

Assessing Pathogen Presence and Microbiological Safety in Artisanal Cheeses from São Paulo State

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Artisanal cheeses produced in the state of São Paulo have gained widespread acceptance among consumers due to their unique organoleptic characteristics. These cheeses, made from either raw or pasteurized milk from various animal species, are considered distinctive because they are produced with adaptations from several traditional recipes. Given the growing interest in these products, this study aimed to evaluate the presence of the pathogens *Listeria monocytogenes*, coagulase-positive *Staphylococcus* (CPS), *Salmonella*, and Shiga toxin-producing *Escherichia coli* (STEC) in 58 samples of artisanal cheese—29 produced with raw milk and 29 with pasteurized milk—all come from the state of São Paulo. The methodologies employed in the study included ISO 11290-2 (2004) for the detection and enumeration of *L. monocytogenes*, ISO 6579-1 (2002) for *Salmonella* detection, and ISO 13136-1 (with modifications) for STEC. For CPS, the 3M Petrifilm™ Staph Express method was used. Results indicated that STEC was detected in 1 out of 58 samples (1.7%) produced with raw milk. The *invA* gene of *Salmonella* was detected by conventional PCR in 9 samples (15.5%) in the enrichment step; however, no sample was confirmed during the isolation step. *L. monocytogenes* was detected by the amplification of the *prfA* gene in 16 samples during the enrichment step, with 5 of these samples testing positive during the isolation step. Of these, 4 samples had populations exceeding 10^2 CFU/g—2 of which were produced with raw milk and 2 with pasteurized milk. Regarding CPS counts, 49 samples (24 raw milk and 25 pasteurized milk) exhibited populations above 10^3 CFU/g, which is the maximum limit allowed by the Brazilian regulation. No sample tested positive for both *L. monocytogenes* and STEC simultaneously. The presence of STEC, serotype O174 H:21 with the *stx2* gene, *L. monocytogenes*, and CPS in significant quantities pose a potential health risk to consumers. Consequently, the adoption of good practices across the entire production chain—from farm to fork—is essential to ensure the safety of these artisanal cheeses.

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