

Assessment of concentrations of toxic elements in aquaculture food products in Malaysia

Abstract

Thirteen species of aquaculture food products, including fresh water and marine fish, prawns, and seaweed were collected from 37 aquaculture farms in Malaysia. Muscle and liver specimens from these species were tested for the presence of As, Cd, Cr, Cu, Hg, Pb, and Zn by using a heat vaporisation atomic absorption spectrophotometer and an inductively coupled plasma atomic emission spectrophotometer. Sea bass from each collected site were comparatively studied, where As concentrations were assumed to be caused by different culture system; and, Hg and Pb concentration were assumed to be due to anthropogenic activities in specific sites. The calculated estimated intake values of Malaysians for total As, Cd, Cr, Cu, Hg, Pb, and Zn in the muscle of the examined species were 3.713, 0.115, 0.113, 4.268, 0.211, 0.738 and 15.863 $\mu\text{g}/\text{kg}$ b.w./day. None of the values exceeded the JECFA guideline values and would pose no health hazards for consumers.