COMPOSITIONAL AND KEEPING QUALITY OF COW MILK ON ETHANOL STABILITY

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The alcohol test is used as a platform test for rapid determination of elevated acidity of milk at milk reception centres. In addition to microbial acidity, milk ethanol stability is affected by other variables such as pH, saline balance and divalent cation content, sudden changes in animals' diet, diseases, under feeding and metabolic acidosis. As a result, large percentage of milk samples is misclassified as sour milk, leading to economic losses to the production chain. Even though the initial recommended ethanol concentration is 68% (v/v), different ethanol concentration levels are used by milk collection centers to detect milk acidity leading to high risk of unjustified sample rejection. Therefore, this study was carried out to investigate the compositional and keeping quality parameters of raw milk on ethanol stability and to find out the suitable concentration of ethanol that could be recommended for the alcohol test at milk reception. Individual milk samples (176) were collected and tested for ethanol stability at milk reception, using different concentrations of ethyl alcohol *viz.* 66%, 68%, 70%, 72% and 74 % (v/v). Selected samples were analyzed for compositional, keeping quality and physical properties. Data were statistically analyzed using Logistic Regression. The GLIMMIX procedure in SAS was used to analyze the data. Tukey's Studentized Range Test was used for pair-wise comparisons and significance was tested at P=0.05. Results revealed that, ethanol stability of milk significantly differed ($p<0.05$) with milk pH, acidity and freezing point. In contrast, electrical conductivity, Resazurin test, protein, solid non-fat, total solids, specific gravity, lactose, total bacterial count (TBC), Ca and Mg were not significantly different ($p>0.05$) with different concentrations of ethyl alcohol. Considering milk quality and rejection rate at each alcohol concentration, the use of ethanol concentration in the range of 68 - 72% (v/v) in the ethanol stability test can be recommended at milk reception.

Keywords: Compositional parameters, Ethanol stability, Keeping quality, Physical properties