

Gaps analyses for 2014–15 investment priorities: Vineyard profitability and Process efficiency

The *GWRDC Strategic RD&E Plan 2012–17* identifies vineyard profitability and process efficiency as priorities for the Australian wine sector.

Background

Enhancing the value proposition for the consumer and the producer will require a set of new tools as well as changes in practice by the grape and wine sector to improve products, processes and practices along the value chain.

Vineyard profitability, theme 1.3 of the *GWRDC Strategic RD&E Plan 2012–17* (Strategic Plan), focuses on identifying environmentally sustainable inputs into the vineyard and technologies that will allow reductions in vineyard labour and input costs. It aims to facilitate technology transfer to ensure efficient use of resources in the vineyard, such as water and nutrients.

Process efficiency, theme 3.3 of the Strategic Plan, focuses on developing novel and improved practices and processes from the vineyard through to the point of sale. New winemaking practices and processes and improved packaging and transport strategies that achieve the wine sector's aim to meet consumer demands for wine quality also require a greater understanding of the drivers of wine quality. Improved productivity and profitability will also flow from identifying product innovation that unlocks new demand or taps unrealised value.

Situation analysis

GWRDC commissioned independent consultants to review current knowledge in these areas and to identify industry needs for process efficiency and vineyard profitability. A summary is provided below of R&D gaps and opportunities that GWRDC investment could address.

Vineyard profitability

Current situation

Managing a vineyard through best-practice methods and adoption of innovative products and processes can assist in improving productivity, quality control and enhancement, sustainable land management and natural resource use – ultimately ensuring a viable business in the long term.

The wine industry has been faced with a number of external and uncontrollable forces affecting the revenue from winegrapes however, the opportunities to influence profitability through productivity, quality and process efficiency within a vineyard operation are significant. Many vineyard enterprises have already adopted practices such as mechanisation to improve operations, reduce inputs and increase profitability.

GWRDC has made significant investments in R&D projects contributing to the broad theme of vineyard profitability. Current projects are exploring opportunities to objectively measure grape quality, identify grapevine material suited to specific climates, elucidating the impacts of management practices on vine balance, and quantifying soil properties and linking these characteristics to wine profiles.

Through an independent review of industry stakeholders and researchers, GWRDC has identified key gaps in knowledge and potential researchable areas for consideration in the area of vineyard profitability.

Research and development gaps

1. Grape yield / quality nexus – relationships between grape yield and quality, management practices to optimise yield and quality
2. Yield estimation – accurate yield estimation systems, use of automotive systems, real-time technology, vision systems and remote sensing.

It was also recommended that industry could be more engaged in projects on vineyard profitability through mechanisms such as industry reference groups for key projects.

Process efficiency

Current situation

Using a focus on process efficiency as a means of driving business sustainability is relatively new to most of the wine industry. There is a need to build the capacity of both management and labour in the tools of process efficiency that draws on successful applications and experience learned in other industries.

Research and Development Gaps

Some specific gaps in knowledge were identified:

1. Optimisation of process operations (e.g. storage, and clarifications, especially of high solids streams), exploration of in-situ treatment technologies, and improved processing scheduling.
2. Analytical technologies, especially accurate vineyard crop forecasting, and real-time determination of cold stability.
3. Development of technology (pre-commercialisation only) – adapting and adopting on-line sensors and innovative processing technology sourced from other industries.

Opportunities

Engagement with external industry experience and knowledge to:

1. Establish high level benchmarks for best practice of appropriate process efficiency metrics to identify 'hot spots' needing priority effort;
2. Seek to identify appropriate technology from other industries that might provide benefit and be readily adapted; and
3. Identify appropriate experts for possible engagement as collaborators in future projects.

More industry engagement should be sought in projects on process efficiency through mechanisms such as establishing industry reference groups for key projects, or placement of researchers in wineries that are partners to projects.

Next steps

GWRDC is looking for research and development proposals that address industry priorities and satisfy the following criteria:

- lead to industry relevant outcomes in a timely manner
- involve appropriate collaboration
- represent good value for money, including appropriate co-contribution
- are novel and feasible.

Key dates:

Preliminary project applications due	Friday 28 June 2013
Final project applications (FPAs) invited	mid-August 2013
FPAs due	Friday 27 September 2013
Applicants advised	December 2013
Contracts issued	from January 2014
Projects start	July 2014