



Cairo University
Faculty of Veterinary Medicine
Food Hygiene & control Department

Comparing the safety and quality of raw and Ultra Heat Treated (UHT) milks sold in Egypt

**Thesis
Presented by**

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B. V. Sc. (2010) - Cairo University

**For the degree of M. V. Sc.
(Hygiene and control of milk and its products)**

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Abstract

One hundred and fifty random samples of raw and UHT milk (75 each) were collected from different localities in Cairo and Giza to compare the quality and safety of them. The results revealed that the mean MSCC/ml of raw milk were 2.22×10^5 . Inhibitory substances were absent in raw milk and found in 10 (13.33%) of UHT milk samples. Chemical composition revealed that the mean values of fat, solid-not-fat, protein, lactose, and salt were 5.96 & 3.32; 7.78 & 7.01; 2.90 & 2.59; 4.09 & 3.70; and 0.74 & 0.65 in raw and UHT milk samples, respectively. The results of density and freezing point indicate the addition of water in 61 (81.33%) of raw milk and in all of UHT samples. Microbiological examination revealed that the mean TCC, Coliforms, Staphylococci, Yeasts and Moulds counts (cfu/ml) were 44.1×10^{12} & 33.55×10^6 ; 40.5×10^{12} & 29.03 ; 18×10^8 & 15×10^3 ; 37×10^7 & 13×10^4 and 16×10^6 & 14×10^2 in raw and UHT milk samples, respectively. The mean aerobic spore formers and *Bacillus cereus* counts (cfu/ml) in UHT milk samples were 82.9×10^6 and 29.1×10^7 , respectively. Coagulase and TNase positive *Staphylococcus aureus* were detected in both raw and UHT milk samples, *Listeria monocytogenes* were detected in two samples of raw milk but not detected in UHT milk samples. *Yersinia enterocolitica* could not be detected in any of the examined samples. The economic and public health importance of detected organisms were discussed.

Key words: Quality, safety, raw milk, UHT milk, MSCC, chemical composition, aerobic spore formers *B. cereus*, *S. aureus*, *L. monocytogenes*, *Y. enterocolitica*,