

Occurrence of *Bacillus cereus* in beef burger marketed in Tehran, capital of Iran

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Abstract

Introduction: Beef burgers made in Iran contain various compounds such as meat, cereals flour, as well as some spices which can be contaminated with *Bacillus cereus*, causing gastroenteritis in the consumer. This study is focused on occurrence of *B. cereus* in beef burgers marketed in Tehran, capital of Iran.

Methods and Results: In this cross-sectional study, a total of 80 samples of different types of beef burgers marketed in Tehran, Iran were randomly collected based on their percentage of meat content, including 30% (n=25), 60% (n=40) as well as 90% (n=15). The samples were analyzed microbiologically by routine culture assay and biochemical tests to find *B. cereus*. Data were analyzed statistically by Microsoft Office Excel 2010. Twenty-five out of 80 (31.25%) beef burger samples were contaminated by *B. cereus*. Based on the percentage of meat content in the samples, the beef burger with 90% meat were significantly ($p < 0.05$) more contaminated than the others. Also, the contamination rate was significantly ($p < 0.05$) higher in summer compared to winter.

Conclusion: This survey showed that the beef burgers supplied in Iran markets is main source of *B. cereus* that can cause disease in Iranian consumers. More attempts must be focused on cold-chain maintenance in production, distribution, and storage of the meat products.

Keywords: *Bacillus cereus*, Meat Products, Food Safety, Iran