MICROORGANISMS PRESENT IN FRESH SUGAR PALM (*Arenga pinnata*) SAP

THESIS

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ABSTRACT

SUAREZ, ELOISA T. Microorganisms Present in Fresh Sugar Palm (*Arenga pinnata)* Sap. Undergraduate Thesis. Bachelor of Science in Food Technology. Cavite State University, Indang Cavite. April 2015. Adviser: Dr. Fe N. Dimero.

A study was conducted to determine microbial count of sugar palm sap collected by aseptic technique and by traditional method and to classify microorganisms present in the sap.

Microbial analysis using Plate Count Agar revealed no microbial count in sap collected by microbial analysis using PDA as a culturing media; it did not give any fungal growth in aseptic technique. Sap collected by traditional method gave a bacterial count of $5x10^{10}$ cfu/ml in PCA and fungal count of $2.99x10^{10}$ cfu/ml in PDA.

Morphological characteristics and colony growth of bacterial colonies indicated probable presence of *Leuconostoc, Pediococcus* and *Lactobacillus* for gram negative bacteria and *Bacillus cereus, Salmonella* and *Pseudomonas* for gram negative bacteria.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

MICROORGANISMS PRESENT IN FRESH SUGAR PALM (*Arenga Pinnata*) SAP

Eloisa T. Suarez

An undergraduate thesis manuscript submitted to the faculty of the Institute of Food Science and Technology, College of Agriculture, Forestry, 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 No. 2014-2015-09. Prepared under the supervision of Dr. Fe N. Dimero

INTRODUCTION

The palm is considered the oldest flowering plant in the world (Redhead, 1989). Sweet sap is collected from cut flower stalks and boiled down into table sugar or fermented into an alcoholic beverage (Paul, 2002). The sweet sap is used as a favorite drink called *tuba*. As in coconut sap, sugar palm sap can be processed into vinegar, syrup, brown sugar, nectar and crystals.

The fresh sap collected from sugar palm contains 10-13 % sugar which is composed mainly of sucrose. When fresh sap from sugar is incubated, significant amounts of glucose and fructose and some amounts of oligosaccharides are generated by the action of microorganisms through the process of fermentation. The high sugar content of the sugar palm sap makes it versatile raw material in the preparation of several fermented products. The collected sap quickly ferments its sugar because of the