
Sooty mould trial update – sensory testing after two years

During the 2017 vintage, many grapegrowers in South Australia were affected by ‘sooty mould’, with significant quantities of grapes being rejected by wine producers. Sooty mould refers to a fungal infection where all parts of the vine can become blackened, as though they are covered with a layer of soot. The sooty mould fungi colonise areas of the vine where ‘honeydew’ has been excreted by sap-sucking insects such as scale and mealybug, with scale being the primary cause of the most severe outbreaks of sooty mould in 2017.

2017 winemaking trial

To investigate any impacts of sooty mould on the composition, processing, and sensory attributes of a Shiraz wine, the AWRI conducted a small-scale winemaking trial with sooty mould-affected and unaffected fruit from the Langhorne Creek region. In addition, a Langhorne Creek wine producer also conducted a trial with one-tonne lots of sooty mould-affected and unaffected Chardonnay and Shiraz grapes.

The results of the AWRI trial, and of sensory evaluation performed at the AWRI on wines from the one-tonne lot trial, have been previously reported (Godden 2017, Godden 2018a, Godden 2018b). In the chemical analysis conducted from crushing through to three weeks post-bottling, few analytical differences were seen between wines made with or without sooty mould-affected grapes. In addition, an experienced and trained sensory panel could not distinguish between the one-tonne lot sooty mould-affected and unaffected wines, or between the AWRI control wine and a wine made with the inclusion of 25% sooty mould-affected grapes, with sensory analysis conducted about four weeks after bottling. The only major difference seen between the wines in the AWRI trial was that the sooty mould-affected treatments (5% and 25% sooty mould-affected grape inclusion) produced up to 10% more lees than the control wines.

2019 sensory testing

An additional round of sensory difference testing was held in March 2019, with the aim of assessing any possible longer-term sensory impacts of sooty mould. An experienced and trained panel of 32 assessors conducted triangle difference testing on the one-tonne lot Chardonnay and Shiraz wines and the AWRI control and 25% sooty mould-affected Shiraz wines. Once again, the panel could not distinguish between each of the three pairs of wines, with the number of correct assessments for the three wines being 10, 10 and 11 respectively, equivalent to the number predicted by chance.

Conclusions

While the results of these trials indicate that sooty mould had little effect on the sensory or chemical attributes of the Chardonnay and Shiraz wines, caution should be exercised when interpreting the results. The sooty mould present on all three batches of fruit appeared to have dried out during an extended period of sunny and low humidity weather at the end of the 2017 vintage and had apparently ceased growing or spreading. In addition, few other moulds were present, and fruit for the AWRI trial was sorted to exclude bunches displaying defects other than sooty mould. It is possible, therefore, that different results might have been obtained if the sooty mould had been actively growing at the time of harvest. In addition, in many situations where sooty mould is present, other microorganisms might have also proliferated, which alone, or in combination with the sooty mould, could have a negative effect on wine quality. On the other hand, the absence of other defects suggests that the sooty mould alone, of the type present on the grapes used for these trials, may not have a negative effect on wine quality.

Acknowledgements

This work is supported by Australia's grapegrowers and winemakers through their investment body Wine Australia, and matching funds from the Australian Government. The AWRI is a member of the Wine Innovation Cluster in Adelaide.

References

- Godden, P. 2017. Ask the AWRI: Sooty mould. Aust. N.Z. Grapegrower Winemaker 645: 30-32.
- Godden, P. 2018a. Sooty mould winemaking trial: the impact on processing, composition and sensory attributes of Shiraz wine. Wine Vitic. J. 33(2): 19-24.
- Godden, P. 2018b. https://www.asvo.com.au/asvo-proceedings/presentation-page_winemaking-trials-with-sooty-mould/ accessed 03 April 2019.

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