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Heavy metals content of selected key foods of Bangladesh

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Heavy metals composition of foods is of immense interest because of its essential and/or potentially toxic nature. This study estimates concentrations of common heavy metals from nationally representative composite samples of twenty Bangladeshi key foods using ICPMS followed by microwave digestion. The results showed that the concentrations of toxic metals estimated ranged from 0.008 to 2.53 , 0.006 to 34.22, 0.06 to 20.61 µg/100g of edible portion (EP) on fresh weight basis for Cd, As and Pb, respectively. Among the key foods, the highest level of Cd was detected in brinjal while that of As and Pb in tilapia fish and mango, respectively. The content of potentially toxic heavy metals per 100g of EP on fresh weight basis ranged from 1.01 (carrot) to 40.77 (wheat flour), 8.92 (milk) to 910.63 (lentil), 7.37 (banana) to 52.6 (pangas fish), 0.22 (pangas fish) to 108.13 (lentil), 0.16 (banana) to 14.54 (bean), 11.44 (pangas fish) to 2782.71 (wheat flour), 0.18 (chicken breast) to 90.70 (lentil), 0.012 (egg) to 0.52 (rice), 0.67 (pangas fish) to 394.85 (wheat flour), and 0.001 (chicken leg) to 2.53 µg (brinjal) of Se, Cu, Cr, Mo, V, Mn, Ni, Sb, Ba and Ag, respectively and 0.035 (carrot) to 4.79 (lentil) and 0.203 (banana) to 9.948 mg (wheat flour) of Zn and Fe, respectively. The study of heavy metals content is likely to be useful to the researchers, clinicians, epidemiologists and so on for assessing the associated health risks attributable to chronic dietary exposure through the key foods.

Biography

Nazma Shaheen, Ph.D., Professor of Institute of Nutrition and Food Science (INFS), University of Dhaka is a prominent Scientist in the field of Food Science and Nutrition. She did her post-doctoral research as United Nations University (UNU) fellow at National Food Research Institute (NFRI), Tsukuba, Japan. She attended the advanced international training program on Global Nutrition (Upsala University, Sweden), and Second Asian Graduate Course in the production and use of Food Composition data in Nutrition (NIN, India). Currently, she is working as Focal Person of Bangladesh for "SAARCFOODS" and as PI in updating Food Composition Table (FCT) for Bangladesh.