

Documents

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Levels of selected heavy metals in black tea varieties consumed in Saudi Arabia

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Abstract

The metal contents (Fe, Cu, Zn, Mn, Cr, Pb, Ni, Cd, Co) of 17 black tea samples were analyzed by using Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES). Among the investigated metals Mn was the highest (1,071.7 µg/g), whereas Pb showed minimum levels (0.30 µg/g). Iron was the second highest element found in black tea samples. Lowest Pb concentration (0.30 µg/g) was found in Abu Jabal tea; whereas maximum (2.2 µg/g) was found in Manasul tea. Lowest Cd concentration was found in Lipton whereas maximum level was observed for Al-Diafa tea. The concentrations of Co and Zn in the analyzed samples were in the range of 4.5-17.4 and 23.7-122.4 µg/g, respectively. Metal-to-metal correlation studies showed strong correlations between iron-chromium, iron-cadmium and lead-copper pairs. The data obtained in the present work compared well with the counterpart data reported internationally. Based upon the present safety standards, the tea versions selected in the present study were found to be safe for human consumption. © 2008 Springer Science+Business Media, LLC.

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