

Mercury Concentration of Muscle Tissue and Relationship with Size of Yellowfin Tuna, *Thunnus albacares*, of the Indian Ocean

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Abstract: Mercury (Hg) is a naturally occurring metal in the earth's crust and can enter the aquatic environment through natural and anthropogenic activities. Part of Hg is converted to methyl-mercury (MeHg) and accumulates in fish through the food chain reaching its highest levels in large predatory fish such as tuna. Consumption of contaminated fish has been considered a serious public health concern. Yellow fin tuna (*Thunnus albacares*, YFT) comprises the most important component of the Indian Ocean tuna catches and it can contain significant levels of MeHg. For better understanding and monitoring purpose of Hg levels in YFT populations, total Hg (T-Hg) concentrations were analyzed in edible muscle tissue from 140 YFT collected from major fish landing sites of Sri Lanka in 2010 and 2011. The samples were analyzed using cold vapour atomic absorption spectrophotometric method, with microwave assisted digestion. In Sri Lankan waters, Hg levels in YFT ranged from <LOD (0.021) to 0.98 mg/kg (mean \pm SD = 0.30 \pm 0.18 mg/kg; median = 0.27 mg/kg) in wet weight basis. Data from the present study suggest that Sri Lankan YFT contain lower levels of Hg compared with the EU/EC recommendations (1 mg/kg). T-Hg levels of YFT were positively related with fish length and weight.

Keywords: Total mercury, Yellowfin tuna, Indian Ocean, Sri Lanka
