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Sources of Total Petroleum Hydrocarbons in Mussel of *Unio tigris* at Tigris River at Maysan Governorate in Iraq

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ABSTRACT

Total petroleum hydrocarbons pose vital environmental problems in the Tigris River. *Unio tigris* samples were collected from seven different sites of the Tigris River in Meysan Governorate during 2024. Total petroleum hydrocarbons concentrations were determined by using spectroflurometer technique. The highest level (12.116µg/g) was recorded at Al-Kumait region (St. 5), and this station had the highest concentration of total petroleum hydrocarbons, which is mainly due to the increased population density beside the station, leading to increased human activities and the introduction of various wastes, while the lowest level (3.050µg/g) was recorded at Ali Al-Garbi region (St. 7). Additionally, total fat content was determined, revealing a correlation between fat content and concentration of total petroleum hydrocarbons detected.

INTRODUCTION

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This research aimed to examine and track oil residues present in down section of the Tigris River at Meysan Governorate. To facilitate this investigation, seven specific sampling sites were designated along the river. These samples were subsequently analyzed using spectroflurometer techniques. The main goal of the study was to measure the concentration of total petroleum hydrocarbons in mussels, with mussels being employed as bioindicators for evaluating the pollution levels in the Tigris River. The findings of the study highlight potential risk factors related to petroleum products and include a biological hazard risk assessment concerning petroleum pollution in the river. Furthermore, the research provides recommendations aimed at managing and reducing the sources of this pollution (**Arjoon & Speight, 2020; Ahmad, 2022; Almutairi, 2022; Shi** *et al.*, **2024**).

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