Levels of selected metals in canned fish consumed in Kingdom of Saudi Arabia. Ashraf, Waqar; Seddigi, Zaki; Abulkibash, Abdallah; Khalid, Mazen. King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia. Environmental Monitoring and Assessment (2006), 117(1-3), 271-279. Publisher: Springer, CODEN: EMASDH ISSN: 0167-6369. Journal written in English. CAN 146:228007 AN 2006:839397 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

In the present paper, seven heavy metals (Pb, Cd, Ni, Cu, Zn, Cr and Fe) in canned salmon, sardine and tuna fish were detd. by using at. absorption spectroscopy. Cadmium and lead levels were detd. by graphite tube AAS whereas Ni, Cu, Cr and Fe were detd. by flame AAS. Anal. results were validated by spiking the samples with various concns. of these metals for recovery. The metal contents, expressed in μg/g, wet wt., varied depending upon the specie studied. The levels of Pb ranged from 0.03-1.20 μg-g-1 with an av. of 0.313 μg-g-1 for salmon; 0.03-0.51 μg-g-1 with an av. of 0.233 μg-g-1 for tuna and 0.13-1.97 μg-g-1 with an av. of 0.835 μg-g-1 for sardines. The levels of Cd ranged from 0.02-0.38 μg-g-1 with an av. of 0.161 μg-g-1 for salmon; 0.07-0.64 μg-g-1 with an av. of 0.227 μg-g-1 for tuna and 0.010-0.690 μg-g-1 with an av. of 0.183 μg-g-1 for sardines. Comparative evaluation of these metals in three varieties of fish showed that av. concn. of lead in sardines is about 4 times and Ni about 3 times higher as compared to tuna. Generally, the levels of these metals follow the order sardine > salmon > tuna. The data generated in the present study compared well with the similar studies carried out in different parts of the world. The results indicate that canned fish, in general and tuna in particular, have concns. within permissible limits of WHO/FAO levels for these heavy metals. Therefore, their contribution to the total body burden of these metals can be considered as negligibly small.