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Title:

Bacteriological and physicochemical assessment of raw milk in Basra province

Abstract:

The aims of this study were comparison bacteriologically and physico-chemically between milk samples taken directly from cows and milk samples from local markets also to detect adulteration in samples from local markets. Total number of samples was 205. One hundred samples were taken directly from apparently normal cows, and 105 samples from local markets.

This study was conducted from October (2015) to March (2016). The samples were subjected to indirect mastitis test [California Mastitis Test] (CMT) Result of this study revealed that 35.1% of tested samples were positive to (CMT) and 32.4% from indirect samples. Several tests were done on samples which including: organoleptic tests (general appearance, color, odor and consistency) found that 89% of the total samples were normal in general appearance, 10% had tiny clots, 4.8% thick in consistency , 0.97% samples slimy in consistency , 91% light yellow in color and 8.7% of total samples white in color. The samples were cultured to determine the total bacterial and coliform count ,the results of these tests revealed that that direct samples (negative for CMT) had low number of bacteria (within range) about 80.4log0. And high number of total bacterial count about 4008log10 was detected in positive samples for CMT, regarding the indirect samples high value of total coliform count were recorded about 6.28log10 due to milk collected with unhygienic practices.

The high value of total bacterial count may be produced from long storage in unsuitable conditions. The samples were analyzed by lacto flash system to measure the percent of fat, solid not fat, protein, relative density, lactose and freezing point. The affected samples (CMT positive) when compared with (CMT negative) subjected to increase in fat, protein, SNF, relative density and pH; however, decrease in freezing point and lactose. Regarding the adulteration of milk, this study viewed that the major constituents of milk in indirect samples were lower than normal samples (fat, protein, SNF and lactose), whereas, other indicators were increased (Freezing point, pH and titratable acidity). In conclusion, the samples from local markets were subjected to adulteration and had a high numbers of total bacterial and coliform counts. The results of this study explicated that the milk from local markets had a threatening on health had low nutritive value.