

PANTALA FLAVESCENS (WANDERING GLIDER) AND CERIAGRION COROMANDELIANUM (YELLOW WAXTAIL) AS PREDATORS OF PREIMAGINAL STAGES OF AEDES AEGYPTI (DIPTERA: CULICIDAE) IN FRESH AND BRACKISH WATER HABITATS FROM JAFFNA, NORTHERN SRI LANKA.

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The present study aimed to report the efficiency and the potential use of natural predators as biological control agents to control the preimaginal stages of primary dengue vector *Aedes aegypti* in the Jaffna peninsula as preliminary research. Nymphal stages of dragonfly *Pantala flavescens* and damselfly *Ceriagrion coromandelianum* were collected from local ponds. They were acclimatized to the freshwater (0 ppt /g L⁻¹) and brackish water (10 g L⁻¹) to conduct the experiments against the standard laboratory colonies (0 g L⁻¹ and 10 g L⁻¹) of mosquito *Ae. aegypti*. The experiment was conducted in triplicates and repeated thrice with different individual predators. Hundred, third instar larva of *Ae. aegypti* were introduced, and the predatory activity was recorded every 24 hours up to 72 hours. The prey density was maintained by replenishing the same number of larvae. The predatory rate (PR), predatory impact (PI), and clearing rate (CR) were calculated for both predators for both salinities. The results indicated that both predators show promising efficacy in controlling the mosquito larvae, where the clearing rate of the *P. flavescens* was significantly high ($p < 0.05$) over *C. coromandelianum* in both freshwater ($p = 0.0003$), and brackish water ($p = 0.0003$) experiments, and the predatory impact and the predatory activity were also exhibited considerably high in the dragonfly *P. flavescens* both in the freshwater and brackish water environments. The damselfly *C. coromandelianum* shows an increasing trend in its clearing rate of prey over time, with slight variations based on salinity. The preliminary results of the study suggest that these natural predators could be introduced as a green solution to control the preimaginal stages of mosquito species in both freshwater and brackish water habitats, and this could potentially aid in reducing the prevalence of dengue and other mosquito-borne diseases in coastal areas like Jaffna Peninsula.

Keywords: *Aedes aegypti*, *Ceriagrion coromandelianum*, Clearing Rate, *Pantala flavescens*
Predatory impact