

**ANALYSIS OF COMPOUND IN GARCINIA MANGOSTANA PERICARP AND  
CARICA PAPAYA LEAF**

**SYAHIRAH BINTI MASRI**

**This report is submit in partial fulfillment of the requirements needed for the award of  
Bachelor in Chemical and Bioprocess Engineering (Hons)**

**FACULTY OF CHEMICAL ENGINEERING  
UNIVERSITI TEKNOLOGI MARA**

**2016**

## **ACKNOWLEDGEMENT**

I would like to express my deepest appreciation to my supervisor Sir Sufian bin So'aib who continuously supports my research project with her patience, motivation, and vast knowledge. He always guides me all the time in terms of my research and writing thesis.

I would like to say my thanks to my fellow friends who always supporting me from the back and for the sleepless night that we were working together before deadlines. Finally yet importantly, my thanks will goes to my family, my parents and my siblings who always supporting me spiritually while I went through thick and thin in writing this thesis.

## ABSTRACT

This study is focusing on the analysis of compound in *Garcinia Mangostana* and *Carica Papaya* leaves during the fermentation. Fresh *Carica Papaya* (CP) leaf was collected from a local farm in Muar, Johor. *Garcinia Mangostana* (GM) pericarp was purchased from a local market in Kelantan. Both were ground fermented anerobically by endogenous culture in separate bioreactor for three months. The collected fruit were fermented about 88days to studies the presence of compound. The presence of compound was studies using the sample from day 0th, 10th and 88th using gas chromatography GC-MS and FT-IR analyzer. The raw sample of *G. Mangostana* and *C. Papaya* leaves were extracted in a Soxhlet apparatus with 200ml of 70% aqueous methanol. The quantitative analysis has shown the presence of antioxidant as the main compound, while some degrade compound such as ,1-dibutoxy-, phen-1,4-diol, 2,3-dimethyl-5-trifluoromethyl- and 3-(Dimethylamino)-7-(methylamino)phenothiazin-5-ium found from the sample.

## TABLE OF CONTENTS

DECLARATION.....	ii
SUPERVISOR’S CERTIFICATION.....	iii
ACKNOWLEDGEMENT.....	v
ABSTRACT.....	vi
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	ix
LIST OF FIGURE.....	x
LIST OF ABBREVIATIONS.....	xi
CHAPTER 1.....	1
INTRODUCTION .....	1
1.1 Research Background.....	1
1.2 Problem Statements.....	3
1.3 Objectives.....	3
1.4 Scopes of Study.....	3
CHAPTER 2.....	4
LITERATURE REVIEW.....	4
2.1 Introduction.....	4
2.2 Antioxidant.....	7
2.3 Xanthone.....	9

## CHAPTER ONE

### INTRODUCTION

#### 1.0 RESEARCH BACKGROUND

Worldwide, new cancer incidences over four years increased to 11% to an estimated 14.1 million cases in 2012, which equal to the population of India's largest city in Mumbai. Based on statistics released by Globoscan 2012, cancer cases are forecasted to rise by 75% and reach close to 5 million over the next two decades. This hence proves that cancer was the biggest causes of mortality worldwide, with estimated number of 8.2 million deaths in 2012. (Star, 2014)

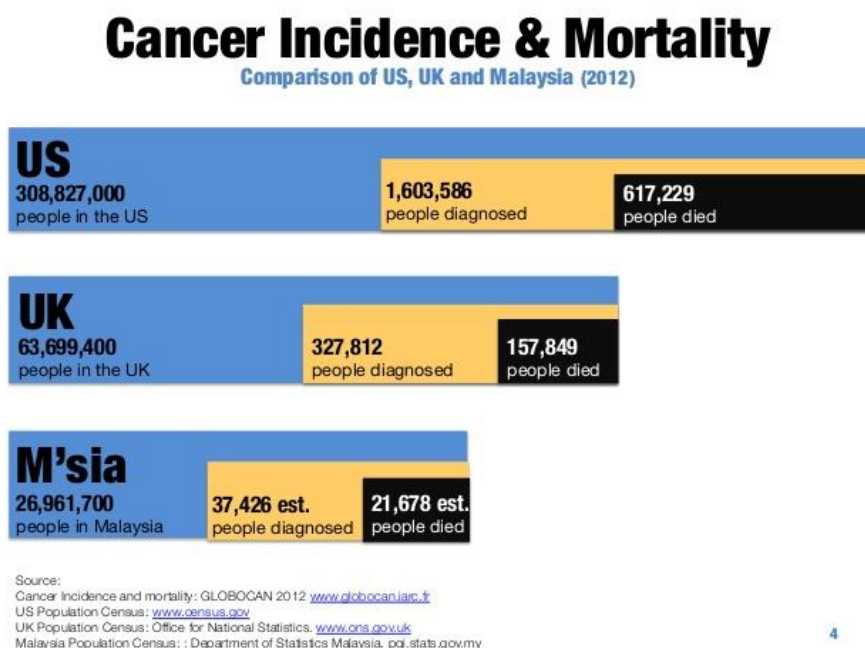


Figure 1: Comparison of Cancer Incident between US, UK and Malaysia year 2012