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The concentration of some organochlorine pesticides in the surface sediments of the Shatt Al-Arab River

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Abstract

Thirteen organochlorine compounds have been identified in the surface sediments of six stations along the Shatt Al-Arab estuary for the period from Sep. 2020 – Mar. 2021 as organochlorine pesticides, namely DDD, DDE, Aldrine, Dieldrin, Heptachlor, Epoxyheptachlor, Endrine, Endrine ketone, Lindane, Methoxychlor, Endosulfan, Alpha-lindane, and Delta-lindane, using a gas chromatographic device connected to a GC- mass spectrometer equipped with an electronic hunting detector GC-ECD.

The highest total concentration of pesticides (41.54 µg/kg dry weight) was recorded in Al- Fao station, while the lowest total concentration of pesticides (21.61 µg/kg dry weight) was in the Al-dayer station. The percentage of organic matter TOC% in sediments and the texture of the sediments were also measured. positive correlation between TOC% and the total rate of pesticides in the six stations, and there is a correlation between the percentage of each silt and mud with the total rate of pesticides in sediments.

Keywords: Organochlorine, Pesticides, Surface Sediments, Shatt Al-Arab estuary.

1. Introduction

The Shatt Al-Arab River is of great economic importance as it forms part of the important border between Iraq and Iran, and it is Iraq's only passage to the Arabian Gulf. Shatt Al-Arab River is the most important source of fresh water and the vital artery of Basrah city (Al-Mahmoud, 2020). It considers of great economic importance, it

problems have increased in the twentieth century as a result of development and modern industrial technology. The increase in the world's population at high rates over a hundred years has led to an increase in the demand for food, water, clothing, and many other commodities, and these requirements are practiced great pressure and depletion of natural and environmental resources and