

(ID 276)**Impact of Naturally Occurring Water Types and pH on the Emergence and Survival of *Aedes albopictus* Mosquitoes in Southern Sri Lanka****Ishara, S.M.S., Bandara, R.H.M.P., Chathuranga, W.G.D.****Department of Zoology, University of Ruhuna, Matara, Sri Lanka***chathurangawgd@zoo.ruh.ac.lk***Abstract**

Mosquitoes play a major role in significant disease outbreaks in humans and animals in many parts of the World. A better understanding of mosquito fauna in diverse ecological conditions including physico-chemical parameters is important in risk assessment of vector-borne diseases. Thus, this study was designed to identify the impact of naturally occurring water types and pH on *Aedes albopictus*, one of the dengue disease vector mosquitoes in Sri Lanka. Five different water types, *i.e.*, marine, brackish, pond, rain, and distilled water; as well as pond water with three different pH values (pH 6, pH 7, and pH 8) were used for this study. Twenty eggs each of *Aedes albopictus* under different water types and pH levels were used to identify the survival and completion of their life cycle through larvae to the emergence of adult mosquitoes. Control setups were also used together with the experiment setups. pH and salinity of the different water types were also measured for all the water types. During this study, a total of 560 eggs were monitored and four replicates each were used for the analysis under different water types and pH values. Measured pH values were highest in marine water (pH 8.96-9.20), and it was lowest in rainwater (pH 5.05-5.70). Conductivity levels were also highest in marine water (4,880.76-5,530.60 $\mu\text{S/m}$) and it was lowest in distilled water (0.00–0.02 $\mu\text{S/m}$). According to the observations, the highest hatching percentage was reported in brackish water (18 ± 1.83) and pond water under pH value 8 (8.25 ± 5.62). Meanwhile, the lowest hatching percentage was reported in pond water with pH 6 (3 ± 3.56). The highest adult emergence was also given in brackish water (17.8 ± 2.2) and pH value 7 (7 ± 0). However, the lowest adult emergence was observed under pH value 6 (2.5 ± 0). Especially, no larvae or adults emerged from marine water. There was a significant difference in larvae hatching and adult emergence in different water types and under-selected pH values ($p < 0.05$). The findings of this study are crucial in the recognition of the impact of water types and pH on the emergence and survival of *Aedes albopictus* mosquitoes in Sri Lanka.

Keywords: Adult emergence, Hatching success, Mosquito survival rate, Physico-chemical parameters, Water quality