

ABSTRACT

Lactose-free milk provides a great alternative for people with lactose intolerance. The present study developed lactose-free milk using soymilk as the milk base to avoid presence of lactose. However, the use of soymilk has some drawbacks with regards to nutritional content and sensory properties, as it is not as acceptable as dairy milk. Hence, this study aims to develop lactose-free milk fortified with plant-based protein, with comparable nutritional quality and sensorial properties to that of dairy milk. Two lactose-free milk (LFM) formulas were developed with different soy protein concentrations (LFM 1 = 10%; LFM 2 = 13.75%). The target protein and fat were 8-9 grams and 3-4 grams per serving, respectively. Nutrient analysis (proximate and lactose analysis) was then carried out to assess the nutrient composition, while sensory evaluation using Check-All-That-Apply (CATA) and acceptance test concurrently, was carried out using 66 consumer panelists to assess the characteristics and acceptability of the products. Both LFM 1 & 2 were compared to dairy milk. It was found that the nutrient content (protein and fat) of LFM 1 & 2 met the targeted amount, and that lactose was not detected. Moreover, the nutrient composition of both LFMs were comparable to dairy milk. Results from CATA and acceptance test were able to explain the characteristics of both LFMs. Additionally, LFM 1 was found to have similar acceptability to dairy milk, hence it could be brought up to production trial. Further study is needed to examine whether the use of CATA and acceptance test concurrently is also effective to be used in other products, especially for new product development.