Metals in Nile perch (Lates niloticus) and suspended particulate matter from Lake Victoria, Tanzania.

By

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Abstract

A study was conducted to assess the levels of pollutant metals in suspended particulate matter and Nile perch from Lake Victoria. The metals in particulate matter were determined to ascertain their concentrations at the base of the food chain. Nile perch samples were collected in September 2003 from five major fish processing factories at the shores of Lake Victoria in Mwanza and Musoma. The concentrations of total Hg, Pb, Cd, and Cu were generally low in particulate matter and in most locations were close to or below their limits of detection. The concentrations of Zn were high in suspended particulate matter, the highest being 219.4 +/- 153.0 microg L(-1) found in particulate matter from Nungwe Bay in the southern part of Lake Victoria. Nile perch generally contained low levels of heavy metals; the range for Pb was <0.01-0.08 microg g(-1) ww, Cd was <0.001-0.04 microg g(-1) ww, Cu was 0.01-0.97 microg g(-1) ww, and Zn was <0.01-18.94 microg g(-1) ww. The concentration of total mercury ranged between 31.0 and 684.2 ng g(-1) ww; generally, it was below the Food and Agriculture Organization of the United Nations/World Health Organization (1000 ng total Hg g(-1) ww for piscivorous fish species) maximum allowable level. Indeed, all Nile perch samples that weighed less than 10 kg had less than 200 ng total Hg g(-1) ww and therefore are safe for regular consumption by at-risk groups such as children and pregnant women. Levels of mercury and other heavy metals in Nile perch at present is, therefore, not a severe environmental issue; however, urgent regulatory measures should be taken to minimize metal input into the lake to maintain the current levels in the fish.

Keywords

Metals in Nile; Lake Victoria; Tanzania