheduling
- market for the crop

Canopy characteristics of white varieties

White varieties

- generally need more shade than red varieties (except for viognier)
- aromatic varieties usually lose flavour if their bunches are over exposed
- fail to develop flavour in full shade
- lose acid in full shade

Canopy characteristics of red varieties

- Depends on market for the fruit
- Develop good colour, phenolics and flavonol levels with moderate to high degree of exposure
- Small berries *usually* develop better colour, phenolics and flavonols than larger berries
- Vines may produce good colour with careful use of RDI
- Vines produce poor quality with excessive levels of stress

RAW values

RAW = Readily Available Water:

- the amount of water that plants can potentially extract from the soil
- does not take into the influence of soil-borne pests
- varies on the same soil according to root stock

The value of RAW values

RAW values provide an indication of:

- the vigour potential of a site
- how to match varieties with soil types before planting
- then sensitivity of a site to drought
- the ease of vine vigour management
- best soil management practices for a site
- sometimes used with evapotranspiration data for irrigation scheduling

RAWs and vigour potential

- Low vigour potential sites: RAWs of less than 25 mm
- Moderate vigour potential: RAWs of 25-45 mm
- High vigour potential sites: RAWs of greater than 45 mm

Choosing sites for individual varieties in a block should take RAWs into account

Scheduling tools and systems

- Evapotranspiration, crop coefficients and RAW values
- Tensiometers
- Gypsum blocks
- Capacitance probes
- others exist, but are less commonly used
- Shovel, auger or dig stick

No one system is perfect

An approach to assessing vineyards

There are two fundamental questions to ask yourself when you walk into a vineyard:

1. *What do I see?*
2. *How do I interpret what I see?*

You can systematically record what you see at different times of the season to assess how your vines are performing

Some factors that are important

- when tendrils fall
- tip condition
- leaf condition
- extent of cane and seed lignification
- cane length
- lateral growth
- fruit exposure
- fruit distribution
- berry size
- flavour

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Swan Hill 3585

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After hours: 03 50329093
Fax: 03 50331580
email: polglase@swanhill.net.au

Irrigation and the Harvest and Post Harvest Periods

Ross Polglase, February 23, 2004

We are now approaching two of the most critical periods of the season: the harvest and post harvest periods. How you irrigate vines from now to harvest will have a profound impact on the rate at which your crops mature. Post harvest irrigation management has a strong influence on how your vines will grow next season, and on bunch size for you 2005 harvest.

Irrigation from now to harvest

The aim of irrigation from veraison to harvest is to encourage the vines to produce sugar which leads to "ripeness" and contributes to the formation of colour and flavours. Anything which interferes with the ability of the vines to move sugar into the berries delays maturity and may result in quality deterioration.

Some factors that reduce the rate of movement of sugar into berries after veraison include:

- Uncontrolled vine vigour, which causes some sugar to be moved into shoot growth
- Premature defoliation due to drought stress or disease
- Damage to the canopies of the vines due to heat, which reduces the effectiveness of the leaves
- Inadequate irrigation, causing the stomata (pores on the underside of the leaves) to remain closed when they should be open, taking in carbon dioxide
- Excessively hard cane trimming, especially when carried out after veraison

Berry growth at this time of the season occurs solely though cell expansion, cell division having ceased by veraison. Irrigating now to ensure that the canopies remain active and effective for the rest of the season will cause some cell expansion to occur in

the berries. Ensuring that your berries accumulate sugar steadily is more important than having some increase in berry size.

The post harvest period

This is a critical time in the annual cycle of a grapevine. By harvest, each vine has produced almost all the leaves that it will carry for the season. A crop has been matured and harvested. The vines are now in a "run down" condition, with depleted reserves of carbohydrates.

The post harvest period is critical, because this is the time when we encourage the vines to produce sugar, much of which will be stored in the wood and roots of the vines for next spring.

The consequences for the vines of failing to store adequate levels of carbohydrates after harvest can be seen in the next season. These include:

- A reduced % bud burst
- Uneven and poor shoot growth
- Uneven flowering
- Reduced bunch size

After harvest, grapevines need to be given enough irrigation to ensure that as many leaves as possible remain on the vines until the plants are ready to enter dormancy. On the other hand, avoid over irrigating vines after harvest. Excessive irrigation late in the season can cause the vines to produce excessive shoot growth, diverting sugar away from storage.

