

E Coli Traceability in Iran's Industrial Hamburgers

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Background & Objectives: *E. coli* is one of the most important indexes for microbiological quality evaluation of foods, so it is necessary to enumerate and evaluation of pathogenesis of this bacteria in foods specially in meat products.

Methods: For microbiological quality evaluation of hamburgers, 102 samples of different brands selected by accidental sampling methods. MPN of the samples calculated based on ISIRI no:11166, 2008. Hamburgers were classified to 5 groups based on the meat percentages from 30% to 90% and *E. coli* were enumerated in 4 categories: less than 10, 10-100, 100-1100 and more than 1100. For traceability of pathogenic *E. coli*, 50 samples of 102 were cultivated on EMB media after fortifying in LS media as a liquid selective media. DNA extracted from colonies and PCR has done by special primers.

Results: Most *E. coli* were enumerated in first category by less than 10 *E. coli* per gram of product. In all 5 groups, there were no significant differences of *E. coli* numbers in two categories of 10-100 and 100-1100 of hamburgers with 30% and 60% meat. Only 3 samples of 102 samples had MPN more than 1100 in gram. There were few hamburgers with more than 1100 *E. coli* per gram but 71.5 % of hamburgers had *E. coli* less than 100 that related to good microbiological quality. 28.5 % of hamburgers had *E. coli* more than 100 per gram. IT could be the result of poor microbiological quality.

Conclusion: For less microbiological quality it is necessary to follow the GMP principles in hamburger factories.

Keywords: *E. coli*; Hamburgers; Iran