



Winetech Scan

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

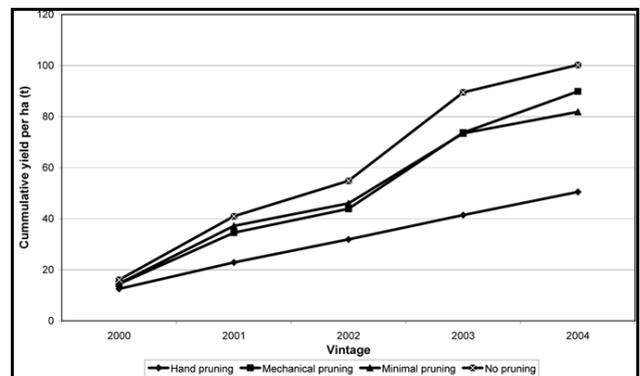
May 2008

Research outputs

- A researcher at the Australian Wine Research Institute says that reducing alcohol levels in wine could enhance flavour. He is working on developing wine yeasts that will convert less of the grape sugar into alcohol. High alcohol levels are caused by grapes being left on the vine longer to get better flavours and aromas, however high alcohol has a tendency to suppress the flavour of wine. www.abc.net.au/news/stories/2008/05/15/2246209.htm
- Researchers at University of California, Davis (UC Davis) have released five new pest-resistant grape rootstocks which are environmentally friendly alternatives to chemical fumigants. The new rootstocks, developed using conventional breeding methods, are designed to be planted in the ground without fumigation. They are resistant to nematodes (tiny worms) and phylloxera (aphids), two of the most damaging vineyard pests. In the past, growers have used chemical fumigants to kill such pests but, in many cases, fumigation now is either ineffective or not permitted. The rootstock includes the root and trunk of a grape plant onto which many different grape vine varieties can be grafted. www.news.ucdavis.edu/search/news_detail.lasso?id=8610

Local research results

- A nine-year study on the effect of four different pruning methods on the viticultural and oenological performance of certain wine grape varieties involving three different trials, at three different localities, each with different growing conditions, has been conducted with nine different wine grape varieties. The pruning methods were: by hand, mechanical, minimal and no pruning. Compared to hand pruning, the alternative pruning methods were hugely labour saving and contributed greatly to reducing production costs of wine grapes. However, a prerequisite for these methods is the availability of mechanical harvest machines because hand harvesting the resultant numerous small bunches by hand is not viable. Although berry mass and volume as well as physical bunch size were reduced by alternative pruning methods, the increased number of bunches was responsible for considerable yield increases compared to hand pruning. Wine quality in most cases was either not affected or was improved. Cabernet Sauvignon, Pinotage and Chardonnay seemed to adapt the best to alternative pruning, while Sauvignon Blanc and Merlot were less adaptable. Chenin Blanc, Colombar, Shiraz and Ruby Cabernet were good candidates for alternative pruning. www.sawislibrary.co.za/dbtextimages/FinalReport132.pdf and *S. Afr. J. Enol. Vitic.* 28(2) pp107-139.
- A project to interpret the geological impact on soil, wine characteristics and marketability of each wine producing region in South Africa has resulted in an extensive GIS database and a number of articles and presentations concerning the geology of some of the wine producing areas. However, not all of the wine producing areas were covered, mainly because of difficulties in presenting the amount of detail in small scale map format. Compilation into CD/book format is about 80% complete. www.sawislibrary.co.za/dbtextimages/FinalReport139.pdf



Cumulative yield of Cabernet Sauvignon with no pruning (top) and hand pruning (bottom)

Health Effects

- Wasp venom in wine and grape juice appears to have caused several cases of severe allergic reactions in people, according to Spanish doctors writing in the *New England Journal of Medicine*. They concluded that the venom came from wasps accidentally crushed along with the grapes at the first stage of winemaking. All the patients were successfully treated, and had antibodies suggesting a recent bee or wasp sting. However, none of the patients reported being stung. So the doctors looked for allergic responses to red and white grape juice, along with a newly pressed wine and three aged wines, all from different vineyards. Both types of juice and the freshly made wine all triggered reactions in blood samples taken from the patients. Further chemical tests provided strong evidence that this was due to trace amounts of venom from yellow-jacket wasps in the beverages. The aged wines did not produce an allergic reaction in the blood tests because any venom proteins they might have contained would have degraded as the wine matured. <http://content.nejm.org/cgi/reprint/357/7/719.pdf>

