

2020 ONLINE RESEARCH UPDATE

Wednesday 28 October 10:30 - 11 am

The National Wine and Grape Industry Centre will highlight new and innovative research from the vineyard to the glass in this free event.

10:00 am **Welcome:** President of the NSW Wine Industry Association Mark Bourne.

10:05 am **Smartphone app for vine nutrition**

Dr Suzy Rogiers, NSW DPI principal research scientist

In this presentation we will introduce a prototype of a smartphone app to capture and analyse images of vine leaves for rapid assessment of nutritional disorders. The tool uses underlying customised machine learning and computer vision techniques. We will also discuss symptoms specific to several nutritional disorders.

10:25 am **Techniques for determining the levels of grey mould contamination of grapes**

Professor Chris Steel Charles Sturt University

Despite many developments in our understanding of the how the fungus *Botrytis cinerea* causes grey mould of grapes, methods for accurately estimating disease severity are lacking. An apparently healthy disease free bunch may harbour growth of the fungus within the bunch interior, which may not be visible to the naked eye. This presentation will review some of the recent developments and alternative ways in which *Botrytis* contamination can be assessed and quantified in wine grapes.

10:45 am **Measurement of different forms of Cu in wine**

Dr Andrew Clark Charles Sturt University

Find out about new methodology that wineries can use to measure free, bound and total Cu concentrations in wine with a spectrophotometer. Previously smaller wineries haven't been able to readily measure the Cu concentration of their wine without sending samples away for analysis. The method we've developed enables wineries to conduct routine quantification of total Cu in wine using standard spectrophotometric equipment generally found in most wineries, and using the same equipment to assess the different forms of Cu in wine.

11:05 am **Benchmarking regional and sub-regional Shiraz fine wines**

Dr Sijing Li and Dr John Blackman Charles Sturt University

Charles Sturt University research has examined the correlations between the sensory properties of Australian Shiraz wines, their chemical profiles and the climatic regions from which the grapes were sourced. Defining a terroir influence will allow Australian fine wine producers to substantiate uniqueness claims to command premium prices in a global context – this project has shown that this is possible. Shiraz wines from six Australian regions covering a range of climatic conditions, including Barossa, Canberra, Heathcote, Hunter Valley, McLaren Vale and Yarra Valley, were selected for the project. The wines were firstly classified according to their sensory composition, and a number of sensory features characteristic of particular regions were identified. Using a range of targeted and untargeted chemical analyses, this research also found Shiraz wines have chemical 'fingerprints' that are specific to their region and that some individual markers of terroir could be recognised.

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Presenters

Mark Bourne

President of the NSW Wine Industry Association

Mark is the owner of Cuttaway Hill Wines and is currently the longest serving wine producer in the Southern Highlands wine region with over 22 years' experience in the wine industry including as a grape grower, viticultural consultant, winemaker and brand manager. He was the founding president of The Southern Highlands Vignerons Association and is currently the outgoing President of the Southern Highlands Food & Wine Association after five years' service. He is also a Board member of the National Wine and Grape Industry Centre (NWGIC).

Dr Suzy Rogiers

NSW Department of Primary Industries Principal research scientist

Suzy attained her PhD from the University of Alberta, Canada in 1997 where she studied the ripening physiology and biochemistry of saskatoon berries, a miniature pome fruit native to western Canada. Since then she has been investigating grapevine physiology with an emphasis on plant water relations and berry development.

Professor Chris Steel

Charles Sturt University Professor of Viticulture

Chris joined Charles Sturt University in 1995 and his research includes the management and epidemiology of bunch rot diseases, identification and detection of grapevine fungal pathogens and impacts of vine pathogens on wine chemistry and quality. The impact of climate and the environment on grape production have also been a major focus of his research.

Dr Andrew Clark

Charles Sturt University senior lecturer in wine chemistry

Andrew completed his undergraduate) and PhD studies at The University of Melbourne, with the latter focusing on analytical chemistry applied to oxidation-induced wine spoilage processes. He commenced his position at Charles Sturt University in 2001. His research interests include general wine oxidation/reduction chemistry, compositional measures of wine, metal speciation/fractionation techniques and their application to predict the metal-induced spoilage of wine, the impact of light on wine and the use of ascorbic acid in wine.

Dr John Blackman

Charles Sturt University lecturer in wine science

John graduated from the Bachelor of Wine Science degree at Charles Sturt in 2002. His PhD examined the sensory description and consumer preference of Hunter Valley Semillon. He's currently involved in a variety of research projects that require small-lot winemaking to determine the impact of various viticultural trials, winemaking procedures and the investigation of wine fault amelioration. He is also involved in sensory testing which is used to establish treatment differences and sensory descriptive analysis allows these differences to be described and quantified.

Dr Sijing Li

Charles Sturt University postdoctoral research fellow

Sijing graduated with a Bachelor's degree in Viticulture and Oenology with first class honours from The University of Adelaide in 2013. In 2018, at the same institute, she completed her PhD in wine science with a thesis titled 'selective use of winemaking supplements to modulate the chemical and sensory properties of Shiraz wine'. She has published a number of peer-reviewed articles in the field of oak volatile compounds and wine macromolecules composition. Her research at the NWGIC has examined Australian Shiraz wines in relation to their volatile composition, through both quantitative and chemometrics approaches.

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