

Anthocyanin composition in aged Chilean Cabernet Sauvignon red wines

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Anthocyanins in aged Cabernet Sauvignon red wines were studied by HPLC-MS. The major anthocyanin in 6, 7, and 8 year old red wine extracts was the dimer vitisin A produced by condensation of malvidin-3-O-glucoside mediated by pyruvic acid. In aged wine, the content of malvidin-3-O-glucoside decreased with age with a concomitant increase of vitisin A. The latter is accompanied by several condensation products with molecular weight up to 1500 m/z. Differential pulse voltammetry indicated that aged wines have lower antioxidant capacity than young wine (400 mV), but higher than malvidin-3-O-glucoside (483 mV). Tafel's plots showed that the electrochemical process occurring in aged wines is different from young wines. Six, seven and eight year old wines show similar behaviour with plots of 234, 177 and 188 mV/dec, respectively. These values are higher than the expected 120 mV/dec corresponding to a first electronic transfer but smaller compared to the 523 mV/dec corresponding to young wine.