

Quality and the extent of adulteration of raw milk – A study in Southern province of Sri Lanka

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Abstract

Milk adulteration is a serious issue especially in developing countries where adequate quality control facilities are less available. The present study was carried out during 2019 to investigate the quality and the extent of adulteration of raw milk reaching chilling centers belong to Milk Industries of Lanka Company (MILCO) Private Ltd situated in three Districts (Matara, Galle, and Hambantota) of Southern Province in Sri Lanka. Raw milk brought by individual farmers and from milk collecting points were thoroughly mixed at chilling centers and were separately collected into 250 mL screw capped cleaned dry sample collection bottles. Collected samples were immediately transported in ice boxes to the laboratory of the Department of Animal Science, Faculty of Agriculture, University of Ruhuna for analysis. Total 78 milk samples were analyzed using standard procedures for pH, titratable acidity, specific gravity (SG), composition, heat/alcohol stability and for the presence of adulterants (ammonium sulfate, cane sugar, formalin, salt, starch and detergents). Data were analyzed using SPSS (ver. 20). Mean total solids (TS) and the solid nonfat percentage of the milk from Hambantota district was observed to be significantly ($p < 0.05$) higher compared to the other two districts. Mean TS and SG of milk from Matara district was lower than the average values for cow milk. Titratable acidity of milk from all locations was observed to be normal and within the acceptable level. It was found that 17.95% of milk samples were positive only for the detergents but none of the other adulterants tested. Milk from Hambantota was found to have the highest percentage of samples failing alcohol and clot on boiling tests (20 and 15%, respectively), followed by Galle (11.5 and 7.7%) and Matara (3.1 and 0.0%) districts. Milk adulteration seems to be controlled by application of proper testing protocol in chilling centers.

Keywords: Adulteration, Chilling centers, Compositional quality, Detergents, Milk

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