- Pesticide Action Network Europe, together with NGOs from Austria, France and Germany, analysed 40 different wines purchased inside the EU and found that 100% of conventional wines (34) sampled contained pesticides, with one bottle containing 10 different pesticides. On average each wine sample contained over four pesticides. The analysis revealed 24 different pesticide contaminants, including five classified as being carcinogenic, mutagenic, reprotoxic or endocrine-disrupting by the European Union. Of the six wines labelled as organic, one was found to contain pesticides. 14 of the wines were French, 10 German, 9 Austrian, 3 Italian, and one each from Australia, Chile, Portugal and South Africa (from Stellenbosch, with 2 pesticides). Grapes are among the most contaminated food products on sale in the EU and receive a higher dose of synthetic pesticides than almost any other crop. The NGOs are now calling on EU politicians and retailers to help eliminate hazardous pesticides from the food chain. www.pan-europe.info/Media/PR/080326.html
- People at risk for coronary heart disease are often also at risk for non-alcoholic fatty liver disease (NAFLD). A study of 11 754 people of age 21 years and older in the United States which included participants who either reported no alcohol consumption during the survey month, or reported drinking wine, beer, or liquor up to one alcoholic beverage per day, found that modest wine drinking, defined as one glass a day, decreased the prevalence of suspected NAFLD. The study did not include higher levels of alcohol consumption as such levels had already been reported to be harmful in the overweight and obese. For those who reported drinking up to one glass of wine per day, as compared to no alcohol consumption, the risk of liver disease due to NAFLD was cut in half. In contrast, individuals who reported modest consumption of beer or liquor had over four times the probability of having suspected NAFLD, compared with wine drinkers. NAFLD is the most common liver disease in the United States, affecting over 40 million adults. Earlier research has shown that as many as five percent of adults with NAFLD will develop cirrhosis. *Hepatology* June 2008 <http://dx.doi.org/10.1002/hep.22292>

Closures

- A student team has designed a new wine closure and has won \$15 000 in start-up funding in an annual business plan competition at the University of California, Davis (UC Davis). A variety of synthetic closures, including screw caps, now are used as stoppers in nearly half of the 2 billion bottles of wine produced in North America each year. Alternatives to cork are attractive because they cut the risk of 'cork taint', the result of contamination with TCA, which is thought to affect billions of dollars worth of wine worldwide each year. However, good corks let in the right amount of oxygen, which helps red wines age properly. Keller's design offers the prospect of a cap that eliminates the worry about taint while still letting in oxygen. His team's patent-pending design is a \$0.05 disc that fits beneath a screw cap. Made from alternating layers of polyethylene and perforated aluminium or tin, it can be fine-tuned to match the oxygen demands of different varietals. The design has attracted interest from Gallo and Cork Supply USA, America's largest distributor of wine closures. <http://www.sacbee.com/103/story/960679.html>

The Internet

- Able Grape www.ablegrape.com is a specialist wine search engine for research and learning. Able Grape aims to be the world's most comprehensive, up-to-date and authoritative source for online wine information. It includes many useful academic sources, and some unique features. At present it covers more than 36 000 sites and some 11 million webpages, and intentionally has little retail content. As Able Grape is wine-specific, wine-specific terms are not required in the search text. In Google you would need to type 'Spanish Wine' or 'climate change and wine', while on Able Grape you will get better results by simply typing 'Spain' or 'climate change'.
- Microsoft will ban wine sales from its French MSN website from the end of May, citing the current problematic legal situation in France with regard to the Internet and alcohol publicity and sales. Microsoft said, 'In effect [French] law underlines that the Internet is not one of the approved mediums for alcohol publicity'. Julien Pichoff of the French website, Findawine.com, said, 'We think this is a major threat to the industry - to anyone with wine on the Internet. Microsoft are selling space that is wine related and they are scared they might be fined. www.wine-business-international.com/News_Microsoft_bans_wine_from_search_engine.html

Climate change, CO₂ and carbon footprints

- The Excel-based *Greenhouse Gas Accounting Calculator for the International Wine Industry*, including the User Guide and Protocol is available for free download at www.ipw.co.za. Wineries and vineyards can use the tool in order to identify the carbon footprint (greenhouse gas emissions) of various aspects of their operations. The Protocol document lists data sources and standards used in developing the tool.

Vineyard Practices						More Forward	More Back
Fertilizer Addition Emissions (Nitrous Oxide)	Fertilizer Applied	Units	Nitrogen Content %	CO ₂ e Tonnes Emitted	Quality Rank		
Total Growth	2000.00	lb	75.00	4.97	F		
Red Fruit	2000.00	lb	85.00	177.92	F		
		lb		0.00	F		
		lb		0.00	F		
Soil Emissions (gross Cope)							
Vineyard Area	75.00	Acres		990.00	X		
		Acres		0.00	X		
		Acres		0.00	X		
Sub Total				1172.35368	X		
Row Cropping Sequence (Carbon)							
Vineyard 1	50.00	Acres	95.00	24.82626	X		
		Acres		0	X		
		Acres		0	X		
Total CO ₂ e Tonnes Emitted				1157.774754	X		

Winetech Scan is available on the Winetech website (www.winetech.co.za) and a blog there welcomes readers' comments, opinions and feedback. To subscribe please email Gerard Martin: marting@winetech.co.za