

Bacteriological Studies of Raw Cow's Milk in Zagazig Markets

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Abstract

A survey was conducted to determine the hygienic quality of examined raw cow's milk samples by applying the keeping quality tests and bacteriological examination. One hundred random samples of raw cow's milk were collected from different markets and shops in Zagazig city, Sharkia Governorate, Egypt. The obtained results showed the mean value of acidity% and pH in examined raw cow's milk samples was 0.13 ± 0.001 and 6.81 ± 0.02 , respectively. While the mean total bacterial counts/ml of examined raw cow's milk samples was $1.67 \times 10^8 \pm 3.63 \times 10^7$ cfu/ml. Coliforms could be detected in 70.0% of samples with a mean value of $2.90 \times 10^5 \pm 1.06 \times 10^5$ cfu/ml. *Citrobacter amalonaticus*, *Citro. diversus*, *Citro. freundii*, *Enterobacter aerogenes*, *Ent. agglomerans*, *Ent. cloacae*, *Ent. gergoviae*, *Klebsiella oxytoca*, *Kl. pneumonia* subspecies *pneumonia* and *E. coli* could be isolated at varying percentages ranged from 4% to 10%. Serological identification of *E. coli* strains revealed several serotypes as O119, O127, O111, O124 and O114. Concerning staphylococci, they could be detected in 55 % out of examined samples with a mean value of $2.15 \times 10^5 \pm 1.07 \times 10^5$ cfu/ml. *Staphylococcus aureus*, *Staph. epidermidis* and *Staph. intermediate* could be isolated from the examined raw cow's milk samples in percentages of 42%, 9% and 4% respectively. *Enterococcus faecalis*, *E. faecium* and *E. intermediate* could be detected in 71%, 65% and 16% out of examined raw cow's milk samples, with mean counts of $2.31 \times 10^4 \pm 5.37 \times 10^3$, $2.58 \times 10^4 \pm 6.54 \times 10^3$ and $3.88 \times 10^3 \pm 1.21 \times 10^3$ cfu/ml, respectively. The hygienic and public health importance of isolated microorganisms as well as their control measures were discussed to improve the quality of raw milk to safe guard the consumers from infection.