



Faculty of Veterinary Medicine
Department of Food Hygiene & Control



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Shiga toxin producing *Escherichia coli* in milk and some dairy products

Thesis presented by

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For the degree of Ph.D

(Hygiene and Control of Milk and Its products)

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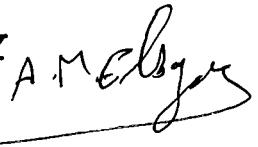
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Shiga toxin producing Escherichia coli in milk and some dairy products

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ABSTRACT

Two hundred & eighty samples [100 samples of raw milk, 50 samples of ice cream, 30 samples of plain yogurt and 100 samples of cheese (25 each of soft, hard, processed and Kariesh)] were randomly collected from dairy farms, dairy shops and groceries in Cairo and Giza governorates. Coliforms could be detected in 96%, 58%, 50%, 80%, 84%, 72 % and 60% of raw milk, ice cream, plain yogurt, Kariesh cheese, soft cheese, hard cheese and processed cheese samples, respectively. *Escherichia coli* and other species of coliforms could be detected in the examined samples at varying percentages. The incidence of Enterohemorrhagic *E. coli* by using MUG test were 22.60%, 30%, 25%, 25%, 66.67%, 57.14% and 42.86% of the examined samples of raw milk, ice cream, plain yogurt, kariesh cheese, soft cheese, hard cheese and processed cheese, respectively, also shigatoxigenic *E.coli* could be serologically identified which belonged to O157, O78, O103, O118, O124, O145 and O164, it was evident that shiga toxins could be detected using ELISA test in raw milk, ice cream, Kariesh cheese and processed cheese samples. By using PCR technique, shiga toxin (Stx2) gene was confirmed in the examined raw milk samples. Shigatoxigenic and non toxigenic *E. coli* strains survived for shorter period in acidophilus yogurt than in traditional yogurt when stored at 4 °C, also its behavior in raw, pasteurized and boiled milk stored at different storage temperatures (4, 8 and 12 °C) was studied. The public health significance of isolated strains from the examined samples of milk and some dairy products are discussed as well as the suggestive hygienic measures for improving the quality of milk and its products.

Key words: Shiga toxin producing *E. coli*, milk and dairy products, survival.

Dedication

To my parents

The reason of what I become today

Thanks for your great support and continuous care.

*To my husband, my daughters and my husband's
parents.*

To all members of my family

*Their love and support are the greatest gifts of my
life.*

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