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Shelf life evaluation of refrigerated modified peanut beverage, in different packaging materials

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Peanut (*Arachis hypogaea*) is one of the low cost major pulses which can be used as an substitute for such as animal and dairy products, which are highly priced and unaffordable to a higher percentage of the population in developing countries. Peanut milk is a good source of fat (1.5%) and protein (3.03%) and it is free from cholesterol. Since fat oxidation and microbial spoilage decrease the shelf life of the beverage, optimal storage conditions and different packaging materials have to be tested. Therefore this study was carried out to determine the shelf life of the peanut beverage for different packaging materials under the refrigeration (4^0C) condition. Peanut beverage was prepared based on the method developed by Kularathne *et* al. (2008) and it was further developed by adding strawberry and mango flavors to mask the beany flavor. According to the results of the five points hedonic scale acceptance test strawberry was the most acceptable flavor for the peanut beverage. Strawberry flavored sample was packed separately in glass bottles, PET bottles and vacuum packed in aluminium pouches. Shelf life was evaluated by measuring titrable acidity, peroxide value, total plate count and sensory analysis. Titrable acidity of the beverage in all the packaging materials was acceptable up to three weeks. Beverage packed in PET bottles and aluminium pouches showed a drastic increase in titrable acidity after three weeks while that in glass bottle remained unchanged. Peroxide values were zero and no significant counts of microbes were reported in beverage packed in all three materials up to three weeks. After the fourth week, microbial count was momentous but beverage in glass bottle had lower amount of microbial count ($3.75x10^5$) than the other two. Results of the simple ranking test expressed that beverage in different packaging materials do not have any considerable difference until three weeks but after that, beverage packed in glass bottles was the most acceptable.

Keywords: Peanut beverage, Shelf life, Glass bottles, PET bottles, Aluminium pouches.

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