

Study of Organochlorinated Pesticides, Their Residues and PCB Concentrations in Sediment Samples of Patoku Lagoon[#]

Aurel Nuro*, Elda Marku, Bledar Murtaj, Sidita Mance

Tirana University, Faculty of Natural Sciences, Chemistry Department, Tirana, Albania

Received May 24, 2014; Accepted June 06, 2014

Abstract: In this paper are presented concentrations of organochlorinated pesticides and polychlorinated biphenyls in sediment samples of Patoku Lagoon. Fifteen sediment samples were taken in different stations of lagoon using Van Veen grab standard sampler. Sediment samplings were done in October 2013. Ultrasonic extraction was used for extracting pesticide residues from fraction sediment samples of Patoku Lagoon. Hexane/Dichloromethane (3:1) mixture used as extracting solvent. Clean-up procedure was performed using firstly metallic mercury followed a second clean-up procedure in an "open" florisil column. The organochlorine pesticides detected were HCHs (a-, b-, γ - and d-isomers) and the DDT-related chemicals (o,p-DDE, p,p-DDE, p,p-DDD, p,p-DDT), hexachlorobenzene (HCB), Heptachlor, Heptachlorepoxyde, Aldrine, Dieldrine, Endrine, Methoxychlor and Mirex. Seven PCB markers were analyzed for evaluation of PCB concentrations in sediment samples. Analyses were done with capillary column Rtx-5, 30 m long, 0.32 mm internal diameter, 0.25 μ m film thicknesses on a gas chromatograph HP 6890 Series Plus, with μ ECD detector. For all sediment samples were found concentrations in higher levels for pesticide residues and their metabolites and volatile PCB markers. These data could be because use of pesticides in adjacent agricultural areas near Patoku Lagoon. Impact of atmospheric factors in pollution of many ecosystems in Albania is another important factor.

Keywords: *Organochlorine pesticides; PCBs; Sediment analyze; Patoku Lagoon; Gas Chromatography*

*Corresponding: E-Mail: aurel.nuro@fshn.edu.al; Tel: ++355 684056176; Fax: ++355 4231120

[#] This paper has been presented at ICE'2014 Tiran, Albania