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"Solidarity in a competing world — fair use of resources"

Quality of Pasteurised Market Milk in Kenya

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Abstract

Milk pasteurisation is a heat treatment of milk which aims at destroying all pathogenic and vegetative spoilage microorganisms. Unexpired pasteurised milk is therefore supposed to be safe for human consumption. The aim of this study was to investigate the quality conformance of whole pasteurised milk sold on the Kenyan market to East African Standard (EAS) requirements. Forty, 500 ml of unexpired whole pasteurised milk packed in polythene pouches and representing four brands were bought from supermarkets in Nakuru, Kenya in February 2016. The milk was tested for proximate composition, microbial quality and degree of pasteurisation. None of the milk brands met all the EAS requirements. For all the milk sampled, butterfat had a mean of 3.21±0.33 % with 60 % below EAS requirement of >3.25 %. In one brand, the mean butterfat was 2.80±0.05 % and none of the samples met the quality requirement while in another brand, the mean was 3.66±0.09 %, and all the samples met the quality requirement. The mean Milk-Solid-Non-Fat (MSNF) and density for all the milk sampled was 7.25±0.18 % and 1.026±1.02 g/ml respectively with no sample meeting the requirement of >8.5 % for MSNF and >1.028 g ml^{-1} for density. The mean Total Viable Count was log10 5.65±3.19 cfu ml^{-1} with 7% not meeting the requirement of <log$_{10}$ 4.48 cfu ml^{-1} while the mean Coliform Count (CC) was log10 1.02±2.6 cfu ml^{-1} with 15 % of samples failing the requirement of < log$_{10}$ 1 cfu ml^{-1}. In addition, 22 % of the milk failed the pasteurisation test. In one brand, milk was properly pasteurised but failed the quality requirement for CC. Processors need to assess microbial quality of milk by quick methods such as methylene blue dye reduction test to increase the severity of the pasteurisation regime if microbial quality of milk is poor. Proper cleaning and sterilisation of plant equipment and surfaces, and observing aseptic packaging is necessary to avoid milk post-pasteurisation contamination. Processors also need to provide incentives to milk suppliers such as quality based payment to encourage delivery of good quality milk for processing. Finally, processors should take responsibility for sale of good quality milk to the consumers.

Keywords: East African Standard, milk quality, pasteurised milk

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