# VARIABILITY AND CORRELATION ANALYSIS OF SOME FRUIT CHARACTERS OF SUGAR PALM (*Arenga pinnata*) IN UPLAND CAVITE

THESIS


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# ABSTRACT

**ANGELIQUE M. NOBLE** and **DELAIZA S. RABANES, Variability and Correlation Analysis of Some Fruit Characters of Sugar Palm *(Arenga pinnata)* in Upland Cavite.** Undergraduate Thesis. Bachelor of Science in Agriculture Major in Crop Science, Cavite State University, Indang, Cavite. April 2015. Adviser: Analita dM. Magsino, PhD

This study generally aimed to evaluate the fruit variability of sugar palm or *kaong (Arenga pinnata)* in upland Cavite, Philippines. Specifically, it aimed to determine the fruit characters of sugar palm; evaluate the correlation among the various fruit characters of sugar palm and select fruit characters which are relevant in the future selection and improvement works in sugar palm.

Eleven fruit characters of 25 sugar palm accessions from Indang, Bailen, Magallanes, Amadeo and Mendez were measured and counted. The variability in all characters was determined using Shannon-Weaver Diversity Index. Correlation coefficients of selected character combination were computed following PROC CORR (SAS System, 1985).

Wide variability was found in fruit weight, fruit length, fruit width, number of fruits per cluster, length of the cluster, aborted fruit per cluster, nut/meat yield and edible portion. Conversely, narrow variability was found in number of nuts per fruit and fruit shape.

Correlations of majority of fruit character combinations were highly significant. Fruit weight and fruit length, fruit weight and fruit width, fruit length and fruit width, and nut/meat yield and edible portion were highly correlated. Number of fruits per cluster and percent aborted fruit per cluster were also highly but negatively correlated. Moderately

positive correlations were found in number of fruits per cluster and length of the cluster and fruit shape and number of nuts per fruit. Weak positive correlations were found in fruit weight and number of nuts per fruit, fruit length and number of nuts per fruit, fruit width and number of nuts per fruit, fruit shape and fruit weight, fruit shape and fruit length, and fruit shape and fruit width. Length of the cluster and percent aborted fruit per cluster had no significant correlation.

The wide variability in fruit characters existing in the natural population of sugar palm in upland Cavite can be exploited in selection and breeding programs. In particular, length of the cluster, fruit weight, and nut yield are the important characters for handling and evaluation of as many sugar palm genotypes as possible.

## TABLE OF CONTENTS

## LIST OF TABLES

## LIST OF APPENDIX TABLES

## LIST OF APPENDIX FIGURES

# VARIABILITY AND CORRELATION ANALYSIS OF SOME FRUIT CHARACTERS OF SUGAR PALM (*Arenga pinnata*) IN UPLAND CAVITE

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## INTRODUCTION

Sugar palm or *kaong* is found growing abundantly throughout the country in natural stands. It is a shade loving species which thrives well along the side of streams, riverbanks and ravines (Florido & De Mesa, 2003). It also can be found in virgin forests as its fruits are occasionally scattered by fruit bats and wild animals like the Southern Luzon slender-tailed cloud rat (*Phloemys cumingi*), palm civet (*Paradoxuru hermaphroditus*) and oriental civet (*Vivera tangalunga*).

In the province of Cavite, *kaong* is abundantly found although its population is steadily declining through the years. Its natural regeneration has been hindered by several environmental factors. Indang has the most number of plants growing in natural stands.

Large variability in phenotypic characters exists in sugar palm brought about by seed propagation and open pollination. Evaluation of such wide differences among palms