

Development of Frozen Yoghurt Incorporating Mango (*Mangifera indica*) Var. Alphonso

U.A.H.N.K Gunaseela¹, H.A.P.W. Hettiarachchi², T. Sandaruwan³

^{1,2}Department of Biosystems Technology, Faculty of Technology, South Eastern University of Sri Lanka

³Chello Dairy Product (pvt) ltd, Godakawela, Rathnapuri

¹nayomi97kawshalya@gmail.com, ²pradeepa76@seu.ac.lk, ³thushara@chellodairy.com

Abstract

Frozen yogurt is a frozen product containing the same basic ingredients as ice cream, but contains live bacterial cultures. Mango fruit are rich in nutrients as carbohydrates, fatty acids, vitamins, and minerals as well as non-nutrient compounds including organic acids, dietary fiber, polyphenols and carotenoids. Pairing frozen yoghurt with mango var. *Alphonso*, improve tasty and nutritious qualities, and opens up exciting possibilities. The main objective of this study was to develop a mango (var. *Alphonso*) incorporated frozen yogurt as a healthier substitute for ice cream, with specific focuses on establishing a preparation methodology, assessing sensory acceptability, and evaluating storage stability. Three treatments with varying percentage of mango pulp and yoghurt 50:50(T1), 75:25(T2), 25:75(T3) was used to prepare the samples. Treatment T3 has selected as the best sample based on five-point hedonic scale of sensory evaluation. The final product prepared and stored at $-10 \pm 1^{\circ}\text{C}$. Then evaluated frozen yoghurt through physical, chemical, microbial properties and assessing acceptability and stability weekly during storage period. After the 5 weeks mean of pH was 4.19 ± 0.029 . Longitudinal assessment indicated a progressive decrease in pH over the storage period, indicative of ongoing fermentation processes. Mean of brix, overrun percentage and weight were 23.5, 0.20 ± 0.01 and 66.62 ± 0.34 respectively. Sensory evaluation consistently yielded positive scores, particularly highlighting taste/ flavor, appearance/color, and texture/mouth feel. Microbial analysis confirmed the product's safety, with no detection of coliform, yeast, or mold. The Alphonso mango frozen yogurt as a promising and healthy alternative to ice cream, possessing favorable attributes and considerable market potential.

Keywords: *Alphonso Mango, Brix value, Frozen Yogurt, Healthier Alternative*