

KASINEE SUNWANICH : PETROLEUM HYDROCARBONS IN WATER, SEDIMENTS
AND GREEN MUSSEL (Perna viridis) FROM THE LOWER THA CHIN RIVER.
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Analysis of petroleum hydrocarbons in water samples (at 1 m depth), sediments collected from the lower Tha Chin River in March and August 1989, and green mussel (Perna viridis) collected from the mouth of Tha Chin River in August 1989 was performed by fluorescence spectroscopy (UVF) and gas chromatography (GC). The results of water sample analysis, by UVF method, showed average petroleum hydrocarbons were 2.53 ± 0.95 $\mu\text{g/l}$ chrysene equivalent in March and 1.61 ± 0.41 $\mu\text{g/l}$ in August 1989. Comparison of the concentrations in March and August 1989 showed to be statistically different at the significant level of 0.01. Sediment and green mussel samples were extracted with dichloromethane (twenty-four hour soxhlet extraction) then followed by silica gel column chromatography. The aliphatic and aromatic hydrocarbons fractionated from the column chromatography were determined by fused silica capillary column (SE-54) gas chromatographic analysis, using flame ionization detector. The results of sediment sample analyses showed n-alkane ranging C_{15} - C_{32} . Total aliphatics averaged 20.99 ± 7.85 and 15.39 ± 3.15 $\mu\text{g/g}$ dry weight for March and August respectively. The sediment samples contained Polycyclic Aromatic Hydrocarbon (PAH) ranging 2-6 rings. Concentrations of total PAH averaged 2.71 ± 0.52 $\mu\text{g/g}$ in March and 2.03 ± 0.46 $\mu\text{g/g}$ in August. Mussel samples contained total n-alkane (C_{15} - C_{26}) ranging 1.28 - 1.87 $\mu\text{g/g}$. PAH found included Naphthalene, Biphenyl, 2,6-Dimethylnaphthalene, Dibenzofuran, Fluoranthene, Pyrene and Chrysene, with individual PAH concentrations ranging 12.5-81.0 ng/g dry weight.