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Czech J. Food Sci.

**Stratil P., Kubáň V.,
Fojtová J.:**

Comparison of the phenolic content and total antioxidant activity in wines as determined by spectrophotometric methods

Czech J. Food Sci., 26 (2008): 242-253

Folin-Ciocalteu reagent (FCM) and Price and Butler method (PBM) were used for spectrophotometric determination of the total content of phenolic compounds in 2 wines (8 white, 21 red). The average contents of phenolic compounds determined by FCM and PBM were 108 (90– 119) and 105 (90– 129) for white wines, and 1545 (874– 2262) and 547 (306– 816) mg/l of gallic acid equivalent (GAE) for red wines, respectively. The reason for the lower PBM values in red wines is the higher reactivity in PBM of phenolic compounds, especially of gallic acid generally used as a standard in the above methods. The higher reactivity of the standard means that the measured

absorbance of the sample responds to a lower concentration. The average total antioxidant activities determined by TEAC (Trolox Equivalent Antioxidant Capacity), FRAP (Ferric Reducing Antioxidant Power), and DPPH (using diphenyl-*p*-picrylhydrazyl radical) were 5.14 (4.30–6.14), 1.43 (0.86–2.14), and 0.71 (0.61–0.81) of Trolox equivalents (TE) and 26.44 (13.9–34.4), 9.43 (4.92–13.9), and 5.52 (2.91–8.62) mmol/l TE for white and red wines, respectively. Almost the same molar absorptivities with TEAC and DPPH methods were found while with FRAP method it was somewhat higher (about 1.56-times). The ratio of the values determined by FRAP and DPPH methods for white and red wines were 2.0 and 1.7, respectively. The TEAC values