

ABSTRACT

Today food is considered much for its goodness for health, hygiene and nutrient content in addition to its taste. Heart health spread contains a healthy balance of the right type of fat (Omega 3 and Omega 6). This spread is rich in Vitamin E. Now Unilever interests to find an appropriate method of transporting heart health spread without affecting its sensory and quality parameters of the spread and its packaging material along with transit chain. Preferred route is sharing with the ice cream cold chain to have more foreign investment. Overall objective is to explore the opportunities to send heart health spread through cold chain under frozen condition, using the freezer test. Frozen samples were compared with refrigerated samples which were taken as a reference. Initial quality characteristics such as water droplet size of spread emulsion were measured. Initially physical inspection was carried out to identify cracks or damages present.

In each sample set physical (water droplet size in emulsion) and sensory parameters were checked and the characteristics of packaging material were also tested by drop test, physical inspection, and stacking density. This evaluation was done in once a week for a one month of storage duration. According to the results of the drop test, flexibility of packaging material in frozen samples becomes less than the refrigerated samples as they cracked easily. According to results of droplet measurements, water droplet size of frozen sample have not been changed with compared to the refrigerated samples but after 2 week, 3 week and 1 month of storage there was a small systematic deviation between the measured data points and the calculated curve but this deviation is not accounted as loosing of appropriate quality. According to above results tubs may not damaged during transportation due to stacking density. Wilcoxon sign rank test was used to analyze sensory results. Among the checked parameters, spreadability was having a smaller p value and therefore spreadability of frozen samples has been deviated from refrigerated samples. Hence final conclusion is heart health spread can be transported through cold chain towards foreign countries without significant changes in their sensory parameters except spreadability but an alternative packaging material should be used instead of poly propylene tubs to minimize the loss of quality in terms of packaging integrity.