Creation of A Dairy-Free and Lactose-Free Beverage: Harnessing the Richness of Coconut Milk Infused with Roasted Barley

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Abstract

A well-liked and adaptable non-dairy substitute that has become very popular in recent years is coconut milk beverages. The main objective of this study is to optimize the roasting process of barley and formulate a dairy-free and lactose-free beverage. Ready-to-serve beverages were prepared with the incorporation of roasted barley. To the mixture in different ratios and roasted barley powder and other ingredients, including xanthan gum for stabilization, sugar, coco powder and chocolate flavour were added. The mixture was then filled into clean, sterilized glass bottles and sealed manually. Afterward, sealed bottles were sterilized. Prepared samples were kept at room temperature (29 ºC) for a one-month period and analysed. The produced beverages were evaluated for physiochemical and sensory parameters, yeast and mold count and total plate count stored once a week using the sensory evaluation for different treatments was carried out using 9-point hedonic scale testing for taste, texture, colour, odour, flavour, and overall acceptability. The data were analysed using SPSS software at the 0.05 significant level. No significant quality changes of beverage samples were observed during storage. Based on the sensory evaluation, the beverage at 230^0C, 40 min and 228g:6g had the highest mean score for overall acceptability and there was no microbial count detected at one-month storage. The study concludes that the optimized roasting process of barley, combined with specific ratios of coconut milk, results in a stable, nutritionally rich, and well-accepted dairy-free beverage with sustained quality over a one-month storage period.

Keywords: Beverage, Dairy-free, Lactose-free, Physiochemical analysis, Sensory evaluation, Yeast and mold count