Occurrence and Distribution of Polycyclic Aromatic Hydrocarbons in Aquatic Environment of Ismailia Canal, Egypt

Hossam S. Jahin[1], Al-Shimaa E. Nassar[1], Mohammed M. Yehya[1] and Ashraf F. Wasfi[2]

[1]Central Laboratory for Quality Monitoring, National Water Research Center, Egypt [2]Chemistry Department, Faculty of Science, Benha University, Egypt hossam_gahin@hotmail.com

Abstract: Persistent organic pollutants (POPs) such as polycyclic aromatic hydrocarbons (PAHs) are of great concern, due to their persistence, bioaccumulation and toxic effects. In this study, water samples were collected from nine catchment areas that represent the aquatic environment of Ismailia canal in Egypt. The distribution of 16 PAHs included in the US Environmental Protection Agency's (EPA) priority pollutant list was analyzed by gas chromatography/flame ionization detector (GC/FID). Total PAH concentrations ranged from 1822 to 13170 ng/L in summer samples, for autumn the concentrations were in the range 866 to 5217 ng/L, for spring the concentrations were in the range 697 to 5960 ng/L, and for winter concentrations ranged from 926 to 5217 ng/L. The PAH profiles were dominated by low molecular weight PAHs (two- and three-ring components) in all collected water samples. The origin of PAHs in all water samples in this study area may be from oil or other industrial contamination.

Keywords: Polycyclic Aromatic Hydrocarbons (PAHs), GC/FID, Ismailia canal, Egypt**.**