Abstract

Milk is recommended as a part of food habit of human diet due to its qualities as it is enrich in proteins, vitamins and essential minerals which are necessary for human health. The pasteurization of milk is done through conventional thermal pasteurization method but due to its effect on milk composition a new pasteurization method was carried out in this study which is called ozonation. This new process of ozonation was done by using an ozone generator at 80% and 100% consistency for T1 (10), T2 (20) and T3 (30) minutes. When the process of ozonation was started bubbles were formed in the milk and this bubbling mechanism proceeds the process of pasteurization by removing the microbial load from milk. The Ozonataed T1, T2 and T3 test were analyzed through Total plate count test, coli form count test, dye reduction test and alkaline phosphatase test. The milk composition and fractionation was also determined by using further tests fat test, moisture test, ash test, and protein test. The result of ozonated dye reduction test at 100% consistency for 30 min was 5 hr. and 30 min while conventional thermal pasteurized dye reduction test was 5 hrs. Which proved that pasteurization through ozonation increase the shelf life of milk. Milk composition results and fractionation of milk results also proved that pasteurization through ozonation have no chemical effect on composition of milk and the proteins which were produced through fractionation. This study needs more detailed information and knowledge about this new technology of pasteurization which could be used at commercial and market level in dairy industries.

Keywords: Ozonation, Fractionation, Thermal pasteurization, pasteurization, milk