Ross Polglase

APPENDIX 2

Murray Valley
Winegrowers' Inc
ABN 27 375 625 539 Inc. Reg No. A0010590U
62 Madden Avenue, Mildura 3500
PO Box 2745, Mildura 3502
Phone (03) 5021 3911
Fax (03) 5023 2335
Email mvw@murrayvalleywinegrapes.com.au

Swan Hill Wine Region Grape Growers' Association Inc.
Murray - Darling Winegrape Growers' Association Inc.
Robinvale & District Wine Grape Growers' Association Inc.

Media Release

8/1/2004

Turning Water into Wine

Winegrape growers of Swan Hill and district are invited to attend a workshop to examine irrigation and quality. The workshop, on Friday 16 January, is to be held in the Heritage Room at the Commercial Hotel. Under discussion will be irrigation strategies required for different soils, followed by a bus tour of growers' properties to examine irrigation scheduling and upcoming quality for the season. Included in the field walk will be a chance for growers to assess a vine's potential for growing quality fruit, using a survey method similar to that applied by wineries looking for grapes in the Swan Hill region.

The workshop will begin at 1pm and will end at 7pm with a free BBQ and drinks.

If you are interested in attending please contact Susan Byrne at the Murray Valley Winegrowers office on 50 213 911.

Contact
Susan Byrne
Murray Valley Industry Development Officer
Phone: (03) 50 213 911

Murray Valley
Winegrowers' Inc

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Robinvale & District Wine Grape Growers' Association Inc.

Media Release

19/2/2004

Irrigating for Quality Field Walks, part two

Swan Hill growers are invited to a second Irrigating for Quality field walk, on Monday 23 February. Local viticulture consultant Ross Polgalse will be on hand to talk about fruit quality and post harvest irrigation. The growers will also be given to opportunity to hear about the 'Shiraz Quality Benchmarking Project'. Project participants are encouraged to attend the field walk as the benchmarking project will be discussed in full, including sampling and assessing quality pre-harvest.

The Irrigating for Quality field walk starts at the Swan Hill Railway Station at 2pm, and is expected to finish at 8pm. A BBQ and drinks will then be available.

If you are interested in attending please contact Susan Byrne at the Murray Valley Winegrowers office on 50 213 911.

Contact
Susan Byrne
Murray Valley Industry Development Officer
Phone: (03) 50 213 911

APPENDIX 3

FIELD WALK FOR ROBINVALE WINEGRAPE GROWERS

When: Friday 23 January 2004
Time: Starting at 2:30 pm sharp, expect to finish at 9pm
Location: Meet at the Robinvale Golf Club, on the Swanhill Road

HIGHLIGHTS!!

- ➔ Ross Poglase, will speak on irrigation strategies for white & red winegrapes on different soils.
- ➔ Bus trip to growers' properties - to discuss irrigation scheduling and upcoming quality for the season.
- ➔ Growers will receive training in the use of a survey which assesses the vine's potential for growing quality fruit (similar to what your winery uses).

Free BBQ and drinks to finish the day.

To register your interest for this event ring 50 213 911 or fax this sheet to 50 232 335 by January 20th 2004

Name.....

Number of people attending the field walk.....

Growers will be picked up and dropped off at the Robinvale Golf Club.

Proudly sponsored by the:
Murray Valley Industry Development Committee
Murray Valley Wine Growers Incorporated
Grape and Wine Research and Development Corporation
Joon ive i arcl utre Viti re

FIELD WALK FOR SWAN HILL WINEGRAPE GROWERS

When: Friday 16 January 2004
Time: Starting at 1 pm sharp, expect to finish at 8pm
Location: Meet at the Commerical Hotel, 91 Campbell Street

HIGHLIGHTS!!

- Ross Poglase, will speak on irrigation strategies for white & red winegrapes on different soils.
- Bus trip to growers' properties - to discuss irrigation scheduling and upcoming quality for the season.
- Growers will receive training in the use of a survey which assesses the vine's potential for growing quality fruit (similar to what your winery uses).

