(85)

Abundance of Virus-Like Particles Associated with Coral Mucus on the Dominant Corals in Southern Sri Lanka

Chalodya, B.M.L.J.*, Tharinidu, K.A.K.D., Fairoz, M.F.M.

Department of Fisheries and Marine Science, Faculty of Fisheries and Ocean Sciences, Ocean University of Sri Lanka, Tangalle, Sri Lanka.
**lihinijayasri@gmail.com*

Abstract

Coral reefs are among Earth's most diverse and productive ecosystems, playing a crucial role in marine environments by supporting biodiversity and providing habitats for numerous marine organisms. Coral mucus, a gel-like secretion produced continuously by coral polyps, serves as a vital interface between corals and their environment, fostering complex microbial communities, including bacteria and viruses. Understanding the abundance of viruses in coral mucus and their relationship with bacteria is essential for linking microbial dynamics to coral health. This study aimed to quantify the abundance of virus-like particles (VLPs) in the mucus of dominant coral species to investigate coral mortality in southern Sri Lanka. Coral mucus samples were collected from Paraviwella (PV), Polhena (POL), and Weligama (WEL) reef sites to assess VLP abundance in two key coral species: *Montipora* sp. and *Acropora* sp. The VLP counts were quantified using epifluorescence microscopy and analyzed statistically using one-way ANOVA and descriptive analysis. Results revealed significant differences in VLP abundance between *Montipora* sp. and *Acropora* sp. across the southern sites, with *Montipora* sp. consistently exhibiting higher VLP levels *($p<0.05$)*. These findings highlight notable variations in VLP abundance among the dominant hard corals across the three reef sites, emphasizing the species-specific health and stress dynamics. This study underscores the importance of monitoring VLP abundance as a potential indicator of coral health, particularly in assessing the impacts of environmental stressors on southern and northern coral reefs.

Keywords: *Virus-like particles (VLPs), Coral reefs, Coral health, Southern Sri Lanka, Coral mortality*