

UTILIZATION OF SUGAR PALM (*Arenga pinnata*) SYRUP AS  
SWEETENER IN SOURSOP CONCENTRATE

THESIS

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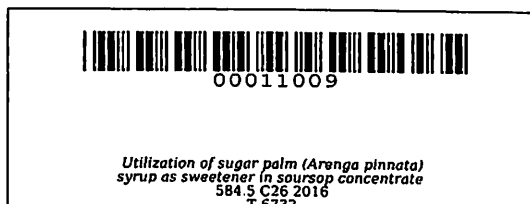
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# **UTILIZATION OF SUGAR PALM (*Arenga pinnata*) SYRUP AS SWEETENER IN SOURSOP CONCENTRATE**

Undergraduate Thesis  
Submitted to the Faculty of the  
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Bachelor of Science in Food Technology



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## **ABSTRACT**

**CASILLA, ROY ANGELO H. Utilization of Sugar Palm (*Arenga pinnata*) Syrup as Sweetener in Soursop Concentrate.** Undergraduate Thesis. Bachelor of Science in Food Technology. Cavite State University, Indang, Cavite. April 2016. Adviser: Mrs. Aitee Janelle E. Reterta, MS.

A study was conducted to develop a new product with the utilization of sugar palm syrup. Sugar palm syrup was utilized as sweetener in soursop concentrate. Specifically, this study aimed to develop a processing technology for the utilization of sugar palm syrup as sweetener in soursop concentrate, determine physico-chemical properties of soursop concentrate with sugar palm syrup, determine the product's sensory and general acceptability, and analyze cost and return in the production of soursop concentrate.

Approximately 12 liters of sugar palm sap was cooked to produce 2 liters of heavy syrup and 3 kilograms of fully ripe soursop fruit was selected for the production of concentrate. Sugar palm syrup used was heavy syrup with a total soluble solid (TSS) of 65° Brix, it was added into three treatments, T1 - 275 ml, T2 - 550 ml, and for T3 - 825 ml per recipe of soursop concentrate while T0, 375 grams of sugar was added to 1 L soursop juice which served as the control. Physico-chemical properties of each sample was determined through different tests and these are; TSS, pH, %TA and, viscosity.

Results of physico-chemical shows that all properties are within the standard except for viscosity of T3 (825 ml syrup) because it has the highest amount of syrup (liquid portion) compared to the flesh (solid portion). Based on the result of sensory evaluation of laboratory panelists, the statistical analysis implies that the soursop concentrate with 275 ml sugar palm heavy syrup was the most acceptable among the

treatments. A total of 100 respondents from Cavite State University (CvSU) Main Campus, Indang, Cavite and Bgy. Munting Ilog, Silang, Cavite evaluated and rated the product in terms of the degree of acceptability. Based on the data gathered majority of the respondents (55 %) graded the soursop concentrate with sugar palm syrup as highly acceptable.

Production cost of soursop concentrate with sugar palm syrup was higher than the control due to the sweetener used. It has a higher cost because sugar palm sap needed several hours of cooking to become syrup, and needed large amount of sap to produce heavy syrup. However, kaong syrup has low glycemic index which can make the soursop concentrate with sugar palm syrup be considered as health food.



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# **UTILIZATION OF SUGAR PALM (*Arenga pinnata*) SYRUP AS SWEETENER IN SOURSOP CONCENTRATE**

**Roy Angelo H. Casilla**

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Undergraduate Thesis submitted to the faculty of the Institute of Food Science and Technology, College of Agriculture Food, Environment and Natural Resources, Cavite State University, Indang Cavite, in partial fulfillment of the requirements for the degree of Bachelor of Science in Food Technology with contribution number \_\_\_\_\_. Prepared under the supervision of Mrs. Aitee Janelle E. Reterta, MS.

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## **INTRODUCTION**

Sugar palm (*Arenga pinnata*) is noted as one of the world most economically important palms products of human consumption. Recently developed products from sugar palm include syrup (Romasanta, 2010), vinegar (Cortez, 2010) and sugar (Ramos, 2011). Sugar palm is categorized as a low glycemic index food (DOST, 2009). Demand for this products will likely increase considering that people are becoming more health conscious. The freshly produced sap from sugar palm trees contains sugar, protein, fat, minerals, calcium, phosphorus, iron, vitamin C and B<sub>1</sub> (Romera, 1968). The high sugar content of sugar palm sap can provide enough sweetness for concentrate production.

Concentrated fruit juice was directly expressed by mechanical extraction processes, water has been physically removed in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit. In the production of the juice that is to be concentrated, suitable processes are used and may be combined with simultaneous diffusion of the pulp cells or