



Winetech Scan

Wine Industry Network of Expertise and Technology • Netwerk van Kundigheid en Tegnologie vir die Wynbedryf



Latest research

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The effect of grapevine leafroll virus on grape yield and juice and wine chemistry

Washington State University did a three year study from 2009 – 2011 to look at the impact of grapevine leafroll disease (GLD) on grapevine fruit yield as well as grape and wine chemistry. An own rooted, commercial Merlot vineyard was used for the study. The researchers observed differences in time of ripening, yield, pH, titratable acidity, sugars, alcohol and anthocyanin concentrations in juice and in the final wines. The wines made from non-infected vines had better colour and were fruitier than wines from infected vines. [Read more](#)



Pre-fermentation fining effects on the aroma chemistry of Marlborough Sauvignon blanc press fractions

Researchers from New Zealand determined the effect of four different fining agents used in the juice stage on S. blanc aroma chemistry. The four agents

were: activated carbon, gelatine, PVPP and a mixed product containing bentonite, PVPP and isinglass. They used grapes from two different vineyards and fined free run juice as well as the press fractions. Differences were observed between vineyards and press fractions. Overall activated carbon had the most drastic effect on lowering aromatic compounds.

What was interesting was that most of the fining agents lowered the IBMP (pyrazine) content in final wines; between 1 - 2 ng/L lower than the control that received no fining. With the exception of activated carbon, little effect was seen in terms of the volatile thiols, which is good news for winemakers making use of pre-fermentation fining agents to lower the incidence of pinking and oxidation later on in a wine's life. Some effects (only activated carbon being really significant) were seen on other aromatic compounds and the choice of product and dosage is therefore important considerations for winemakers. [Read more](#)

(Article not open source)



The use of glucose oxidase and catalase for the enzymatic reduction of the potential ethanol content in wine

German researchers once again attempted to find a working, practical solution for the use of glucose oxidase enzyme (GOX) to reduce glucose content in

juice prior to fermentation and therefore final alcohol concentrations in wines. This concept was initially explored in 1975 and subsequently various researchers internationally and locally attempted to make it work on commercial scale without success. The problem with the use of GOX is that the enzyme is oxygen dependent, which means the juice needs to be aerated quite substantially, causing oxidation. In this particular paper, researchers combined the use of GOX with catalase, the latter being an enzyme that hydrolyses H_2O_2 , the by-product of GOX conversion of glucose to gluconic acid, and the cause of the oxidation. The wines produced all had between 1 - 2% less alcohol but had pH's of under 3 and double the concentration of titratable acidity. De-acidification of the musts left the treated wines mostly with negative sensory attributes and not typical. The use of GOX and catalase in combination is thus not a suitable strategy to lower a wine's alcohol content. [Read more](#) (Article not open source)

In the news



Vergelegen winning the fight against leafroll virus

Anglo American-owned Vergelegen in Somerset West began its hugely ambitious project to eradicate leaf roll virus from the estate in 1999. That first, newly-planted vineyard on the farm is now 17 years old, making it the world's oldest virus-free vineyard of its type. The team at Vergelegen is led by MD Don Tooth and winemaker André van Rensburg. They have worked closely with Professor Gerhard Pietersen of the Agricultural Research Council - Plant Protection Research Institute at the University of Pretoria. Professor Pietersen, whose research was funded by **Winetech**, sought an agricultural

property where he could demonstrate the scientific and commercial value to the industry if the virus could be well-managed and even eradicated. A sustainable model had to be established, with a balance between replanting vineyards and ongoing commercial farming. [Read more](#)



IGWS launches a robotics flagship project

The Viticulture platform of the Institute for Grape and Wine Science (IGWS) launched an ambitious robotics project with the first demonstration of a vineyard robot prototype. The remote controlled Robot X (also known as "The Dassie") was introduced to a group of viticulturists in a vineyard used for training at the Stellenbosch University (SU) experimental farm, Welgevallen. This project was undertaken with the vision of making viticulture in South Africa sustainable and future-focused by using advanced technology. Basic challenges and opportunities in the industry will be used as a basis to help determine the robot's functions. The purpose of introducing the prototype to the industry at a very early stage, is to encourage interaction with and input from industry. [Read more](#)