

## 2010-11 Investments

### Program 1: Market and consumer understanding

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#### a) Know your consumer

<b>AWR 06/01</b>	Stream 3.1 Wine and consumer needs
<b>CSU 1002</b>	Measuring Consumer Taste Preference through Wine Shows
<b>NWG 1103</b>	Attitudes, drivers of consumption and taste preference - a focus on Chardonnay
<b>UA 0901</b>	Understanding and leveraging the marketing opportunities of engaging wine buyers through virtual communities and other e-based sales channels
<b>UA 0903</b>	Mapping the decision influencers along the wine industry supply chain
<b>USA 1101</b>	Understanding Asian market demand using international students in Australia

#### b) Market opportunities and development

<b>AWR 06/01</b>	Stream 3.2 Consumer health and safety
<b>AWR 06/01</b>	Stream 3.3 Technical, regulatory and trade issues
<b>ABS 0901</b>	2010-12 Vineyards Statistics Collection
<b>AWB 0902</b>	GWRDC support for OIV Vice Presidency
<b>AWR 1102</b>	Phosphorous acid residues
<b>BAE 08/01</b>	Australian wine grape production projections
<b>RIR 1001</b>	Sustainable Food and Fibre Program - Organics and Ethical Foods
<b>UA 08/04</b>	Australia's place in the world's wine markets by 2030: empirical economic analysis of wine globalisation
<b>USA 0901</b>	Understanding consumer perceptions of trust mark claims for Australian wine and subsequent purchase behaviour in multiple countries

### Program 2: Winemaking excellence

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#### a) New Technologies and products

<b>AWR 06/01</b>	Stream 1.1 Defining and controlling important volatile compounds in wine and their impact on wine aroma and flavour
<b>AWR 06/01</b>	Stream 1.2 Defining and controlling key phenolic compounds and their impact on wine sensory properties
<b>AWR 06/01</b>	Stream 1.3 Microbial modulation of wine composition to increase wine value
<b>AWR 06/01</b>	Stream 2.1 Optimising fermentation performance
<b>UA 06/04</b>	New grape and wine chemistry research initiatives to bring long-term benefits to the Australian wine industry (Formally - Chair of Oenology - wine industry development project)

#### b) Managing and enhancing wine quality

<b>AWR 06/01</b>	Stream 2.2 Novel winemaking processes
<b>AWR 06/01</b>	Stream 2.3 Process measurement and improvement
<b>AWR 06/01</b>	Stream 2.4 Industry applications
<b>AWR 06/01</b>	Stream 2.5 Protecting the quality and integrity of Australian wine
<b>CSU 03/02</b>	Chemistry of sulfur dioxide and ascorbic acid as an anti-oxidant system in white wine
<b>DPI 1001</b>	Tannin Structure Function Relationships – A Foundation for Understanding Mouthfeel Perception
<b>FU 1101</b>	Rapid Measurement of Sulphur Dioxide in the Winery

<b>UA 1003</b>	Smart Bungs
<b>UA 1101</b>	Innovative Microbials for Winemaking Excellence

## Program 3: Grapes for purpose

### a) Vine improvement and performance

<b>CSP 05/03</b>	Rootstock breeding program
<b>CSP 0903</b>	Molecular and genetic strategies to reduce the susceptibility of wine grapes to fungal pathogens
<b>CSP 0904</b>	Advanced grapevine genetics for varietal improvement
<b>CSP 1002</b>	Delivering chloride and sodium excluding rootstocks for quality wine production
<b>GWR 1002</b>	Australian Vine Quality Standards Scheme - Vine Assurance
<b>GWR 1009</b>	Rootstock breeding and associated R&D in the viticulture and wine industry
<b>SAR 0903</b>	Salt tolerant rootstocks for long-term sustainability in the Limestone Coast

### b) Berry composition

<b>CSP 05/04</b>	Vines to wine - linking fruit quality to wine flavour and aroma (CSIRO Flagship)
<b>CSP 0905</b>	Understanding and managing the timing of berry ripening and the flavour-ripe/sugar-ripe nexus
<b>CSP 1001</b>	Improving the tannin composition of grapes
<b>UA 1002</b>	Organic acid metabolism and the control of grape berry acidity in a warming climate

