

Effect of Cold Plasma on Shelf Life, Vitamin C and Lactose of Raw Milk during Storage

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Abstract

This study focuses on the effect of cold plasma on lactose, vitamin C and shelf life of raw milk during storage. The results showed that the cold plasma treatment was effective to elimination of *e.coli* and *s. aureus* inoculated on milk and 7 and 8 min treatment caused complete reduction of *e.coli* and *s.aureus* inoculated in milk, respectively. In addition after 7 days storage (4°C) the number of survivors in treated samples was negligible. The results indicate that 8 min cold plasma treatment had no significant effect on lactose of raw milk immediately after treatment. Lactose is changed by changing pH and increasing temperature. Since the pH values and temperature of the samples in this experiment were remained unchanged, they did not cause degradation of lactose. The results show that after 7 days storage there are no changes in lactose content of both treated and untreated milk. In addition 2 and 4 min the cold plasma treatment had no significant effect on vitamin C concentrations while 6 and 8 min treatment cause 8% and 11% reduction of vitamin C, respectively. After 7 days storage the 59% and 60% reduction of vitamin C concentration was observed in untreated and cold plasma treated (8 min) samples, respectively.