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Czech J. Food Sci.

**G. J. Pickering, A.
Blake, Y Kotseridis:**

Effect of Closure, Packaging and Storage Conditions on Impact Odorants of Wine

Czech J. Food Sci., 27 (2009): S62-S65

3-alkyl-2-methoxypyrazines (MPs) represent an important and potent class of odor-active compounds associated with wine quality. 30 ng/l each of 3-isobutyl-2-methoxypyrazine, 3-isopropyl-2-methoxypyrazine and 3-secbutyl-2-methoxypyrazine were added to a Riesling and Cabernet Franc wine and monitored with HS-SPME-GC-MS over 18 months to investigate the effects of various closure and packaging options as well as light and storage temperature on MPs. Other impact odorants were monitored using SPE-GC-FID. Changes in MP concentrations during bottle aging varied with closure/packaging option, with the greatest decrease evident in Tetrapak® cartons. We observed similar changes in other impact odorants to previous studies, with synthetic corks displaying an increased capacity for sorption compared to natural corks and

screwcaps. MPs did not vary consistently over time with light or temperature conditions. Acetate esters decreased, regardless of light or temperature conditions, while phenethyl acetate and isoamyl acetate decreased at a greater rate in ambient temperature conditions compared with 12° C. Free and bound SO₂ retention was higher in light-excluded conditions and influenced by bottle hue.

Keywords:

methoxypyrazines; packaging; wine closures; Tetrapak; ladybug taint; *Harmonia axyridis* aging; bottle hue; storage temperature; cellaring; wine quality; wine flavour

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