

- An exploratory survey used toasted woods other than oak to flavour wine. Eleven different woods and oak were cut into chips 20 × 10 × 2.5 mm and toasted at 200°C for 2 hours (light toast) or 210°C for 3 hours (dark). The toasted chips were infused in un-oaked chardonnay (5gms per litre) for 2 weeks. Infusions were also done with model wine (water, ethanol, tartaric acid) adjusted to pH 3.5. Weight losses on light and dark toasting were highly variable between species as were colour changes, suggesting potential for different flavour outcomes from chemical changes. Ultraviolet absorbance curves were also highly variable showing that different species yielded different quantities of potentially flavour-active phenolic compounds in real and model wine. In an informal sensory trial with the 24 species/toast combinations infused in chardonnay all but one of the woods resulted in flavours reminiscent of oaked wines. A hedonic consumer trial with 4 species and oak compared with un-infused chardonnay showed that all had potential as a flavouring. Thus, woods unsuited to barrel construction could provide unrealized flavour opportunities in the wine industry, and could also extend to flavouring spirits. <http://dx.doi.org/10.1111/j.1750-3841.2010.01829.x>

Local Research News

- Vine mealybug (VMB) infestation is one of the most serious problems for vine growers. It is considered to be the major vector of grapevine leafroll virus and also causes damage by its feeding and by honeydew secretions. It has the potential to become resistant to conventional sprays. Four vineyards with a history of mealybug infestation in Constantia, Stellenbosch, Paarl and Franschhoek were chosen to study infestation by the VMB. There were slight peaks of mealybug numbers in November and December, with the major peak occurring between December and January at all four farms. Greater proportions of VMBs were found on the stem and lateral branches. The most notable aspect of the within-vine distribution was that there were VMBs on lateral branches on all sampling dates. The proportion of the mealybug population on the stems was smallest in January, when grape bunches were maturing. Late in the season VMB numbers on the stem increased as the matured grapes were harvested. This suggested that the VMB was seeking protection, probably from oncoming adverse winter conditions, and was moving closer to the ground. This behaviour could have a direct impact on the ability of any parasitoid to effectively control mealybug numbers. The next stage of the project was to study how mass releases of *Anagyrus* sp. (parasitic wasps) could be used as a biological control agent on VMB under South African conditions. But because of the collapse of both the VMB and *Anagyrus* sp. colonies as a result of contamination by *Coccidoxenoides perminutus* the project was suspended in 2010. *C. perminutus* (often referred to as Cocci's) are small wasps (3mm long) which originate from Hawaii and are extremely effective parasites of the VMB. www.sawislibrary.co.za/dbtextimages/Winetech2010_08.pdf
- Some trends in management practices for vineyards have emerged over the past 5 years which are based on unsubstantiated evidence. These are the belief that small berries resulting from water stressed vines produce a higher concentration of red-coloured compounds and thus higher quality wines, and that the irrigation of grapevines results in a proportional decrease in wine quality. To probe these beliefs, a study was undertaken to track changes in the fruit phenolic composition of *Vitis vinifera* cv. Merlot in response to water deficit, all the way to wine phenolic composition over two consecutive seasons. Irrigation treatments were applied which produced seasonal average stem water potentials ranging between -0.7 MPa and -1.4 MPa. Berry fresh weight was significantly reduced in response to water deficit, primarily due to decreases in pericarp weight (the edible tissue around the seeds). Increases in the concentration of grape anthocyanins and flavonols in response to water deficit were found when expressed per unit grape berry fresh weight. Skin-derived proanthocyanidin concentration was not affected by the irrigation treatments. During fermentation, the concentration of anthocyanins and flavonols in wine closely approximated the levels found in grape berries, with the non-irrigated and minimally irrigated treatments producing musts highest in both measures, which was reflected in changes in the wine colour of ferments. The wines from non-irrigated and minimally irrigated treatments had higher levels of bisulphite-resistant pigments compared to the highly irrigated treatments, but differences in phenolic composition were minor. This has implications for the promotion of the long-term stability of colour in aged wines. www.sawislibrary.co.za/dbtextimages/Winetech2010_01.pdf

Innovations

- A Spanish company is distributing an all-glass wine bottle which prevents wine sediments from reaching the wine glass. The bottle design consists of a double base. The lower base has two perpendicular ledges that create a narrowing that traps sediments and impurities in the bottle. It is claimed that the bottle offers the winemaker the option of eliminating clarification treatments, cold stabilization and filtration. The elimination of these treatments should allow optimal wine sensory characteristics to be maintained, while at the same time reducing labour and material costs. www.martinberasateguisystem.com/blog/acerca-de (in Spanish)



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