

C727177 : MAJOR FOODTECHNOLOGY

KEY WORD: CARBONATED BEVERAGE / CARBONATED MILK / SKIM MILK

CHUTIMA SILPRACHAWONG : FORTIFICATION OF SKIM MILK IN CARBONATED BEVERAGE. THESIS ADVISOR : ASSIST. PROF. SUWANNA SUBHIMAROS, Dr.Ing.

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The formulation and manufacture of carbonated beverage fortified with skim milk in crowned cap glass bottle were studied. Firstly, the effect of total soluble solid (TSS) and pressure on the volume of dissolved CO₂ in final product was carried out by varying TSS to 0,10,15 and 20°Brix and varying to pressure 60,80,100 lb/in². The result showed that at 100 lb/in², TSS 12-15 °Brix, the product had the highest dissolved CO₂. Developing the formulate by using sugar at 12 and 15 °Brix, pH of the syrup 5.0,5.4 and 5.7, percent skim milk 10,20 and 30 and evaluating stability, color and organoleptic test resulted in sample containing 15°Brix, pH 5.0 and 30% skim milk had the highest average scores of each attributes significantly different (p≤0.05). Further development was done at pH syrup 4.7, 30%,40% and 50% skim milk and evaluating with ranking test resulted in sample containing pH 4.7 and 40% skim milk had the highest average scores significantly different (p≤0.05). Then increasing pH until it made the destability in final product resulted in sample containing 3.1pH syrup had an stability condition and had the highest average scores significantly different (p≤0.05). Classifying the odor of this product resulted in sample with orange and pineapple odor had the high average scores respectively significantly different (p≤0.05). After that using β-carotene and riboflavin for fortifying color found that 0.5 g /280 ml. was suitable of each odor for this product.

Studying the effect of potassium sorbate and time on quality of product by varying 0,500,1000 and 2000 ppm.potassium sorbate at 4 °C. The result showed that pH, Vol.CO₂ and color were increasing significantly different (p≤0.05) and co-evaluating of sensory and microorganisms showed that shelflife was 12 days at 1000 ppm.potassium sorbate. The classification of nutrition value compared with general carbonated beverage resulted that the carbonated beverage fortified with skim milk didn't have only the same calories but also good source of nutrition such as protein, calcium, niacin and other trace elements more than general carbonated beverage.

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