DEVELOPMENT AND QUALITY IMPROVEMENT OF STARTER-CULTURE FERMENTED COCONUT YOGHURT

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Dairy-free yoghurt holds a considerable market share; thus, a starter culture fermented non-dairy yoghurt was developed using commercially available, homogenised, and pasteurized coconut milk. Coconut milk, vegan starter culture, sugar, stabilizers (Calcium-activated pectin, Agar), and antioxidants (E 202) were used as the main ingredients. According to the processing protocol, coconut milk was heated up to 88°C, and sugar was added. While on cooling, stabilizers and culture were added at 60°C and 44°C, respectively. Three yoghurts formulations were prepared by changing the stabilizer concentration (0.4, 0.5, and 0.6 (w/v)). The mixture was incubated at 44°C for 12 h and refrigerated (4±1°C) for 6 h. The physicochemical properties of the final product were assessed using proximate composition, pH, colour, titratable acidity, and syneresis. A microbiological analysis was used to evaluate the shelf stability of the final product in refrigerated conditions (4±1°C) for 1, 7, and 14 days. The best appealing yoghurt was screened using a sensory evaluation. The yoghurt formulation supplemented with 0.5 w/v stabilizers was superior ($p<0.05$) in sensory qualities. The final formulation revealed 73.56±0.23% of moisture (wet basis), 0.39±0.04% of crude protein, 17.84±1.01% of crude fat, and 0.39±0.01% of ash. The pH was recorded as 6.76±0.18. Further, *L**, *a**, *b** values were 77.33±3.89, 1.13±0.32, and 5.2±1.56, respectively. The total plate count was below 250 cfu g^{-1} even after a 14-day storage period. The value for syneresis was also zero after a 14-day storage period. The study confirmed that a new avenue is possible for developing a non-dairy yoghurt using coconut milk with a shelf life of 14 days in refrigerated condition (4±1°C) without deteriorating organoleptic properties.

Keywords: Coconut milk, Non-dairy, Shelf life, Syneresis, Vegan