DEVELOPMENT OF INSTANT ALOE VERA (*Aloe barbadensis* Miller) JUICE WITH SUGAR PALM SAP

THESIS

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ABSTRACT

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A study entitled "Development of Instant Aloe vera (*Aloe Barbadensis Miller*) Juice with Sugar Palm Sap" was conducted at the Food Processing Laboratory from January 2015 to March 2015. Specifically, it aimed to determine the processing technology for aloe vera juice with sugar palm sap; determine the sugar palm sap requirement of aloe vera juice; determine the physico-chemical properties of aloe vera juice with sugar palm sap; evaluate sensory properties of aloe vera juice with sugar palm sap; determine the consumer's acceptance of aloe vera juice with sugar palm sap; and determine the production cost of instant aloe vera juice with sugar palm sap.

The processing technology for aloe vera juice with sugar palm sap includes procurement of raw materials, harvesting of aloe vera leaves, washing, peeling, extraction of aloe vera gel, collection of sugar palm sap, filtering, mixing, cooking, blending, sieving, packaging and storing. Different volume of sugar palm sap was used with the 300 g of aloe vera extracts, the treatments are 600 mL, 750 mL and 900 mL.

Freshly harvested sugar palm sap with initial sugar content of 10-20°Brix can produce powdered juice. It has a total soluble solid of 10°Brix, 3.5-4.7 pH and 0.46-1.0% titratable acidity.

Based on the physico-chemical properties only TSS met the standard range for juice. Instant aloe vera juice has initial sugar content of 10°Brix, pH 8.4-8.5, and 0.5-0.6% titratable acidity. The finished product has a TSS of 10°Brix, pH 8.8-8.9 and 0.1-

0.2% titratable acidity. Although the pH and % TA is not within the standard, it can still be acceptable because the product is in powdered form which is dry and not highly perishable.

Sensory properties such as color, aroma, off-odor, sweetness, flavor, off-flavor, and general acceptability were evaluated of ten laboratory panelists. Instant aloe vera juice is light brown in color, has a slightly strong aroma of aloe vera, moderately imperceptible of off-odor, moderately sweet, strong aloe vera flavour, very imperceptible in off-flavor. Its overall quality was very acceptable

Production cost of instant aloe vera juice with sugar palm sap has higher cost due to the sugar palm sap that needs continuous stirring and due to the time of longer cooking of instant aloe vera juice.

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DEVELOPMENT OF INSTANT ALOE VERA (*Aloe barbadensis Miller*) JUICE WITH SUGAR PALM SAP

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INTRODUCTION

Aloe vera (*Aloe Barbadensis Miller*), commonly known as "Barbados" or "Curaçao Aloe", is an medicinal value for several thousand years. (Grundmann, 2012) The aloe vera gel contains many vitamins including the important antioxidant vitamins A, C and E. Vitamin B1 (thiamine), niacin, Vitamin B2 (riboflavin), Vitamin B12, choline and folic acid are also present(Rajeswari et al. 2012). Aloe vera gel derived from the leaf pulp of the plant has become a big industry worldwide due to its application in the food industry. It is utilized in functional foods especially for the preparation of health drinks with no laxative effects. It is also used in other food products including milk, ice cream, confectionery, etc. Aloe vera gel is also used as flavoring component and preservative in some foods.

Sugar palm *(Arenga pinnata)* popularly known as kaong in the Philippines. It is a large solitary palm that is found to be naturally occurring and widely distributed at low and medium altitudes, in ravines along streams, and in areas under semi-cultivation