

Persistent Organochlorine Pesticides (POPs) in Water, Sediment, Fin Fishes (*Schilbes mystus* and *Hemichromis fasciatus*) from River Ogun, Lagos, Nigeria

Authors : Edwin O. Clarke, Akintade O. Adeboyejo

Abstract : Intensive use of pesticides resulted in dispersal of pollutants throughout the globe. This study was carried out to investigate persistent Organochlorine pesticides (POPs) in water, sediment and fin fishes, *Schilbes mystus* and *Hemichromis fasciatus* from two different sampling stations along River Ogun between the month of June 2012 and January 2013. The Organochlorine pesticides analyzed include DDT (pp'1,1,1-trichloro-2,2-bis-(4-chlorophenyl) ethane), DDD, DDE (pp1,1-dichloro-2, 2-bis-(4-chlorophenyl) ethylene, HCH (gamma 1,2,3,4,5,6-hexachlorocyclohexane, HCB hexachlorobenzene), Dieldrin (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a octahydro- 1,4,5,8 dimethanonaphthalene). The analysis was done using Gas Chromatograph with Electron Capture Detector. In water sample, the result showed that PPDDT, Endrin aldehyde, Endrin ketone concentrations were high in both stations. The mean value of Organochlorine analyzed in water range from Beta BHC ($0.50 \pm 0.10 \mu\text{g/l}$) to PP DDT ($162.86 \pm 0.21 \mu\text{g/l}$) in Kara sample station and Beta BHC ($0.20 \pm 0.07 \mu\text{g/l}$) to Endrin Aldehyde ($76.47 \pm 0.02 \mu\text{g/l}$) in Odo-Ogun sample station. The levels of POPs obtained in sediments ranged from $0.40 \pm 0.23 \mu\text{g/g}$ (Beta BHC) to $259.90 \pm 1.00 \mu\text{g/kg}$ (Endosulfan sulfate) in Kara sample station and $0.64 \pm 0.00 \mu\text{g/g}$ (Beta BHC) to $379.77 \pm 0.15 \mu\text{g/g}$ (Endosulfan sulfate) in Odo-Ogun sample station. The levels of POPs obtained in fin fish samples ranged from $0.29 \pm 0.00 \mu\text{g/g}$ (Delta BHC) to $197.87 \pm 0.31 \mu\text{g/g}$ (PP DDT) in Kara sample station and in Odo-Ogun sample station the mean value for fish samples range from $0.29 \pm 0.00 \mu\text{g/g}$ (Delta BHC) to $197.87 \pm 0.32 \mu\text{g/g}$ (PP DDT). The study showed that the accumulation of POPs affect the environment and reduce water quality. The results showed that the concentrations were found to exceed the maximum acceptable concentration of $0.10 \mu\text{g/l}$ value set by the European Union for the protection of freshwater aquatic life and this can be hazardous if the trend is not checked.

Keywords : hazardous, persistent, pesticides, biomes

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