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Determination of organochlorines pesticides residue in water from the Blue lagoon (Merja Zerga –Morocco)

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**Abstract:**

The objective of this study is to investigate the organochlorines pesticides (OCP) in groundwater (Gw) and surface water (Sw) of upstream of the Blue lagoon (Merja Zerga). Twenty samples of Gw and five of Sw were collected near Ramsar wetland and analyzed using liquid chromatography tandem mass spectrometry (LC-MS/MS). The study revealed the presence of 29% of organochlorines Pesticides (OCP) compounds in explored area. Comparisons between Sw and Gw samples suggested that HCB, Lindan, dieldrin, Aldrin, endosulfan, Heptachlor, DDD, DDE, and DDT was accumulated. Average concentrations were 8 µgL-1 and 10.2 µgL-1 in (Gw) and 11.63 µgL-1 (S5) Oued MDA with an average of 2.52ugl-1 and 58% of unauthorized organochlorines in both (Gw & Sw). DDT residues and its derivatives in the Gw are non-existent. We were able to detect them with high contents only at the S5 with (DDT = 1.76 μgL-1; DDD = 1.83 μgl-1; DDE = 1.62 μgL-1). The spatial dispersion of diffuse (OCP) has allowed us to notice that the wells and stations that have demonstrated the highest levels are those located in the south-eastern part of the area, characterized by the intensification of agriculture based mainly on market gardening and citrus fruits.

**Keywords:** Organochlorine; pesticides; Groundwater; surface water; health risk assessment, Morocco.