Analysis Of Heavy Metal Contents Of Wines From Turkey

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Wine is a widely consumed beverage in the world and has an obvious commercial value and social importance. Therefore, the evaluation of the quality of wine is important for manufacturers, merchants and consumers [1]. The composition of wine is influenced by many factors related to the specific production area: grape varieties, soil and climate, and viticultural practices. Daily consumption of wine in moderate quantities contributes significantly to the requirements of the human organism for essential elements such as K, Ca, Mg, Cr, Co, Fe, F, I, Cu, Mn, Mo, Ni, Se, Zn. On the other hand, several metals, such as Pb, Cd and As, are known to be potentially toxic.

In this study, ten samples of white wine and ten samples of red wine available in the supermarket (from Turkey) were analyzed for the metals Ca, Cr, Mn, Sn, Zn, Cu, Fe, Ni, Mg, Al, Co, Hg, Pb, Cd by inductively coupled plasma optical emission spectrometry (ICP-OES) and hydride generation combined with inductively coupled plasma optical emission spectrometry. A microwave furnace was used for the digestion and dissolution of the experimental wines. The levels compare well with those reported for similar wine from some other parts of the world. The concentrations for all the elements that were almost in all cases, well below the maximum permissible levels by the Greek and the European Union legislation.

References