App to help manage grapevines

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A new, free phone app developed by University of Adelaide researchers will help grapegrowers and viticulturists manage their vines by giving a quick measure of vine canopy size and density.

The iPad and iPhone app uses the devices' camera and GPS capability to calculate the size and density of the vine canopy and its location in the vineyard. The aim is to help users monitor their vines and manage the required balance between vegetative growth and fruit production.

The development of the app – called VitiCanopy – has been supported by Wine Australia as part of a wider project investigating the relationships between vine balance and wine quality.

"Overcropped vines or vines with excessive canopy are referred to as 'out-of-balance' – generally being associated with lower quality fruit and hence lower returns," says project leader Dr Cassandra Collins, Senior Lecturer in Viticulture with the School of Agriculture, Food and Wine. "To achieve vine balance, grapevines require enough leaf area to ripen the fruit and produce a desired fruit quality, but not too much that it's detrimental to fruit development through shading or a higher incidence of disease."

Vine balance can be measured as a ratio of leaf area to fruit yield. Traditional ways, however, of measuring leaf area are tedious, laborious and time-consuming and can damage the vines – or alternatively it can require expensive and complex instruments.

"Our app offers a very simple way to measure leaf area index (LAI)," says chief investigator Dr Roberta De Bei. "This measurement can then be related to fruit yield for an assessment of vine balance as well as capture canopy variation across a vineyard. The GPS capability of the app means that information gathered can also be mapped."

The research and development team also included Professor Steve Tyerman and Associate Professor Matthew Gilliham, University of Adelaide, and Dr Sigfredo Fuentes, University of Melbourne, and Treasury Wine Estates.

Wine Australia's Research Development and Extension Portfolio Manager, Dr Liz Waters, says this new app will help viticulturists optimise vine balance for best grape quality.

"Wine Australia is committed to helping viticulturists manage their vines to maximise quality, profit and sustainability and to improve competitiveness across the grape and wine community. We encourage growers to explore this new tool to help them get the most from their

vineyards," says Dr Waters.

The app is available from [Apple's app store](). To use the app a grower takes a standardised image of the vine canopy. The app then analyses the image and calculates LAI, taking into account the canopy shape and density, and recording the time and location of the image. An android version of the app is being developed.

Provided by University of Adelaide