



Metazoan Gill Parasites of *Etroplus suratensis* In Two Selected Lagoons in Southern Province of Sri Lanka: a Preliminary Study

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Abstract

Parasites are gaining increased attention as indicators of environmental status. The present study surveyed gill parasites of *Etroplus suratensis* from Dondra lagoon and Garanduwa lagoon (Matara District) to examine whether the parasite abundance and diversity show any association with the pollution status of their habitats determined by physicochemical parameters. Live *E. suratensis* were collected from Dondra (n=20) and Garanduwa (n=20) lagoons, from June to October 2022. One side of the gills of each fish was surveyed for metazoan parasites and enumerated. Replicate water samples (n=3) were collected from each lagoon to analyze temperature, pH, conductivity, dissolved oxygen (DO), biological oxygen demand (BOD), nitrate, orthophosphate, chemical oxygen demand, alkalinity, *E. coli* and total coliform. Correlations between parasite abundance, water quality parameters, and fish Fulton condition factor were obtained. DO and BOD were higher in the Garanduwa lagoon compared to the Dondra lagoon. The Dondra lagoon had significantly higher values compared to the Garanduwa lagoon for nitrates (1.457 ± 0.08 vs. 0.3379 ± 0.07 $\mu\text{g/L}$), soluble reactive phosphorus (4.33 ± 0.94 vs. 1.15 ± 0.10 $\mu\text{g/L}$), alkalinity (5.24 ± 0.10 vs. 3.14 ± 0.10 mol/dm^3), and coliform counts (range: 290 to >1100 CFU vs. 11 to 23 CFU) indicating that the former is more polluted. *Dactylogyrus* sp., *Argulus* sp., and *Ergasilus* sp. were found in both lagoons, but their abundance was significantly higher ($p < 0.05$, t-test) in the Dondra lagoon. Shannon diversity index and species evenness were apparently higher in Dondra lagoon (0.337 ± 0.053 and 0.462 ± 0.069) than the Garanduwa lagoon (0.274 ± 0.060 and 0.408 ± 0.77). In the Dondra lagoon, parasite abundance had a significantly positive correlation with nitrates, and a negative relationship with DO, but no relationships were significant for the Garanduwa lagoon. In both lagoons, the fish condition factor did not significantly correlate with parasite abundance. According to these results, *E. suratensis* is more susceptible to metazoan gill parasites in the Dondra lagoon than in the Garanduwa lagoon, and the susceptibility is likely to be associated with the pollution status of their habitats.

Keywords: *Banded Etroplus*, *Gill Parasites*, *Coastal Lagoons*, *Water Pollution*

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