

**CALAMANSI (*Citrofortunella microcarpa*) CONCENTRATE WITH SUGAR
PALM (*Arenga pinnata*) SYRUP AS SWEETENER**

An Undergraduate Thesis
submitted to the Faculty of the
College of Agriculture, Food, Environment and Natural Resources
Cavite State University
Indang, Cavite

In partial fulfillment
of the requirements for the degree
Bachelor of Science in Food Technology



00077020

Calamansi (Citrofortunella microcarpa)
concentrate with sugar palm (*Arenga*
664.240C71 2018
T-7602

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May 2017

ABSTRACT

COLONGON, WINNIE JOY GERPACIO. Calamansi (*Citrofortunella microcarpa*) Concentrate With Sugar Palm (*Arenga pinnata*) Syrup as Sweetener. Undergraduate Thesis. Bachelor of Science in Food Technology. Cavite State University, Indang, Cavite. May 2017. Adviser: Aitee Janelle E. Reterta, MSc.

This study was conducted to utilize sugar palm syrup in the production of calamansi concentrate. Specifically, it aimed to; describe the processing technology; analyze the physico-chemical properties and proximate properties of calamansi concentrate; identify the sensory properties, consumer acceptability of calamansi concentrate with sugar palm syrup and analyze the cost for producing calamansi concentrate with sugar palm heavy syrup.

The processing technology used in the study was adopted by the researcher from de Leon and Guzman. (1998), juice was extracted with the use of cheese cloth and mixed with sugar. The resulting mixture was heated for 30 minutes at 75°C and pasteurized for 15 minutes at 75°C. The formulation of the most acceptable treatment is 500ml calamansi extract and 613ml sugar palm syrup with 63°B.

Based on physico-chemical properties of calamansi concentrate such as pH, TA, TSS control with cane sugar (T0) has a pH of 3.6, 4.8% TA and 60°B. Calamansi concentrate with 409ml sugar palm syrup (T1) has a pH of 3.6, 3.2% TA and TSS of 61°B. Calamansi concentrate with 613ml sugar palm syrup (T2) has a pH of 3.5, 3.2% TA and TSS of 61°B. (T3) with 817ml sugar palm syrup has a pH of 3.2, 2.3 % TA and TSS of 63°B.

Based on the proximate analysis, calamansi concentrate with 613ml sugar palm syrup contains 32.43% moisture, 1.31% fat, 1.25% protein, 0.33% ash and 64.68% carbohydrates.

Sensory properties of the product were evaluated by 10 semi-trained panelists. No significant differences were observed in terms of aroma, sweetness, texture, cloudiness, off-flavor, off-odor and general acceptability. In terms of color, flavor and sourness the samples were significantly different due to the amount of sugar palm syrup it affected the color from yellow (T3), deep yellow (T2) to yellow ochre (T1); sourness from slightly sour (T3) to moderately sour (T1, T2), treatment 2 from moderately perceptible flavor to perceptible flavor (T1, T3), such differences, however did not affect the general acceptability as the calamansi concentrate were evaluated to be equally moderately acceptable.

Consumer acceptability of calamansi concentrate with 613ml sugar palm syrup as evaluated by 100 consumer type panelists. Majority of the consumers, 60% considered the calamansi concentrate as highly acceptable. Thirty two percent 32% of the consumers rated the samples as moderately acceptable and 8% rated the calamansi concentrate as acceptable.

Processing of 8 kg calamansi concentrate with cane sugar and sugar palm syrup required P848 material cost with 3L total yield.

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