#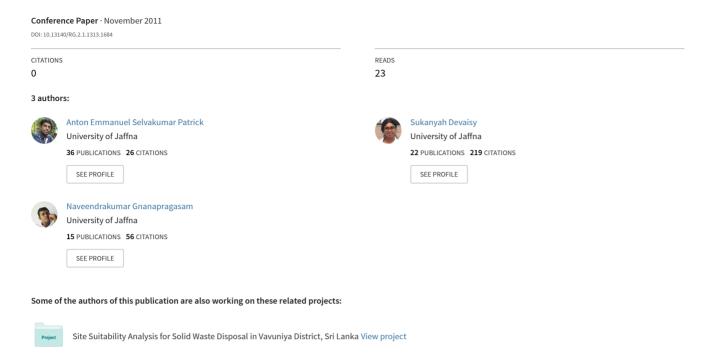 Preliminary Study of Learning Behavior of Poecilia Reticulata in the Vavuniya Town Tank Water Samples Subjected to Oil and Grease Pollution

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Preliminary Study of Learning Behavior of *Poecilia Reticulata* in the Vavuniya Town Tank Water Samples Subjected to Oil and Grease Pollution

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The Vavniya tank is subjected to oil and grease pollution (O&G). Kerosene like odour (KLO) was observed in the water samples during the peak discharge causing negative impact on the learning behaviour of fish which is important to learn new environment for their survival. The aim of this study is to seek the feasibilities of culturing the *Poecilia reticulata* in this tank, where water samples were collected for this study. After determining BOD, polluted (L_1) and non-polluted (L_2) locations were identified. Two phases of learning behavior as Demonstrator fish (DF) and follower fish (FF) has been analyzed statistically in both L_1 and L_2 water samples with control. There was a significant difference ($p \ll 0.05$) between the phases of learning behavior-DF and FF which is quantified in terms of time taken for the learning behavior exhibited by the test organism in L_1 and L_2 with control. The correlation between O&G vs. DF, FF in both L_1 and L_2 where the Pearson correlation (r) is 0.323, 0.154 and 0.519, 0.546 respectively. This indicates that the demonstrator and follower fish were distracted by the tank water quality collected in L_1 and L_2. Although the L_2 is less polluted location in Vavuniya tank, both water samples were turbid than the control. These phenomena strongly justifying the significant differences in the learning behavior between tank water sample and control. This caused by oil and grease pollution along with other factors reduce the sensory plasticity induced learning behavior. This study indicates the need for a broader approach to understanding the aquatic pollution in terms of oil and grease discharge along with other water quality parameters to culture *P.reticulata* for the ornamental fishery as a supplementary source of revenue.

Key words: Learning, *Poecilia reticulata*, Kerosene like odour, Sensory plasticity

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