

DEVELOPMENT OF BEVERAGE USING STERILIZED MILK AND RICE FLOUR THAT IS APPROPRIATE FOR THE LOCAL ECONOMY



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ABSTRACT

The present study was designed to develop an affordable, shelf stable beverage using sterilized milk and locally sourced rice flour in order to strengthen the national economy of Sri Lanka through import substitution and addition of value locally. This research tries to link technical feasibility with socio economic application by developing a nutritional product using local agriculture. Five different formulations (T1–T5) containing milk and rice flour in different proportions (50–90% and 0–1.4%, respectively) were formulated, sterilized in a retort and tested extensively. Proximate analysis showed that Treatment T4 (89% milk, 1.4% rice flour) had the best nutritional profile, with the highest protein (2.38%), fat (3.70%) and energy (79.8 kcal/100g) contents, which was justified by the concentration effects during heating. Again, the addition of rice flour in T4 was important to improve its texture and stability, a fact supported by the poorer sensory scores of rice free T5 treatment. Nine point hedonic sensory evaluation by 40 panelists followed and gave T4 the highest score for texture, at 8.5, taste at 8.1 and overall acceptability at 8.7. Microbiological examinations confirmed that all samples were safe and shelf stable, as the aerobic plate, yeast and mold counts were well within acceptable limits for sterilized products. The results showed that T4 is a sensorially acceptable, nutritious and microbiologically stable product. Its production involves low cost, locally available raw materials, it does not need refrigeration and promotes the local dairy and rice industries. This beverage offers a feasible, sustainable business model to decrease import reliance, reduce postharvest losses and offer a healthy, affordable food product for the Sri Lankan market.

Key words: Beverage Development, Local Economy, Proximate Analysis, Rice Flour, Sensory Evaluation, Shelf Stable, Sri Lanka, Sterilized Milk

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