

Sooty mould and its impact on wine processing, composition and sensory attributes



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SUMMARY

- A small-scale winemaking trial was conducted with sooty mould-affected and unaffected Shiraz grapes harvested from the same vines.
- Trained sensory panels could not distinguish between wine made with the inclusion of 25% sooty mould-affected fruit and a non sooty mould-affected control wine
- The same result was obtained from a trial with one-tonne lots of Chardonnay and Shiraz made at a commercial winery

BACKGROUND

- **'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 colonises areas of the vine where 'honeydew' has been excreted by sap-sucking insects such as scale and mealybug.
- **Sooty mould is important** because it results in fruit being downgraded or rejected.



METHOD

- Batches of sooty mould-affected and unaffected Shiraz grapes were harvested from the same vines.
- Bunches containing defects other than sooty mould were discarded.
- The percentage of sooty mould in the affected fruit was measured.
- Both batches of fruit were crushed, and sooty mould-affected must was blended with unaffected must to achieve duplicate ferments including 5% and 25% sooty mould-affected fruit.
- Duplicate control ferments were conducted with unaffected fruit.



RESULTS - COMPOSITION

- As the proportion of sooty mould-affected grapes increased, sugar and consequently alcohol slightly decreased.
- Sap-sucking insects are known to reduce grape sugar.
- The ratio of free to total SO₂ also decreased slightly with increasing sooty mould.
- This implies that compounds associated with sooty mould can bind SO₂.

RESULTS - SENSORY EVALUATION

- Sensory difference 'triangle' testing was conducted in September 2017, and again in March 2019.
- On both occasions experienced and trained sensory panels could not distinguish between a wine made with the inclusion of 25% sooty mould-affected grapes and a control wine.
- The same result was obtained with Chardonnay and Shiraz wines made in one-tonne lots at a commercial winery.

RESULTS - PROCESSING

- There was up to 10% more lees in the wines made with the inclusion of 5% and 25% sooty mould-affected grapes



The lees were settled, centrifuged and weighed



The wine-lees interface

- The additional lees consisted of grape and 'yeast-derived' polysaccharides.
- This implies that sooty mould causes some breakdown of grape tissue.
- It is possible that the increased 'yeast-derived' polysaccharides were actually derived from the sooty mould itself.

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