Free BBQ and drinks to finish the day.

To register your interest for this event ring 50 213 911 or fax this sheet to 50 232 335 by January 14th 2004

Name.....

Number of people attending the field walk.....

Growers will be picked up and dropped off at the Commerical Hotel, 91 Campbell Street..

Proudly sponsored by the:
Murray Valley Industry Development Committee,
Murray Valley Wine Growers Incorporated
Grape and Wine Research and Development Corporation
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PART 2 - IRRIGATION/QUALITY FIELD WALK

When: Monday 23rd February 2004
Time: Starting at 2pm sharp, expect to finish at 8pm
Location: Meet at the Railway Station car park

HIGHLIGHTS!!

- The Swan Hill '*Shiraz Benchmark Quality Project*' will be discussed.
- Visiting 3 vineyards (including the two from the field walk in January 2004).
- Ross Polglase will speak on **pre-harvest assessment, sampling procedures for grape quality** and post harvest irrigation.

BBQ and drinks to finish the day

To register your interest for this event ring 50 213 911 or fax this sheet to 50 232 335 by February 19th 2004

Name.....

Number of people attending the field walk.....

Growers will be picked up and dropped off at the Railway Station car park

Proudly sponsored by the:
Murray Valley Winegrape Industry Development Committee
Murray Valley Winegrowers Inc.
Grape and Wine Research and Development Corporation
Cooperative Research Centre for Viticulture

PS If you missed out on the last Irrigation/Quality field walk you are most welcome to attend this one!

APPENDIX 4

Walking for water

Learning more about irrigation

Susan Byrne
Industry Development Officer

Winegrape growers in the Murray Valley had the opportunity to attend a series of Irrigation Field Walks in January and February. They were organised by Industry Development Officer Susan Byrne, CRCV Viticare Trials co-ordinator Sarah Hession and viticulture consultant Ross Polglase. Two field walks were held in Mildura and Robinvale during veraison, while Swan Hill hosted one during veraison and another just pre-harvest.

Each walk began with a presentation by Ross Polglase on irrigation strategies, focusing on areas such as vine growth patterns, soil management and differentiating irrigation strategies for white and red varieties. Ross noted that it was important for growers to understand which wine market(s) their grapes were meant for so that specific quality parameters could be observed throughout the season.

He placed great emphasis on monitoring vines throughout the season for factors such as tendril health, lignification and lateral growth. Visual assessments were an essential component of irrigation scheduling, rather than relying solely on expensive soil moisture monitoring equipment.

Observing irrigation impacts

Each group then progressed to various vineyards to observe the results of different irrigation strategies on Shiraz, Chardonnay and Merlot. The visits ranged from winery-run vineyards to privately owned vineyards where each vineyard manager discussed their current irrigation program. A visual assessment of each patch was completed, covering both canopy and fruit characteristics. Ross then guided the growers through some visual symptoms of water stress, evident on some blocks that had been moderately stressed from fruit set to veraison in order to control berry size. The growers learnt to spot tendril shrivel, degree of shoot tip growth and leaf condition. Ross pointed out that methods as simple as feeling for leaf temperature were effective in determining stress, as warm leaves indicated transpiration problems.

Winemaker's view

Swan Hill growers also heard from winemaker Bill Small, who spoke about fruit quality; the importance of flavour and tannin ripeness in the berries and the impact of over-stressing vines.

The field walks concluded with a BBQ, which gave growers further opportunity to talk with Ross and other growers. Growers evaluated that the field walks helped to reinforce and broaden their knowledge of progressive signs of water stress.

The relaxed atmosphere and enthusiasm from the growers made all the irrigation field days successful. Further information can be obtained from Susan Byrne on 5021 3911, or information about the CRCV Viticare Trials from Sarah Hession at the DPI on 5051 4500.



