

Prevalence and Antimicrobial Resistance of *Escherichia Coli* in Ready to Eat Foods

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Abstract

Ready to eat (RTE) foods are widely used at home, restaurants and during festivals. So it's very important to investigate the microbial quality in RTE foods. Therefore, this study was aimed to determine the total coliform count (TCC), to isolate, identify and characterize the *E. coli* in RTE foods. Antimicrobial sensitivity of *E. coli* obtained from RTE foods was also performed using seven commonly used antibiotics. A total of 100 RTE food samples comprising of ten samples each of burger, pizza, sandwich, chicken roll, chicken meat loaf, chicken fry, salad vegetables, ice-cream, yogurt and milk shake samples sold at Mymensingh city were collected aseptically. Samples were inoculated onto Eosin Methylene Blue (EMB) agar and incubated at 37°C for 24 hours. Isolation and identification of bacteria was performed on the basis of cultural, staining and biochemical properties followed by Polymerase Chain Reaction (PCR). The TCC in chicken meat loaf, burger, pizza, sandwich, salad vegetables, ice-cream, and yogurt samples were 3.57 ± 0.96 , 3.69 ± 0.08 , 3.50 ± 0.60 , 2.60 ± 0.20 , 3.09 ± 0.29 , 4.44 ± 0.25 , 3.14 ± 0.30 mean log CFU \pm SD/ml respectively. The prevalence of *E. coli* in chicken meat loaf, burger, pizza, sandwich, salad vegetables and ice cream were 20%, 30%, 30%, 20%, 30 %, 30% and 20% respectively. All isolates were negative for both Shiga toxin (Stx1 and Stx2) genes. *E. coli* was found sensitive to gentamycin, colistin, enrofloxacin and resistant to cephalixin and ampicillin. The findings indicate that RTE foods were commonly contaminated with antibiotic-resistant *E. coli*, which may pose a risk for consumer's health and for transmission of antibiotic resistance..

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