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Petroleum hydrocarbons and limiting nutrients in *Macura reptantia*, *Procambarus clarkii* and benthic sediment from Qua Iboe Estuary, Nigeria

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Abstract

The levels of total petroleum hydrocarbons in two commonly consumed benthopelagic shellfishes, *Macura reptantia* and *Procambarus clarkii*, harvested from benthic sediment of Qua Iboe Estuary were determined using a gas chromatography with flame-ionization detector. Seventy-two (72) samples each of benthic sediment and the shellfishes were collected monthly between June 2003 and February 2004 covering the peak periods of the wet and dry seasons. Concentrations of hydrocarbons were highly variable and ranged between 5.00 and 232.00 µg/g dry weight of benthic sediment, 3.05 and 11.30 µg/g dry weight of *M. reptantia*, 1.62 and 9.00 µg/g dry weight of *P. clarkii*. Pearson's correlation analysis of total hydrocarbon concentrations in subtidal sediments with levels in the fauna species yielded positive significant ($P < 0.05$) correlations in *M. reptantia* ($r = 0.737$) and *P. clarkii* ($r = 0.924$). This is indicative of a long term and chronic accumulation of hydrocarbons in the estuarine ecosystem, reflecting the potential for exposure of the resident biota and the risk to human health.

Keywords

Petroleum hydrocarbons Shellfishes Sediment Estuary Nigeria

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