## Program 4: Sustainability of industry, environments and communities

### a) Sustainable production

<b>CRI 06/01</b>	Growing grapes to specification with minimal water inputs (CONTINUATION of CRV 03/01)
<b>CSL 1001</b>	Cleaner Production: New Technology for Water Recycling and Cleaner Production
<b>CSL 1002</b>	Sustainable Recycled Winery Water Irrigation based on Treatment Fit for Purpose Approach
<b>CSM 04/01</b>	Soil/Water Initiative Management Project
<b>CSP 0901</b>	Achieving water use efficiency and improved drought tolerance with rootstocks
<b>CSP 0902</b>	Enhanced varieties and clones to meet the challenges of climate change and deliver lower alcohol wines
<b>CSP 1101</b>	Rootstocks to meet future challenges of the Australian wine industry
<b>CUT 05/01</b>	Optimising the recovery of vine performance following irrigation during extended periods of water deficit
<b>DAW 0901</b>	Completing the Smoke Effect Picture: Systems development to reduce the negative effects of smoke on grapes and wine
<b>DPI 0901</b>	Strategies to Manage the Impacts of Global Warming on Winegrape Production
<b>DPI 1101</b>	Setting benchmarks and recommendations for management of soil health in Australian viticulture
<b>DPI 1102</b>	Harnessing soil biological functions to improve grapevine management for a sustainable industry
<b>GWR 0915</b>	Recycled Water - Project 1 Communication and Extension
<b>GWR 1003</b>	Provision of secretariat services to the Wine Industry Biosecurity Technical Reference Group
<b>NWG 1101</b>	Sustainable Vinicultural Systems
<b>SAR 0902</b>	Managing vineyards rootzone salinity and maximising water saving by sub-surface irrigation techniques
<b>SAR 1001</b>	Optimising management of eutypa dieback
<b>UA 1001</b>	Building vineyard resilience through improved floor management practices
<b>UA 1102</b>	The relative sustainability of organic, biodynamic and conventional viticulture
<b>UM 1001</b>	Development of tools to increase knowledge and capacity of growers to implement sustainable pest management solutions
<b>UT 06/01</b>	Effective management of botrytis bunch rot for cool climate viticulture (Project number formally UT 06/01a)

## b) Environmental custodians

<b>AWR 0902</b>	Improving Winery Refrigeration Efficiency
<b>GRD 0901</b>	Understanding Frost Risk in a Variable and Changing Climate
<b>GWR 1004</b>	Consultancy support for Project SAR 1002
<b>GWR 1007</b>	Climate Change workshop facilitation
<b>GWR 1101</b>	Climate Change Research Strategy for Primary Industries (CCRSPI)
<b>MU 08/01</b>	Adaptation of the Australian wine industry to climate change - opportunities and vulnerabilities
<b>MU 08/02</b>	Environment - genotype interactions and the physiological processes determining fruitfulness and yield in grapevines
<b>SAR 0901</b>	A window into hotter and drier futures: phenological shifts and adaptive practices
<b>SAR 1002</b>	Assessment of Vulnerability to Climate Change across Australia's Wine Regions
<b>UA 08/03</b>	Integrating the carbon and water economies of grapevine for optimal management in challenging environments - WIC

## c) Looking ahead

<b>DPI 08/01</b>	The three Rs - Rootstock, Resistance and Resilience to grape phylloxera
<b>UM 0901</b>	Developing tools for predicting responses of viticultural pests and their natural enemies under climate change: modelling management and extension

