

A PRELIMINARY INVESTIGATION ON THE PREDATORY POTENCY OF SELECTED NATIVE AND INTRODUCED FISH SPECIES OVER *Aedes* *aegypti* MOSQUITO LARVAE

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Biological control of *Aedes* mosquitoes has gained a wide attention as a successful vector control method for dengue. The present study investigated the predatory potency of selected freshwater fish species over *Ae. aegypti* larvae, in laboratory conditions. Adult fish specimens collected from aquaria or the wild were acclimatized in tanks with dimension of 60 × 30 × 35 cm, while colonies of *Ae. aegypti* were maintained under insectary conditions to supply fourth instar larvae for the experiments. Individuals of six fish species (two being introduced and four being native and endemic to Sri Lanka) were introduced into separate tanks with a density of 200 *Ae. aegypti* larvae in 1L of de-chlorinated water as the predation trials, with supplemental mosquito larvae when necessary. Prey mortality was recorded at six hour intervals for a period of 48 hours. Each experiment was replicated five times. The predatory efficiencies of six fish species denoted significant variations ($p < 0.05$), when evaluated using the General Linear Model. The highest predation efficiency per unit mass was shown by *Puntius bimaculatus* (59.77 ± 5.48) followed by *Poecilia reticulata* (52.47 ± 5.12), *Xiphophorus hellerii* (48.15 ± 2.76), *Apolochilus dayi* (43.57 ± 6.19), *Rasbora naggsi* (40.67 ± 13.05) and *Belontia signata* (24.93 ± 2.94), revealing both the native species *Pu. bimaculatus* and *Ap. dayi* as good candidates for biological control of *Ae. aegypti* compared to introduced *Po. reticulata* and *X. hellerii*. ANOSIM and cluster analysis suggested associations (in terms of their predation over *Ae. aegypti*) among *B. signata* - *Ap. dayi* (exotics) and *Po. reticulata* - *X. hellerii* - *R. naggsi* (predominantly exotics), leaving *Pu. bimaculatus* alone, indicating the latter to be unparalleled as a mosquito bio-control agent. While further investigations are suggested, present preliminary findings are important in the light of *Po. reticulata* been identified as an invasive species that threatens the freshwater biota in Sri Lanka, after its introduction for mosquito bio-control.

Keywords: *Aedes*, Bio-control, Dengue, Freshwater fish, *Puntius bimaculatus*