ABSTRACT

Chintya Aisyah (03420100056)

THE UTILIZATION OF BAMBARA GROUNDNUT PEEL (Vigna subterranea (L.) Verdc) AS PROBIOTIC BEVERAGE (xiv + 75 pages, 11 figures, 15 tables, 16 appendices)

Bambara groundnut is one of cultivars that easily grows in extreme condition such as Africa and also easily grows in Indonesia. Only the seed of the Bambara groundnut that is utilized by Indonesian people, but the peel which is the waste product is rarely utilized. Bambara groundnut contains crude fiber that is potential as a source of fiber in food and beverage products. The objectives of the research were to determine the best formulation of Bambara groundnut peel fermented beverage, and to determine the shelf life of the product. The best formulation was determined by the concentration of the addition skim milk (0%, 2.5% and 5%) and the ratio between Bambara groundnut peel and water (1:3, 1:4 and 1:5). The result showed that the ratio 1:3, 1:4 and 1:5 with 5% addition of skim milk had the highest amount of lactic acid bacteria (9.50 ± 0.14 log CFU/mL) and total titratable acidity (0.69 ± 0.03 %). Moreover, the pH and the nutrition value was suitable for standard. The examinations of the best products shelf life were conducted under refrigeration condition in 4 weeks. The products were tested once a week. All of the products in general has increased in total lactic acid bacteria and total titratable acidity, and decreased in pH value. The products were safe from coliform contaminations. The ratio of Bambara groundnut peel with the addition of water 1:3 and the 5% addition of skim milk turned out to be the best product with 3 weeks of shelf life without any preservatives added.

Keywords: Bambara groundnut peel, fermented milk, Lactobacillus casei, shelf life, skim milk