## d) The next generation

<b>AFF 08/01</b>	Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry
<b>ARL 05/01</b>	Australian Rural Leadership Foundation
<b>AWR 1101</b>	GWRDC PhD and Honours support for 'Crush 2011'
<b>GWR 1001</b>	Wine Industry Leadership Program Project
<b>GWR H1001</b>	Investigation of the effects of sun damage in Semillon grapes
<b>GWR H1002</b>	Efficiency of alcoholic and malolactic fermentation during simultaneous and sequential fermentations and effects on organoleptic quality of Chardonnay wine
<b>GWR H1003</b>	Exploring the structure function relationships of analogues of the auxin plant hormone indole-3-acetic acid (IAA)
<b>GWR H1004</b>	Use of exogenous tannins during extended maceration to enhance colour stability and potential longevity of Pinot Noir
<b>GWR L1101</b>	Nuffield Scholarship
<b>GWR Ph05/05</b>	Environmental influences on grape and aroma potential
<b>GWR Ph06/06</b>	Characterisation of the methyltransferase gene family in grapevine to provide insights into their potential to influence grape and wine flavour and aroma
<b>GWR Ph07/02</b>	The analysis of smoke derived volatile compounds in wine
<b>GWR Ph07/04</b>	Temperature extremes during winemaking: Quantitation and definition of the impact on yeast activity and extraction
<b>GWR Ph07/06</b>	PhD support - Incursion Preparedness for Glassy-Winged Sharpshooter and the Plant Pathogenic Bacterium Xylella Fastidiosa
<b>GWR Ph08/01</b>	The role of yeast in the generation of important aroma compounds in wine
<b>GWR Ph08/02</b>	Irrigation with Winery Wastewater - Effects on Soil and Plant Health
<b>GWR Ph08/03</b>	Development of an extension approach to assist winegrape growers' adaptation to climate change
<b>GWR Ph08/04</b>	Linking winegrape berry sensory assessment characteristics to wine quality in a changing climate
<b>GWR Ph08/05</b>	Conventional, organic and biodynamic management: Effects on soil properties, vine physiology and wine grape quality
<b>GWR Ph08/07</b>	Direct and indirect influences of Partial Rootzone Drying (PRD) on salt uptake, ion accumulation and root-shoot interactions of grapevines
<b>GWR Ph0901</b>	Enhanced winemaking efficiency through fool-proof MLF: Evolution of superior lactic acid bacteria
<b>GWR Ph0903</b>	Investigating the role of the regulatory gene VvMYBA1 in flavour and aroma using transgenic grapevines
<b>GWR Ph0904</b>	The effect of water stress on the reproductive performance of grafted vines
<b>GWR Ph0905</b>	Protecting vines in stress environments - early detection of phylloxera infestation & grapevine stress using chemical biomarkers
<b>GWR Ph0907</b>	The role of nutrients and plant growth regulators in grapevine reproduction
<b>GWR Ph1001</b>	Identifying the mechanism of chloride exclusion in grapevines

<b>GWR Ph1003</b>	Indigenous yeast ecology and fermentation dynamics in selected wineries of Western Australia
<b>GWR Ph1004</b>	The effects of genotype and root traits on CI exclusion mechanisms in grapevine rootstocks
<b>GWR Ph1006</b>	Contribution of grape berry lipids to wine aroma
<b>GWR Ph1007</b>	Why are some parasitoids of light brown apple moth so uncommon in vineyards?
<b>GWR Ph1008</b>	An Investigation into the mitigation of extreme heat events on viticulture
<b>GWR Ph1009</b>	The effect of organic, biodynamic and conventional vineyard management inputs on growth and susceptibility of grapevines to botrytis rot and powdery mildew
<b>GWR Ph1010</b>	Microbiological and chemical characterisation of indigenous versus inoculated fermentations: the role of bacteria
<b>GWR Ph1011</b>	Generating robust yeast for successful fermentation in high sugar media
<b>GWR Ph1101</b>	Investigating consumers' knowledge of and attitude towards different oak maturation regimes
<b>RIR 0902</b>	Youth Undergraduate Studentship Program
<b>UA 05/01b</b>	Better wine through novel and better informed application of microbiology
<b>WFA 1101</b>	Leadership Development in the Wine Industry (Future Leaders)

## Program 5: Smart science, practical solutions

### a) Knowing development

<b>GWR 0909</b>	Extension Project Evaluation Services
<b>NWG 1102</b>	Knowledge Development and Management from Topical Research & Development

