

Heavy metal testing ensures better supplement safety

Iftekhhar Ahmed Mohammed

Dubai Central Laboratory, UAE

Heavy metals contamination in aquatic ecosystems create great problems especially in developing countries through the waste materials coming from rivers, industry, intensive farming pollute the coastal aquatic environment. Especially seafood is of major concern because of the bioaccumulation and biomagnifications of metal contaminants. The contaminated fish may become a public health concern particularly excessive intake of heavy metals may lead to a decline in mental, cognitive and physical health. Their detection in fish is an indicator of marine pollution. In order to assess the levels and impact of different trace metals on human health, a study was carried out with more than 2500 fish and seafood samples which were collected from different locations within and outside the UAE during the year 2017-2018. The edible portions of fish were analyzed for total arsenic, cadmium, lead and mercury by ICP-MS after pressure digestion with concentrated nitric acid. The mean contents of heavy metals expressed in ug/kg of wet weight. The average concentrations of heavy metals in this study obtained were below regulations set by the European Union except for cadmium in frozen seafood cocktail, frozen squid, frozen mussels, dried anchovies, frozen crabs and lobsters were above the maximum limits set up by the European Union. Lead content found to be more in cephalopods, dried anchovies, dried sardines followed by frozen seafood cocktail and chilled mussels. Highest Hg levels were found in frozen fish (shark meat) followed by cod fish and some frozen fish fillets. Total arsenic content was found in all categories of seafood namely, crabs, lobsters, cod fish, dried shrimps, frozen langoustine nad frozen octopus. However, total arsenic has no regulatory limits set up by the European Union legislation to assess the risk. Further studies are needed to assess the risk associated with different forms of arsenic particularly inorganic arsenic by arsenic speciation studies using LC-ICP-MS technique.

Biography

Iftekhhar Ahmed Mohammed is a Principle Food Chemical Analyst, at Dubai Central Laboratory, Dubai, UAE. Having more than 14 years of experience in the Food chemical analysis and testing. Completed Master's degree in Agriculture with specialization in Soil science and Agriculture Chemistry from Acharya N.G Ranga Agriculture University, Hyderabad, during the year 2004. Worked in different positions in different institutes from the year 2004 until today. Presently working as a Principle Food Chemical Analyst at Dubai Central Laboratory, Dubai Municipality from Feb-2011 to till date. Worked as a Soil & Water Analyst with Ministry of Environment and water from December 2010 until January 2011. Worked as an Agriculture Engineer in Central laboratories, Al-Ain with Ministry of Environment and Water from March 2008 to till December 2010. Worked as a Soil Scientist with GRM International Australian Company in the project Soil Survey for the emirate of Abu Dhabi from July-2006 to March 2008. Worked as a Research Assistant at United Arab Emirates University from May- 2005 to July 2006. Participated in more than 10 posters at different international conferences. Main area of research interest is Food and Agriculture.