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# DETERMINATION OF POLONIUM-210 LEVELS IN THREE DIFFERENT SPECIES OF CATFISH FROM IKOLI CREEK, BAYELSA STATE, NIGERIA

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This study investigated the level of polonium-210 in various parts of three species of cat fish *Chrysichthys nigrodigitatus* (marine catfish), *Clarias gariepinus* (African catfish) and *Schilbe mystus* (silver catfish). The fishes were obtained from Ikoli creek, Bayelsa state. One gram of the gills, bones, muscles, and gut content were subjected to polonium-210 radiochemistry using Po-209 as a yield tracer. The polonium-210 level in the *Chrysichthys nigrodigitatus* bone ( $6.30 \pm 0.76$  Bq/Kg), gills ( $12.27 \pm 0.32$  Bq/Kg), muscles ( $12.27 \pm 0.43$  Bq/Kg) and gut content ( $10.48 \pm 0.76$  Bq/Kg). In *Clarias gariepinus*, the Po-210 levels for bone ( $9.70 \pm 0.21$  Bq/Kg), gills ( $10.16 \pm 0.19$  Bq/Kg), muscles ( $10.16 \pm 0.70$  Bq/Kg) and gut content ( $10.25 \pm 0.74$  Bq/Kg). In *Schilbe mystus*, the Po-210 levels for bone ( $17.02 \pm 0.68$  Bq/Kg), gills ( $10.16 \pm 0.75$  Bq/Kg), muscles ( $16.40 \pm 0.80$  Bq/Kg) and gut content ( $8.82 \pm 0.88$  Bq/Kg). The total polonium-210 activity was highest in i.e. 58.62 Bq/kg, followed by *Chrysichthys nigrodigitatus* (41.31 Bq/kg) and *Clarias gariepinus* (40.27 Bq/kg). The effective dose delivered to an adult consumer of the species of catfish studied was all below 1 mSv/yr for a 25 kg consumption rate per annum for an adult in the region. Polonium-210 can be fatal when it gets into the food chain. It is extremely toxic and can disrupt cell structures and functions, causing cell death even at milligram levels in seafood. Although, the toxicity levels of Po-210 in Ikoli Creek fishes show that consumers have low risk of cancer from Po-210, regular monitoring is advocated to detect any anthropogenic input due to oil and gas activities around the study area.

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