### b) Industry solutions

<b>ASV 1001</b>	Support of the AJGWR
<b>AWR 06/01</b>	Stream 4.1 Extension and knowledge transfer - the development and presentation of knowledge to industry personnel
<b>AWR 06/01</b>	Stream 4.2 Creating delivery mechanisms for the efficient transfer of knowledge and provision of technical information to the Australian wine and grape industries
<b>AWR 06/01</b>	Stream 4.3 Communication services and customised information delivery
<b>CSL 0901</b>	Vineyard Irrigation - delivering water savings through emerging technology
<b>CUT 1001</b>	Optimising industry returns from existing soil and water research
<b>GRP 0901</b>	GWRDC Regional Plan - Riverina 2009/10 to 2011/12
<b>GRP 0902</b>	GWRDC Regional Plan - Greater Victoria 2009/10 to 2011/12
<b>GRP 0903</b>	GWRDC Regional Plan - TAS 2009/10 to 2011/12
<b>GRP 0904</b>	GWRDC Regional Plan - SA North 2009/10 to 2011/12
<b>GRP 0905</b>	GWRDC Regional Plan - Murray Valley 2009/10 to 2011/12
<b>GRP 0906</b>	GWRDC Regional Plan - SA South 2009/10 to 2011/12
<b>GRP 0907</b>	GWRDC Regional Plan - SA Central 2009/10 to 2011/12
<b>GRP 0908</b>	GWRDC Regional Plan - Greater NSW and ACT 2009/10 to 2011/12
<b>GRP 0909</b>	GWRDC Regional Plan - WA 2009/10 to 2011/12
<b>GRP 0910</b>	GWRDC Regional Plan - Qld 2009/10 to 2011/12
<b>GRP 0911</b>	GWRDC Regional Plan - Riverland 2009/10 to 2011/12
<b>GRP 1101</b>	Enhancing Decision Making Capabilities for Riverland Growers – “Know Your Numbers Know Your Risks”
<b>GWR 0903</b>	Climate Change Project Manager
<b>GWR 1006</b>	Grapevine Yield Development and Crop Estimation book
<b>GWR IN1007</b>	Vine DNA identification
<b>GWR IN1008</b>	GWRDC Wine Sector Pest & Disease Debrief Sessions
<b>GWR IN1101</b>	GWRDC communication support
<b>GWR IN1102</b>	Guidelines to minimise the impacts of heat waves on wine grape production
<b>GWRDC AWITC</b>	Australian Wine Industry Tech Conference
<b>GWRDC SDG</b>	Strategic Directions Group support
<b>GWT 1007</b>	Advancement of infrared techniques to estimate grapevine water stress
<b>GWT 1010</b>	Comparison of bitter rot bunch rot fungi in the USA and Australia and associated study tour

<b>GWT 1011</b>	Grapevine night-time transpiration and refill as their capacity to recover from water stress
<b>GWT 1012</b>	Travel to the Biodynamic Agriculture Australia AGM and Conference
<b>GWT 1013</b>	9th International Symposium of Oenology, Bordeaux, France and 34th World Congress of Vine and Wine, Porto, Portugal
<b>GWT 1014</b>	Travel support for international presenters at the 'Below ground management for quality and productivity' Phylloxera and Grape Industry Board South Australia (PGIBSA) / Australian Society of Viticulture and Oenology (ASVO) seminar 28-29 July 2011
<b>GWT 1015</b>	Attendance and poster presentation at the Metabolomics Society Conference 2011
<b>GWT 1101</b>	9th Pangborn Sensory Science Symposium, Toronto, Canada
<b>GWT 1102</b>	13th Weurman flavour research symposium, Zaragoza, Spain
<b>GWT 1103</b>	Building a professional network with tannin researchers in Europe and attendance at the 7th Symposium of In Vino Analytica Scientia in Graz, Austria
<b>GWT 1104</b>	Present and attend the 17th International Giesco Symposium and academic tour of universities, vineyards and wineries in Northern Italy
<b>GWT 1105</b>	Travel to 'Crush 2011'
<b>GWT 1106</b>	Travel to Crush 2011, the grape and wine science symposium, Adelaide
<b>GWT 1107</b>	CRUSH 2011 The grape and wine science symposium
<b>GWT 1108</b>	Crush 2011 - Grape and Wine Research Symposium
<b>GWT 1109</b>	Attend the In Vino Analytica Scientia conference, Graz, and collaboration with colleagues at AgroParisTech
<b>GWT 1110</b>	Physiological changes and carbohydrates dynamics of Chardonnay grapevines affected by reduced irrigation and recovering regimes
<b>GWT 1111</b>	17th GiESCO Symposium - Travel 2011
<b>GWT 1112</b>	International keynote speaker for the 6th Australian Wine Industry Environment Conference
<b>WFA 0901</b>	Australian Wine Environmental Stewardship Coordination

### c) Administration and governance

<b>GWRDC 5YP</b>	5 year plan
<b>GWRDC CRRDC</b>	Council of Rural R&D Corporations - CRRDC