

**MOLECULAR DETECTION OF *Aeromonas* spp. IN MUNICIPAL TAP WATER FROM SMALL SCALE RESTAURANTS IN NUWARA ELIYA DISTRICT, SRI LANKA**

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*Aeromonas* species, Gram-negative bacteria ubiquitous in aquatic environments, particularly in freshwater, are increasingly recognised as emerging waterborne pathogens implicated in both gastrointestinal and systemic infections in humans. The objective of this study was to detect the occurrence of *Aeromonas* spp. in municipal tap water in the Nuwara Eliya District, a highland region with distinctive climatic and hydrological features, potentially affecting water safety. Aseptically collected water samples were obtained from taps supplying drinking water to consumers at thirty-seven randomly selected small scale restaurants across various locations in Nuwara Eliya, during the period from December 2024 to February 2025. Typical colonies of *Aeromonas* spp. isolated on Glutamate Starch Phenol Red (GSP) agar were presumptively identified to the genus level through phenotypic characterisation, including Gram staining and a series of biochemical tests. Molecular confirmation of these presumptive *Aeromonas* isolates was performed using polymerase chain reaction (PCR) with *Aeromonas* genus-specific 16S rRNA primers. Out of thirty-seven processed water samples, eight (21.62%) tested positive for *Aeromonas*. Fourteen isolates were presumptively identified as *Aeromonas* spp. through biochemical tests. However, PCR analysis confirmed only thirteen isolates as *Aeromonas*, providing the first molecular evidence of the presence of these pathogens in treated municipal water within this region. The detection suggests possible inefficacies in current water treatment and distribution systems, raising concerns over microbial contamination and public health risks. These findings suggest the potential presence of *Aeromonas* in treated municipal water. Ongoing investigations into the species-level identification, virulence factors, and antimicrobial resistance profiles of *Aeromonas* isolates aim to provide a clearer understanding of their pathogenic potential and to inform future risk assessments.

**Keywords:** *Aeromonas* spp., Drinking water, Molecular detection, Phenotypic characterisation, Public health