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

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.

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