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Studies on *Escherichia coli* in milk and some dairy products.

Thesis presented by

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ABSTRACT

The aim of this study was to investigate the prevalence of *E. coli* in raw milk, fresh cream, large and small scale yoghurt, large and small scale ice cream and Kareish cheese by conventional bacteriological methods as well as detection of the *wzy* gene (O-antigen polymerase gene) using polymerase chain reaction for further identification of recovered isolates. A total of 200 random samples including 40 raw milk, 40 cream, 20 of each large and small scale yoghurt, 20 of each large and small scale ice cream and 40 Kareish cheese were collected from dairy shops, supermarkets and farmers houses from different localities in Beni-Suef governorate, Egypt. The present study could provide useful information for the incidence of *E. coli* in the examined samples: 75%, 62.5%, 0%, 25%, 10%, 25% and 80% respectively. Serological identification of isolated strains of *E. coli* were: O26, O111:H4, O121, O125:H21, O169, O126:H7 and O158 for raw milk, O6:H16, O55:H7, O119:H6, O125:H6 and O146:H21 for fresh cream, O55:H7, O125:H21 for small scale yoghurt and O18, O55:H7, O114:H21, O158, O125:H21 and O153:H45 for Kareish cheese. Interestingly, by using PCR for further identification of recovered isolates, PCR successfully amplified the *wzy* gene (O-antigen polymerase gene) in *E. coli* isolates which is associated with LPS (lipopolysaccharides) biosynthesis and bacterial pathogenicity and increases the ability of *E. coli* to withstand the anti-bacterial defense mechanism of the blood serum.

Key words: milk, dairy products, *E. coli*, serology, PCR.

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