

SCREENING AND QUANTIFICATION OF OIL AND GREASE IN SELECTED HARBORS AND LAGOONS IN SRI LANKA

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The hydrocarbons have caused extensive damage on the local ecosystems since accumulation of pollutants in animals and plant tissues may cause progeny's death or mutation. Thus, the food uptake routes imply an accumulation of PAHs in the food chain, which attracted interest because humans are frequently the last part of the food chain. Dealing with these problems and adopting appropriate solutions need plenty of research and policy. The present study was carried out to quantify the contamination status of oil and grease in harbors (fishery and commercial) and lagoons in Sri Lanka. Triplicate water samples were collected from 20 sampling sites in different areas of the country for the present study. Quantification of oil and grease was done by using hexane gravimetric method. Recovery for oil and grease was recorded as 88%. The concentrations of oil and grease in fishery harbors were ranged between $5.87 \pm 0.15 \text{ mg L}^{-1}$ - $48.78 \pm 0.12 \text{ mg L}^{-1}$, whereas, in commercial harbors ranged from 3.21 ± 0.09 to $8.71 \pm 0.18 \text{ mg L}^{-1}$. In lagoons oil and grease were ranged from 2.21 ± 0.10 to $5.71 \pm 0.11 \text{ mg L}^{-1}$. Among selected locations, the highest concentration of oil and grease ($48.78 \pm 0.12 \text{ mg L}^{-1}$) was recorded in Galle fishery harbor. The contamination levels of oil and grease in most water samples have exceeded the maximum permissible level ($< 10.00 \text{ mg L}^{-1}$ - water) given by the World Health Organization (WHO) for aquatic environments. Therefore, the results of the present study provide information on environmental contamination status of oil and grease, which can be incorporated into environmental risk assessments of the particular contaminants in Sri Lanka as such studies are limited.

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