Prevalence, characterisation, and antimicrobial resistance of *Listeria* species and *Listeria monocytogenes* isolates from raw milk in farm bulk tanks

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**Abstract**

A total of 446 various raw milk samples were collected from numerous farm bulk milk tanks to examine the presence of *Listeria* species. These isolates were further characterised by biochemical tests and Polymerase Chain Reaction (PCR). *Listeria* spp. was isolated in 83 of the 446 samples (18.6%). The highest prevalence of *Listeria* spp. was detected in raw cow milk samples (22.5%), followed by raw sheep milk (16.4%) and raw goat milk (4.9%). The most common species isolated was *Listeria innocua* (57.8%); the remaining *Listeria* isolates were *Listeria monocytogenes* (21.7%), *Listeria welshimeri* (12%), and *Listeria seeligeri* (8.4%). Based on PCR serotyping, the 18 *L. monocytogenes* isolates were distributed into three serogroups “1/2a, 3a” \( (n = 11) \), “1/2c, 3c” \( (n = 5) \), and “4b, 4d, 4e” \( (n = 2) \). All the examined *L. monocytogenes* were positive for internalin genes \( (inlA, inlC, \text{ and } inlJ) \). The *Listeria* spp. isolates were resistant to tetracycline (49.4%) and penicillin G (43.4%) but remained susceptible to gentamicin, vancomycin and rifampicin. The findings of this study show that consumption of raw milk could be a potential risk of human listeriosis.