



DETERMINATION OF SOME TRACE METAL CONCENTRATIONS IN IMPORTED FRUITS BY F-AAS AND ICP-MS

Alina Soceanu

*Ovidius University of Constanta, Department of Chemistry, 124 Mamaia Blvd., 900527 Constanta, Romania
e-mail: asoceanu@univ-ovidius.ro*

Abstract

Contaminated food is for most people the main source of exposure to toxic elements. Therefore it is very important to recognize the risks to human health and take appropriate measures as early as possible. The goal of this study was to investigate the level of some trace metals (Cd, Cu, Zn, Mn) in imported fruits (bananas, kiwi and mandarins). The concentrations of these elements in fruit samples were measured by atomic absorption spectrometry and inductively coupled plasma mass spectrometry. The differences for Zn, Cu and Mn by both methods were not that pronounced as for Cd especially for skin of mandarin. It is probable due to the spectral interferences which might have led to overestimation of Cd by flame AAS. Student's t-test was employed to estimate the significance of values obtained. The estimated provisional tolerable weekly intake (PTWI) of copper and zinc are far below the established PTWI for Cu and Zn per week for 70 kg person while some determined cadmium concentrations may result in exceeding the admissible cadmium PTWI.

Key words: Cd, Cu, fruits, F-AAS, ICP-MS, Mn, Zn

Received: March, 2010; Revised final: July, 2010; Accepted: August, 2010
