

**PERCENT COMPOSITION OF ESSENTIAL OIL FROM  
FRESH AND DRY LEAVES OF *Pogostemon cablin***

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## TABLE OF CONTENTS

	<b>Page</b>
<b>ACKNOWLEDGEMENTS</b>	iii
<b>TABLE OF CONTENTS</b>	iv
<b>LIST OF TABLES</b>	vi
<b>LIST OF FIGURES</b>	vii
<b>LIST OF ABBREVIATIONS</b>	viii
<b>ABSTRACT</b>	xi
<b>ABSTRAK</b>	x
<b>CHAPTER 1 INTRODUCTION</b>	
1.1 Background	1
1.2 Problem statement	3
1.3 Objectives of study	3
1.4 Significance of study	4
<b>CHAPTER 2 LITERATURE REVIEW</b>	
2.1 Introduction	5
2.2 <i>Pogostemon cablin</i> essential oil	6
2.3 Extraction of essential oil of <i>Pogostemon cablin</i>	8
2.3.1 Hydrodistillation method	9
2.3.2 Solvent-extraction method	9
2.4 Analysis of chemical composition of <i>Pogostemon cablin</i> essential oil by using Gas Chromatography Mass Spectrometry (GC-MS)	10
<b>CHAPTER 3 METHODOLOGY</b>	
3.1 Materials	14
3.1.1 Samples	14
3.1.2 Chemicals	14
3.1.3 Instruments	14
3.2 Methods	15
3.2.1 Extraction of essential oil of <i>Pogostemon cablin</i>	15
3.2.1.1 Preparation of fresh and dry leaves sample	15

## ABSTRACT

### PERCENT COMPOSITION OF ESSENTIAL OIL FROM FRESH AND DRY LEAVES OF *Pogostemon cablin*

The essential oil of *Pogostemon cablin* is mainly contributes to the perfume, cosmetics industries and pharmacological activities. The chemical composition of essential oil extracted from both fresh and dry leaves was studied using hydrodistillation and solvent-extraction methods. The area percent of chemical composition in essential oil was determined by using Gas Chromatography Mass Spectrometry (GC-MS). Five major compounds were identified including patchouli alcohol,  $\alpha$ -bulnesene,  $\alpha$ -guaiene,  $\alpha$ -patchoulene and  $\beta$ -caryophyllene in all four essential oil obtained. However, there were also other compounds present in small area percent of composition. In this study, it shows that essential oil from fresh leaves contains higher area percent of chemical composition compared to dry leaves due to drying effect of dry leaves. Moreover, the higher area percent of chemical composition obtained through solvent-extraction method as compared to hydrodistillation method. This determined by the result obtained in area percent of chemical composition. 80.63% present in fresh leaves essential oil compared to 75.57% in dry leaves essential oil using hydrodistillation method. 82.77% essential oil extracted from fresh leaves higher than 81.26% dry leaves essential oil from solvent-extraction method. Therefore, higher chemical composition may be obtained from fresh leaves sample by using solvent-extraction method.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

*Pogostemon cablin* (Blanco) Benth. (Syn. *Pogostemon patchouli* Hook.) belongs to the family Lamiaceae and is commonly known as patchouli. It is native to subtropical Himalayas, Southeast Asia and the Far East, and has been cultivated extensively in Indonesia, Malaysia, China and Brazil for the essential oil namely “patchouli oil”. Indonesia is a major producer of patchouli oil in the world with an estimated 550 tons per year, which is more than 80% of the total (Robbins, 1983; Tao, 1983). Currently, India is producing a meagre quantity of patchouli oil and a most of its domestic requirement is met by importing about 50 tons of pure oil and 100 tons of formulated oil worth of 60 million rupees annually.

Patchouli oil is one of the most important natural essential oils used to give a base and lasting character to a fragrance in modern perfumery and cosmetic industry. It is used mainly because of fixative property as it gives tenacity to other perfumes and is widely appreciated for its characteristic pleasant and long lasting woody, earthy and camphoraceous odour. Then, patchouli oil is known to possess antifungal properties and is being used in skin infections, dandruff, and eczema