UTILIZATION OF SUGAR PALM (*Arenga pinnata*) SYRUP IN TROPICAL FRUIT COCKTAIL PRODUCTION

THESIS

BON MARIL P. GARCIA

College of Agriculture, Forestry, Environment
and Natural Resources
CAVITE STATE UNIVERSITY
Indang, Cavite

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ABSTRACT

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The potential of sugar palm *(Arena pinnata)* syrup in tropical fruit cocktail production was evaluated at the Food Processing Laboratory, Institute of Food Science and Technology, Cavite State University, from January to March 2014. Specifically, the study aimed to develop a process in utilizing sugar palm syrup in tropical fruit cocktail production; characterize the sugar palm syrup used in tropical fruit cocktail in terms of sensory properties: color, cloudiness and general acceptability; characterize tropical fruit cocktail with sugar palm syrup in terms of sensory properties: color, aroma, texture, flavor and general acceptability; determine the physico-chemical properties of tropical fruit cocktail in sugar palm syrup: pH, total soluble solids and titratable acidity; determine the microbial properties of tropical fruit cocktail in sugar palm syrup; compare consumer acceptability of tropical fruit cocktail in sugar palm syrup with that in cane syrup; and determine the production cost of tropical fruit cocktail.

Processing of tropical fruit cocktail using sugar palm syrup required 15 min of processing time. After preparing the sugar palm syrup, fruits were washed, peeled and cut into cubes. After transferring the fruits and syrup (75 percent:25 percent by volume ratio)

into the container, it was processed in a pressure cooker for 15 minutes. It was then cooled, sealed and stored. The finished product has a pH value of 3.69, has total soluble solids of 32 °Brix and titratable acidity of 2.12 percent. The processing method used was proven in sterile condition as indicated by <1 cfu/ml microbial count after two weeks of storage. The syrup used was rated with a moderately acceptable color and flavor. It was slightly turbid and was rated acceptable for its general acceptability. The color, aroma and flavor of fruit cocktail were moderately acceptable while the texture was acceptable. It was also slightly sweet and slightly sour. Its general acceptability was acceptable. One jar of fruit cocktail in sugar palm syrup could be sold for P105.00 from 3 kg raw materials having a return of investment (ROI) of 14.04% versus 4.80 % ROI in processing tropical fruit cocktail using cane syrup.

Generally, sugar palm syrup could be utilized as a potential substitute for cane sugar or other packing medium used in the production of tropical fruit cocktail.

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Bon Marie P. Garcia

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INTRODUCTION

The sap of sugar palm, an indigenous plant in upland Cavite locally known as "kaong" or "irok" that has been processed into syrup was proven to possess different nutritional properties beneficial to our health (Alilam, 2012). More importantly, it was found that it has a low glycemic index compared to cane syrup (Lapitan and Dimero, 2013). Glycemic index, or GI, measures how a carbohydrate-containing food raises the blood sugar and could help diabetics to plan their meal. A food with high GI raises blood glucose more than medium or low GI foods (Diabetes Organization, n.d.).

Canned tropical fruit cocktail is one of the commercially available fruit preserves which utilize syrup in its production. It is a mixture of different fruits which may be fresh, frozen or canned, packed in a suitable packing medium with the specific °Brix and is processed by heating in an appropriate manner after being sealed in a container so as to prevent spoilage (CAC, 1981).