

Radioactivity of three common and most commercially important fishes of the Bay of Bengal

C. K. Hasan^{1*}, M. Zafar¹, M. I. Chowdhury² and M. Kamal²

¹*Institute of Marine Sciences and Fisheries, University of Chittagong, Chittagong 4331, Bangladesh.*

²*Radioactivity Testing and Monitoring Laboratory, Bangladesh Atomic Energy Commission, Chittagong, Bangladesh.*

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Abstract

The radionuclides (²²⁶Ra, ²³²Th, ²²⁸Th, ⁴⁰K and ¹³⁷Cs) concentrations of three fishes (*Tenualosa ilisha*, *Johnius argentatus*, and *Pampus argenteus*) of the Bay of Bengal were determined for different samples during September 2005. The highest activity of ²²⁶Ra was found in *P. argenteus* (1.31 ± 0.35 Bq.kg⁻¹) on dry weight basis (dw), and the lowest activity was occupied by *J. argentatus* (0.57 ± 0.29 Bq.kg⁻¹.dw). *T. ilisha* concentrated the highest amount of ²³²Th (1.14 ± 0.20 Bq.kg⁻¹.dw), while *J. argentatus* deposited the lowest amount (0.40 ± 0.29 Bq.kg⁻¹.dw). The highest activity of ²²⁸Th was 0.72 ± 0.13 Bq.kg⁻¹.dw in *T. ilisha*, and the lowest activity was found 0.08 ± 0.02 Bq.kg⁻¹.dw in *J. argentatus*. *P. argenteus* (15.67 ± 1.99 Bq.kg⁻¹.dw) occupied the highest amount of ⁴⁰K, and the lowest amount was recorded from *J. argentatus* (5.43 ± 0.42 Bq.kg⁻¹.dw). The activity of anthropogenic radionuclide ¹³⁷Cs was below detection limit. It was observed that the maximum contribution of radioactivity came from ⁴⁰K (*T. ilisha* 78%, *J. argentatus* 84% and *P. argenteus* 83%). The present study clearly indicates that radionuclide concentration was found below the world's standard (1000 Bq/kg for ¹³⁷Cs set by IAEA) and Bangladesh standard (50 Bq/kg for ¹³⁷Cs, set by Bangladesh Atomic Energy Commission). Therefore, natural and artificial radionuclides present in marine fishes of the Bay of Bengal were innocuous for human health.

Correspondence : kamrul@imscu.ac.bd