Analysis of Lead and Cadmium in Sea Fish in Sri Lanka

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ABSTRACT

Heavy metal contamination is a major concern in marine pollution. Since these metallic elements do not disappear rapidly in the marine environment, this further impairs the aquatic ecosystems due to the relatively high toxicity even at low concentrations. These metals enter the environment by different ways like industrial activities etc. These toxic elemental contaminants cause unhealthy effects to the fish and are transferred into human metabolism through consumption of contaminated fish that leads to serious deterioration of human health.

In this study, muscles of four commercially important fish species in Sri Lanka (Skipjack tuna, Yellow fin tuna, Sail fish and Seer fish) were analyzed for lead and cadmium. For this purpose, thirty two fish samples were purchased from the fish outlets from four locations (Negombo, Modara, Beruwala and Galle) of the west coast area of Sri Lanka.

The dry ashing method was used to digest the samples and further analyses were carried out using an atomic absorption spectrometer. Results showed that cadmium content in almost all the samples was negligible. But the lead content in the fish muscles from most samples was beyond the permissible levels recommended by the Food and Agriculture Organization (FAO 1983).

This is a preliminary study to investigate the concentration of lead and cadmium in sea fish available along the west coast of Sri Lanka. Because of the limited nature of the study, it is not possible to draw a final conclusion on the heavy metal concentration in sea fish. Further studies are needed, especially with regard to lead concentrations.