

ABSTRACT

Cocoa powder is used to produce in-container sterilized and pasteurized milk. Sedimentation of cocoa powder can be observed in in-container sterilized milk. The problem leads to reduce the quality of pasteurized and in-container sterilized milk. Hence this study was aimed to improve the organoleptic quality of stabilizers to control this problem. Simultaneously other organoleptic qualities were also aimed to enhance by using chocolate liquid. The study was carried out at MILCO (Pvt) Ltd, Digana.

The amount of sediment for each product was quantified using oven drying method. In order to choose a stabilizer, trials were carried out using Carrageenan, Sodium citrate and a combination of Carrageenan and Sodium citrate to reduce the amount of sediment in in – container sterilized milk. Finally a suitable amount of the stabilizer- “Carrageenan” was estimated. It was 0.01%.

Three in-container sterilized milk samples were prepared by changing the level of chocolate liquid as 90%, 60%, 30% and cocoa powder as 10%, 40%, 70%, for each sample respectively and level of Carrageenan was 0.01% for each, while keeping the other ingredients constant. Three pasteurized milk samples were prepared by changing the level of chocolate liquid as 20%, 40%, 60% and cocoa powder as 80%, 60%, 40% while keeping the other ingredients constant. Sensory evaluation was carried out for three recipes formulated for the above two products, with a panel consisting thirty non-trained panelists to select best sample.

Analyzed results of the final product in-container sterilized milk were 2.0%of fat, 0.15 acidity, and 17.6% of total solids Analyzed results of the final product of pasteurized milk were 2.1%of fat, 0.15 acidity, 17.8% total solids. The observed total colony count for pasteurized milk was 30000 per /ml and methylene blue dye reduction was observed after 4 hours.

The data obtained by the sensory evaluation were statistically analyzed using Friedman test at 5%significance level. According to the results the best sample of in-container sterilized milk was selected as the one containing chocolate liquid 30% and cocoa powder 70%,with a level of Carrageenan at 0.01% with other ingredients remaining constant. According to the amount of sedimentation above sample was the best one. The sensory data obtained for pasteurized milk samples were statistically analyzed using the same procedure and the sample containing 20% chocolate liquid and 80% cocoa powder was selected as the best one.According to the product specification Carrageenan 0.01% was selected as suitable amount to effectively reduce the sediment in in-container sterilized milk. The reduction in sediment achieved was approximately 65%.