

Mercury (Hg) Concentration in Fish Marketed in the São Luís Fish Market (MA) and Potential Exposure of Consumers

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Abstract : Fish is a food source well recognized for its health benefits. However, the consumption of fish, especially carnivorous species, is the main path of human exposure to Hg, a widely distributed pollutant on the planet and that accumulates along food chains. Studies on the impacts on public health by fish intake show existing toxic risks even when at low concentrations. This study quantifies, for the first time, the concentrations of Hg in muscle tissue of the nine most commercialized fish species in the fish market of São Luís (MA) in north Brazil and estimates the consequent human exposure through consumption. Concentrations varied according to trophic level, with the highest found in the larger carnivorous species; the Yellow hake (*Cynoscion acoupa*) (296.4 ± 241.2 ng/g w.w) and the Atlantic croaker (*Micropogonias undulatus*) (262.8 ± 89.1 ng/g w.w.), whereas the lowest concentrations were recorded in iliofagous Mulletts (*Mugil curema*) (20.5 ± 9.6 ng/g w.w.). Significant correlations were observed between Hg concentrations and individual length in only two species: the Flaming catfish (*Bagre marinus*) and the Atlantic bumper (*Chloroscombrus crysurus*). Given the relatively uniform size of individuals of the other species and/or the small number of samples, this relationship was not found for the other species. The estimated risk coefficients, despite the relatively low concentrations of Hg, suggest that yellow hake and Whitemouth croaker (*Micropogonias furnieri*), fish most consumed by the local population, present some risk to human health (> 1) HQ and THQ, depending on the frequency of their consumption.

Keywords : contamination, fish, human exposure, risk assessment

Conference Title : ICHMEE 2023 : International Conference on Heavy Metals in the Environment and Ecosystems

Conference Location : Rome, Italy

Conference Dates : August 24-25, 2023