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# SETTLEMENT PREFERENCES OF FOULING ORGANISMS IN RELATION TO SETTLEMENT PLATE ORIENTATIONS

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Biofouling is a process which aquatic micro and macro organisms accrete into a surface when expose to marine environment for a longer period. The development of biofouling communities follows a pattern of colonization and succession. The developing community affected by certain biotic and abiotic factors. The texture, surface topography and orientation of the hard surface, are major abiotic factors that mostly determine the composition of the settling community. Although, there are several studies looking at effects of surface topography and texture on biofouling community development, very little is known on the effect of plate orientation. Therefore, present study was to investigate the effect of surface orientation of the settlement plates on fouling. The study was conducted in six sampling locations within Colombo port. Sampling was conducted using artificial settlement plates. Settlement collectors were submerged in four different depths where first set was 1 m below the water surface and others setting at 1 m intervals. Monthly samples were collected from October 2014 to March 2017. Specimens were identified morphologically using fine morphological features and samples were quantitatively assessed by determining their covering percentage and species abundance. One-Way ANOVA test results showed that there was a significant difference ( $0.05 > p$ ) between settlement plate orientation (i.e. vertical and horizontal), species richness and species coverage. Further, total richness data revealed that vertical surfaces occupy more species compared to horizontal surface. Results indicate that spatial orientation of surfaces play a major role influencing the settlement to structures. There may be other confounding physical and biological factors for settlement selection which need to be revealed.

**Keywords:** Colombo Port, settlement collectors, plate orientation, biofouling organisms