From L-R: Bill Small, Alan McTavish, Ross Polgare and Stuart Brumby examining shiraz on the field walk

APPENDIX 5

SURVEY FOR ROBINVALE / SWAN HILL IRRIGATION DAY

1. At the field walk today did you learn new information about the visual symptoms of water stress?
2.

☐ YES *(go to question two)*

☐ NO *(go to question three)*

2. What new information about the progressive signs of water stress did you learn today?

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……

3. Did you learn new information about information scheduling today?

☐ YES *(go to question four)*

☐ NO *(finished survey)*

4. What new information about irrigation scheduling did you learn today?

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APPENDIX 6

VINEYARD FIELD WALKS

Visiting three local vineyards

SPEAKERS

- Garth Swinburn from Scholefield Robinson
- Melissa Cann from Department of Primary Industries, Swan Hill
- Lindsay Jones from Soil Solutions

TOPICS TO BE DISCUSSED

- Defining and meeting quality aims
- Vine performance indicators
- The influence of soil and water on vine growth
- Attention to different growth stages through the season to ensure water is applied at critical times
- Monitoring the impact of climatic and soil influences on vine water use
- Identification of major soil types in the region and their characteristics

The field walk will begin at Gail & Bob Wilson's property at Nyah West on Harris Road at 2:30pm, we expect to finish at the last property by 5pm



After the field walk everybody is invited to a Christmas BBQ at John Ward's property on Bulga road. At the BBQ the Swan Hill Shiraz Benchmark project will be discussed.

TO REGISTER

☏ Ring the Murray Valley Winegrowers' office on **50 213 911**

OR

Fill in the form below and fax to **50 232 335**

☑ Yes I will attend the field walk on Wednesday 15th December 2004

Name……..…..

Phone Number……..…Fax Number……..…..……

Murray Valley
Winegrowers' Inc

DIRECTIONS FOR WILSON'S PROPERTY:

FROM SWAN HILL: ON THE MURRAY VALLEY HIGHWAY, TURN LEFT INTO HOBSON ROAD THEN TURN LEFT INTO HARRIS ROAD. THERE WILL BE SIGNS POSTED ON THE DAY.

OR

FROM TWO BAYS ROADHOUSE: ON THE MURRAY VALLEY HIGHWAY, TURN THE FIRST RIGHT INTO HOBSON ROAD THEN TURN LEFT INTO HARRIS ROAD. THERE WILL BE SIGNS POSTED ON THE DAY

APPENDIX 7

Murray Valley
Winegrowers' Inc

ROBINVALE WINEGROWERS

you are invited to the

IRRIGATION FIELD WALKS

When: Wednesday 19th October
Bus Pickup: Railway Station / V LINE Bus stop (9.45am)
Time: 9:45am - 2:30pm
RSVP: for catering purposes please RSVP below

On the day visit two local winegrape properties and hear from:

- **Yandilla Park** - What volumes of water are vines using now?
- **Dr Chris Soar** - CSIRO - How does rootstock type affect vine water uptake and how can you manipulate your irrigation to suit your variety's reaction to water stress?
- **Dougal Currie** - CRCV - What effect is drip irrigation having on soil structure in your vineyard?
- **Nicole Dimos** - CRCV - What can mulching do for your vineyard?

TO REGISTER

Phone Murray Valley Winegrowers on (03) 5021 3911 or fax the following to (03) 5023 2335

☐ I would like to attend the irrigation field walks on the 19th October.

Name(s)……

Phone Number……..

Murray Valley
Winegrowers' Inc

SWAN HILL WINEGROWERS

you are invited to the

IRRIGATION FIELD WALKS

When: Thursday 20th October
Bus Pickup: Railway Station (9.00am)
Time: 9:00am - 2:30pm
RSVP: for catering purposes please RSVP below

On the day visit two local winegrape properties and hear from:

- **Yandilla Park** - What volumes of water are vines using now?
- **Dr Chris Soar** - CSIRO - How does rootstock type affect vine water uptake and how can you manipulate your irrigation to suit your variety's reaction to water stress?
- **Dougal Currie** - CRCV - What effect is drip irrigation having on soil structure in your vineyard?
- **Nicole Dimos** - CRCV - What can mulching do for your vineyard?

TO REGISTER

Phone Murray Valley Winegrowers on (03) 5021 3911 or fax the following to (03) 5023 2335

☐ I would like to attend the irrigation field walks on the 20th of October.

Name(s)……

Phone Number……..