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Incidence of *L. monocytogenes* and *E. coli* O157:H7 in ground beef

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Statement of the Problem: Ground beef is a raw food of animal origin that constitutes a significant portion of the Turkish diet. It is a good medium for the rapid growth of microorganisms. The bacteria normally found on the surface of meat are distributed throughout the entire product during the mincing and mixing process used to produce raw ground meat. It has been known as a vehicle for transmission of organisms such as *E. coli*, *E. coli* O157 or H7 and *L. monocytogenes*.

Methodology & Theoretical Orientation: In the study, a total 70 ground beef samples were tested for contamination by *L. monocytogenes* and *E. coli* O157:H7. Isolation of *E. coli* O157:H7 was carried out FDA (2001). For this Tryptone Soya Broth with novobiocin and TC-SMAC (Tellurite Cefixime Sorbitol MacConkey) agar plates were used enrichment step and specific media, respectively. Isolation of *L. monocytogenes* and other *Listeria* spp. *Listeria* Enrichment Broth and Fraser Broth were used pre-enrichment and enrichment step, respectively. For the isolation, *Listeria* selective agar was used.

Findings: *Listeria* spp. was present in 27 (38.6%) of the samples. *L. monocytogenes* was detected 9 (12.9%), 7 (10.0%) as *L. innocua*, 5 (7.1%) as *L. ivanovii*, 4 (5.67%) as *L. seeligeri* and 2 (2.9%) as *L. welshimeri*. However, *E. coli* O157:H7 was not detected in any of the samples.

Conclusion & Significance: The incidence of *L. monocytogenes* in ground beef indicates the need for improved equipment and facility, sanitation in slaughterhouse and in ground beef preparation and handling facilities. The presence of *L. monocytogenes* in ground beef samples is concerning public health risk. More sensitive methods should be used instead of conventional culture techniques in order to properly detect and characterize contamination by *E. coli* O157:H7.

Biography

Belgin Siriken is an expert about food microbiology, safety and chemical properties of particularly animal origin foods. She finished her PhD at Ankara University, and now she works as Prof. Dr. at Ondokuz Mayıs University, Samsun, Turkey. She focuses on working molecular food microbiology.

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