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DETERMINACIÓN DEL TIEMPO DE ELIMINACIÓN DEL PERÓXIDO DE HIDRÓGENO EN CINCO CONCENTRACIONES EN LECHE CRUDA

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DETERMINATION OF REMOVING TIME OF FIVE DIFFERENT CONCENTRATION OF HYDROGEN PEROXIDE ON RAW MILK

Abstract

This research was developed to determine the time of removal of hydrogen peroxide (H_2O_2) and its effects on physiochemical and microbiological characteristics in raw milk. In Ecuador, the use of this chemical preservative on milk is forbidden by the regulation NTE INEN 9. Twelve samples of milk were taken daily: 6 with a preservative (Bronopol) and 6 without preservatives; there was a control sample without changes in both groups too, and 4 repetitions performed. The milk samples were obtained by a simple random design from milk drums and an intentional tampering with H_2O_2 concentrations were performed using 0,5, 2, 5, 10 and 25 mg/l, and the existence or absence of hydrogen peroxide was measured with colorimetric strips every hour. The results indicate that the H_2O_2 added on unpreserved samples, is removed by 0,5 mg/l one hour; 2 mg/l one hour; 5 mg/l 6 hours; 10 mg/l 7 hours and 25 mg/l 10 hours; and the H_2O_2 added on samples with preservatives, is removed in 0.5 mg/l 1 hour; 2 mg/l 1 hour; 5 mg/l 5 hours 10 mg/l 6 hours; 25 mg/l 11 hours. Regarding the physico-chemical and microbiological analysis results by analysis of variance, significant differences were shown ($p<0,05$) in the variables: acidity, bacterial counts and crioscopia; with the variables: pH, total solids, non-fat solids, fat and protein, no significant differences were shown ($p>0,05$). Also it is shown that the addition of H_2O_2 reduces the amount of bacteria, which is not desirable because it threatens to beneficial microorganisms for the production of dairy products and masks the acidity of milk contaminated with bacteria.

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