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MOLECULAR DETECTION AND SEROTYPING OF *Listeria monocytogenes* IN PASTEURISED MILK FROM COLOMBO DISTRICT, SRI LANKA

T.S. Thalpavila[1,2], O.T. Weerasinghe[1,2], M.S.F. Shanu[3], R. Wimalasekera[1] and W.A.S. Wijendra[2]*

[1]Department of Botany, University of Sri Jayewardenepura, Colombo, Sri Lanka.
[2]Medical Research Institute, Colombo, Sri Lanka.
[3]Department of Botany, Open University of Sri Lanka, Nugegoda, Sri Lanka.
*wijendra@mri.gov.lk

Listeria monocytogenes is a pathogenic bacterium that can cause severe illness and may be fatal in high-risk populations, including in immunocompromised individuals and pregnant women. Mitigating the risks associated with *Listeria* contamination in food products is a critical public health priority. There is a lack of recent research addressing *L. monocytogenes* in pasteurised milk from retail outlets. This study investigated the prevalence and serotypes of *L. monocytogenes* in pasteurised milk samples from retail outlets in the Colombo District, using molecular methods. Fifty pasteurised milk samples were collected from retail outlets in the district. Primary enrichment of *Listeria* spp. in samples was carried out using Listeria Selective Enrichment Broth (LSEB), followed by streaking onto Listeria Selective Agar (LSA) plates, for the isolation of typical *L. monocytogenes* colonies. DNA was extracted from all isolates and molecular confirmation was carried out through Nested PCR. Multiplex PCR was used for serotyping, as *L. monocytogenes* has 13 known serotypes, with a few that are most often linked to human listeriosis. The results revealed that *L. monocytogenes* was present in 20 out of 50 samples (40%), indicating a significant risk associated with dairy consumption. From the 50 milk samples, 46 presumptive *Listeria* isolates were obtained, of which 23 were confirmed as *L. monocytogenes* and subjected to serotyping. Serotype 1/2b was identified in 8.69% of the positive samples, while a combination of serotypes 4b and 1/2C was found in 4.34%, suggesting the potential for strain coexistence. Additionally, 86.95% of the isolates remained untyped with the markers used in this study, underscoring the need for additional characterisation and broader molecular approaches to capture the full diversity of circulating strains. Although detected in low numbers, the presence of *L. monocytogenes* serotypes 1/2b and the combination of 4b and 1/2C in pasteurised milk indicate a potential public health concern, underscoring the need for strengthened surveillance and food safety regulations in Sri Lanka.

Keywords: Foodborne bacteria, Food safety, *Listeria* spp., Pasteurised milk, Serotypes