

The Quantitative Analysis of Monoterpenes in Australian Riesling Wines using Headspace Solid Phase Microextraction and GCMS

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Monoterpenes are important flavour components of Riesling wines [1,2] that have been used as a means of regional differentiation [3]. The technique of direct headspace solid phase microextraction (SPME) [4] in combination with gas chromatography/mass spectrometry (GCMS) has been used to quantify five characteristic monoterpenes (linalool, α -terpineol, citronellol, nerol and geraniol) in fourteen Australian Riesling wines and one French Riesling wine.

The optimum SPME extraction conditions were obtained with a 100 μm polydimethyl-siloxane (PDMS) fibre sampling the headspace at 40°C for 30 minutes. To assist with the extraction, NaCl was added to the analytical samples at a concentration of 20% and constant magnetic stirring employed. By using 1-octanol as an internal standard, it was possible to reliably detect monoterpenes at concentrations down to 1 ppb using full scan GCMS.

Linalool and α -terpineol were the dominant monoterpenes in each of the headspace samples, but none of the wines showed the presence of all five monoterpenes. Although significant differences were observed for the fifteen monoterpene profiles, these do not appear to correlate directly with the particular grape growing areas. However, this may be the result of grapes from different regions being used by the winemaker. Contrary to previous studies [1], the *Botrytis* affected Riesling wine examined here had elevated levels of both linalool and α -terpineol.

References:

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