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McLaren Vale Grape Wine and Tourism Association

AgTech mapping McLaren Vale

The use of digital vineyard maps, coupled with ongoing exposure to agtech solutions through extension activities conducted as part of the project, is expected to increase the rate of agtech adoption in McLaren Vale.

While the benefits of agtech are understood and valued by many across the primary industries sector, there are still significant gaps in knowledge and application.

The McLaren Vale Grape Wine and Tourism Association (MVGWTA) identified one of the main restrictions in achieving wider uptake of agtech by winegrape growers was a lack of access to digital vineyard maps which were shareable and able to be used across different platforms.

This was despite increasing demand for detailed data for vineyard management and to meet sustainability certification and customer requirements.

To help bridge this gap, MVGWTA successfully applied for a grant through the Department of Primary Industries and Regions' (PIRSA) AgTech Growth Fund to to create high-resolution, standardised digital vineyard maps that could be shared with agtech providers and be used to meet ongoing compliance obligations, including under Sustainable Winegrowing Australia (SWA).

Government of South Australia
Department of Primary Industries and Regions

Industry challenge

According to MVGWTA chief executive officer Erin Leggat, the established method of digitally mapping vineyard rows prior to this project was prohibitively expensive.

"Unlike broadacre agriculture, which is digitally managed via largescale grid references, viticulture requires precision digital mapping based on vineyard rows, which are then grouped and managed as blocks," she says.

"The established method was expensive because it required either surveying row end points or the use of drone photographs provided to a geographic information system (GIS) mapping expert to individually draw the rows for digital maps.

"Every agtech provider required a vineyard to be mapped in a manner specifically designed for their own software or system. There was no standardised mapping system available for winegrape growers."

Approach

MVGWTA's project through the AgTech Growth Fund involved the development of two different products:
1) Interoperable digital vineyard maps featuring vineyard rows as AB lines that complied with SWA mapping criteria for certification; and
2) A platform to allow growers to access, edit, update and share digital vineyard maps with their agtech providers.

"To help extend the information, we also held workshops and demonstration sessions which increased grower knowledge in the use and possibility for agtech to increase vineyard efficiencies and improve economies of scale," Erin says.

Outcomes

The development of a user-friendly platform allowed growers to view, access, edit, update and export vineyard maps themselves, without the need to hire a GIS consultant to update their maps each time an element of their vineyard changed.

Growers are also able to create reports based on the maps and share their maps with agtech developers.

Erin says the use of digital vineyard maps by the region's winegrape growers, coupled with ongoing exposure to agtech solutions through extension activities conducted as part of the project, is expected to increase the rate of agtech adoption in McLaren Vale as more growers have their vineyards mapped and are engaged in the project and platform.
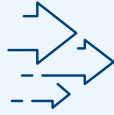
Future opportunities

The prototype platform developed for this project is still being trialed and tested McLaren Vale growers. The next stage of development is expected to include refinement and implementing additional features, including more reporting features, grape varieties and accessibility features.

Erin says privacy and data protection is something they are mindful of going forward.

"The next phase of the platform's development will require the formation of governance processes and legal documentation so that data accessibility and protection is adequately ensured, and that the ongoing sustainable management and development of the platform is guaranteed," she says.

Erin says as growers become more accustomed to applying their digital maps to a range of technologies, the maps and platform could have a wide application for viticulture, including digital guidance for autonomous machinery, regional mapping of ground water, data supply for winery purchase agreements, and base maps for tracking chemical application.

"Projected increases in SWA certification indicates that demand for vineyard mapping will increase and that this type of user-friendly system will be the best option for growers."

Producer's view

McLaren Vale winegrape grower Jonathon Trott admits he was initially sceptical about MVGWTA's vineyard mapping project. However, after being shown how the mapping would work, he was quickly convinced of the benefits it could bring to growers across the district.

"I think there is huge potential for wider adoption of vineyard mapping now," Jonathon says.

"The maps automatically pick up where the posts and rows are in the vineyard and if we can get maps with two-centimetre accuracy then there will be a big future in it for growers, particularly as autonomous machinery becomes more attainable."

Among the benefits Jonathon sees are local employment and precision application.

"I visited the Yorke Peninsula Field Days in 2023 where some people were claiming savings of up to 30 per cent in chemical application thanks to variable rate technology, which would be a huge benefit to vineyards," he says.

"If we can get contract harvesters on board with it too then there would be a reduction in vineyard trellis damage as they would be able to keep the machinery centred over the row. That in itself would be a huge benefit and save us money having to replace posts every year."

Contact

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