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EXTRACTION OF BIOACTIVE COMPOUNDS FROM CURRY LEAVES *(MURRAYA KOENIGII)* USING SOLVENT EXTRACTION

NURUL SYAHIRAH BINTI DZULKIFLI

B. Eng. (Hons) Chemical

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ABSTRACT

Murraya koenigii also known as curry leaves are used as a flavour ingredient and it has a lot of bioactive components which can be found inside the plant. The amount of people in Malaysia that are still not aware of curry leaves medicinal values due to lack of exposure is quite alarming. This research objectives are to extract essential oils from *Murraya koenigii* by using solvent extraction method, to determine the highest oil content in *Murraya koenigii* by using three different solvent which are pure methanol, pure ethanol and distilled water, to identify bioactives content in *Murraya koenigii* using Gas Chromatography-Mass Spectrometry and to determine chemical structure in *Murraya koenigii* using FTIR. The result shows that Methanol solvent yielded the highest oil content. The functional group was also identified where it was classified as O-H, C-H bond, Benzene and Esters group. Bioactive compounds of the essential oil performed by using GC-MS detected the presence of α-Pinene, α-Caryophyllene, α-Terpineol and Estragole. All four has potential medical benefits to human which α-Pinene exhibits anti-inflammatory and anti-microbial properties while α-Caryophyllene has anticarcinogenic properties, α-Terpineol reduces mechanical hypernociception and inflammatory response and Estragole gives local anesthetic activity. Since bioactive compounds are sucessfully found in *Murraya koenigii* leaves, thus it is hoped that Malaysians will be much aware with the health benefits of *Murraya koenigii* and will start to consume it instead of throwing it away

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CHAPTER ONE

INTRODUCTION

1.1 RESEARCH BACKGROUND

Nowadays, people are flooded with several type of diseases some of which we usually heard while some of which we never heard before. A lot of deadly diseases breaking out all over the world are due to unhealthy consumption of food. This is because a good quality food has good impact on consumer health as there is a direct relationship between food and health. This is proven when a number of diseases due to improper nutrition such as heart disease, cancer, diabetes, arthritis and cholesterol are due to consumption of junk food (Nouman et. al., 2015).

Spices and herbs are main agricultural products that are produced all over the world and are used to impart flavour to foods. The leaf *Murraya koenigii* which is commonly known as curry leaf or „Daun Kari" in Malay, is one of the most powerful ingredients. It is a native from east-Asian countries and is usually used as a spice and vegetable for flavoring soups and meat dishes and as a flavour ingredient in a variety of products (Nakamura et.al, 2013). It is also a valued dietary plant since the ancient times for its characteristic aroma, and in medicine because of its possession of several bioactive compounds with health promoting properties (Mandal, 2016) and considerable use from the standpoint of food science and technology (Rao et.al, 2007). It is also a medicinally important herb which medicinal plants or their bioactives compounds have been utilized by developing countries are said to have vast number of therapeutic applications (Jain et al., 2012).

There are many ways to extract essential oils which one of them is solvent extraction. Solvent extraction is a method employed to separate substance based on their solubility. In this research, the bioactive compounds in curry leaf were extracted using