

LEVELS OF ANTHROPOGENIC HYDROCARBONS IN THE  
NEGOMBO AND CHILAW ESTUARIES AND THEIR EFFECTS ON THE  
SURVIVAL OF SOME ESTUARINE ORGANISMS

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Mulletts in the Negombo and Chilaw estuaries are unmarketable because of their kerosene like taint. In this study the levels on anthropogenic hydrocarbons in these estuaries and their effects on the survival of estuarine fish and crustaceans were assessed.

Hydrocarbons in surface water samples of two estuaries trapped in cotton wool and extracted with hexane. The mean concentrations of hydrocarbons in Chilaw and Negombo estuaries were 0.288 and 0.274 mg/l respectively. The concentrations were lowest in the centres and highest in the east banks and high oil concentrations showed during the dry season.

Survival tests were carried out in aerated glass tanks at salinity 15 ppt, pH 7.5-8.0, dissolved oxygen 8-9 mg/l and temperature 30°C. The LC<sub>50</sub>(24hr) in kerosene for Oreochromis mossambicus >Chanos chanos> Mugil kelaperti>Metapenaeus dobsoni. LC<sub>50</sub>(24hr) of M. dobsoni in engine oil >kerosene>diesel. The most sensitive M. dobsoni whose LC<sub>50</sub>(24hr) = 0.1154 g/l in diesel is about 48 times higher than the recorded highest hydrocarbons concentration. But both estuaries have passed the allowable concentration of 0.05 mg/l (Izmerov, 1982). Although immediate death of fish and prawns is very unlikely to happen. Cumulative long term effects at sublethal levels is expected.

References: Izmerov, N.F. 1982. Mineral oils. Scientific review of Soviet literature on toxicity and hazards of chemicals. IR PTC/UNEP.