Influence of preservatives on raw milk components and somatic cell counts analysis

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ABSTRACT

The effect of preservatives on milk components and SCC analysis using infrared spectrophotometry and fluoro-optical electronic methods (Combifoss 6000) were investigated. Sixty farm composite raw milk samples were collected. Thirty ml from each sample was kept in plastic vials containing either 0.02 % bronopol, 0.4 % potassium dichromate and 0.03 % sodium azide as preservatives. The sub-samples were stored in refrigerator at 2 to 4 degree Celsius then subjected to infrared spectrophotometry and SCC by fluoro-optical electronic method (Combifoss 6000) for the detection of milk components and SCC with a control sample, respectively. The milk samples were kept in fridge at 2 to 4 degree Celsius for 0, 7, 14, 21, and 28 days. The changes in milk components and SCC were analyzed using infrared spectrophotometry and fluoro-optical electronic methods (Combifoss 6000), respectively. The results showed that the changes in milk components and SCC were statistically significant (P<0.01) for all treatments. The results indicated that the changes in milk components and SCC were not statistically significant (P>0.01) for all treatments. The results indicated that the changes in milk components and SCC were statistically significant (P<0.01) for all treatments. The results indicated that the changes in milk components and SCC were statistically significant (P<0.01) for all treatments.
analyze for milk components and SCC at 0, 7, 14, 21 and 28 days of storage. Check batches were milk sub-sample without preservative and were analyzed only on the day of delivery. Analysis result of milk components among check batch, milk preserved with bronopol and potassium dichromate showed no statistical different at 0 day storage. However, raw milk with sodium azide had lower (p<0.01) fat, protein and total solid. At longer storage than 7 days, raw milk preserved with bronopol and sodium azide showed lower (p<0.01) milk components and SCC ; whereas, potassium dichromate had affect only on milk composition but not on SCC. It is concluded that bronopol is the most suitable preservative for raw milk and preserved raw milk samples should be kept in refrigerator at 2 to 4 degree Celsius and analyzed within 7 days.

Keywords: milk components, somatic cell count, bronopol, potassium dichromate, sodium azide