ID:14994 | MONITORING TRACE ELEMENT AND HEAVY METAL CONCENTRATIONS IN COMMON HERBS AND SUPERFOODS AVAILABLE IN GREEK MARKET

Tatiana Choleva, Vasiliki Gouma, Athanasios Vlessidis, Dimosthenis Giokas

Department of Chemistry, University of Ioannina, Ioannina, Greece

The levels of heavy metals and trace elements in widely consumed products were determined in order to assess their nutritional value and safety. INTRODUCTION. Food is the major source of trace elements which are necessary to the human body. However, heavy metals may be also present as a result of anthropogenic activities. Therefore, monitoring and evaluation of trace elements and heavy metals is an important aspect of food safety and quality. METHODS. Extraction of metals was performed with microwave assisted digestion and their determination was accomplished by ICP-OES and AAS. RESULTS. Six herb species (parsley, dill, spearmint, oregano, thyme and rosemary) and five superfood products consisting of three grapes (Aronia, Cranberries, Date) and two bee products (pollen and propolis) available in local market from various suppliers were evaluated for their content in nutritional elements such as Fe, Cu, Mg and Se as well as for their potential contamination from heavy metals such as Pb, Zn, Cd, Ni, Co and Cr. The measured concentrations were evaluated in relation to literature and the contamination factor and pollution load index were calculated in relation to the standards of FAO/WHO and EU. Statistical treatment of data was performed to unravel potential interactions among metal ions and differentiate between natural or anthropogenic sources. CONCLUSIONS. The results suggest that herbs, grapes and bee products available in retail suppliers meet the international nutritional and safety standards, but some violations were

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