

# Studi Literature Essential oil bioactivity of Curry leavess (*Murraya koeginii*) as slimming aromatherapy

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Abstract: Curry leaves is an aromatic plant that contained essential oil. The essential oil mostly has a potential as aromatherapy. The aim of this research is to separate the compounds in the essential oil of Kari leaf through fractionation technique and to analyse the potential of active compound as slimming aromatherapy. The sliming aromatherapy of the obtained each separated essential is evaluated *in vivo* in male Sprague-Dawley (SD) rats by aromatherapy and inhalation technique. Twenty four rats were used and divided into four groups, namely positive control, negative control, inhale the crude essential oil and inhale the active compound of essential oil. This article contains about the research to be done.

## 1 INTRODUCTION

Curry leaves are aromatherapy plants that have a distinctive odor, so in this study curry leaves were used as raw material for producing essential oils. Curry leaves essential oil has the potential as an anti-bacterial (Lubis, 2014). Curry leaves contain 0.12% essential oil (Nagappan *et. al.* 2012), and 1.0% essential oils from dried samples of curry leaves (Chowdhury *et. al.* 2008).

Types of herbal plant based aromatherapy slimming drugs are currently being developed. In Indonesia, aromatherapy is nothing new because it has been since ancient times among palace daughters using herbs derived from dried spices which were burned to scent the body. But research on aromatherapy as an inhalation slimming method tends to be very little.

Aromatherapy studies are currently being developed among others by Batubara *et al.* (2012) reported that the active compound  $\beta$ -elemenone in ginger essential oil, red galangal essential oil

(Damayanti *et al* 2014) and grape fruit oil with a limonene dominant content Shen *et al.* (2005) potentially as an aromatherapy slimming. The description above shows that the research on slimming aromatherapy with curry leaves essential oil has never been done.

## 2 METERIALS AND METHODS

### 2.1 Materials

The materials used include ovens, distillators, chromatographic vessels, capillary pipes, Gas Chromatography-Mass Spectrometry (GC-MS), and enclosures of test animals equipped with inhalator tubes. The ingredients used included curry leaves, aquades, ethyl acetate, chloroform, methanol, n-hexane, silica gel, silica gel G60F254 aluminum plates from Merck, kits (total cholesterol, triglycerides and total cholesterol) BIOLABO Reagent. Laboratory animals of Sprague-Dawley

strain adult male rats, standard feed and high cholesterol feed are sourced from egg yolk and Barco® coconut oil.

## 2.2 Methods

This research is conducted in two steps. The initial stage includes the collection of materials, determination of water and ash content, isolation of essential oils using Dean-Stark destilator, fractionation of essential oils using column chromatography and identification of fractions by GC-MS. The next stage is the test of the potential of Curry leavess essential oil and two fractions selected as aromatherapy slimming in vivo to 24 animals tested in adult male Sprague-Dawley strain rats.

## 3 RESULTS AND DISCUSSION

Aromatherapy is produced from plants containing essential oils. This study used used producer of essential oils. The determination of compounds in essential oils using GC-MS, and potential test as aromatherapy slimming by inhalation method, are used to determine the importance of essential oils, fractionation of essential oils in curry leaves essential oils. This Article contains about research to be done. so in this Article the results of the research have not been presented. However, the researcher will submit a literature study that the researcher has done as a parameter and preparation for the research to be conducted

### 3.1 Curry leaves Sample Preparation

Curry leaves (*Murraya koenigii*) belong to the family group Rutaceae (orang-jerukan tribe). Curry leaves are a typical plant in Southeast Asia. Curry plants have a height of 0.9 to 6 meters and a diameter of 15-40 cm. Curry leaves are commonly used as spices in cooking. Curry leaves have a very distinctive aroma and slightly bitter taste, oval shape with a pointed tip. This plant originates from the Indian and Sri Lankan regions and thrives in tropical climates. Curry plants have small yellowish white flowers, small fruits are green when they are young and purple after they mature. This plant multiplies through seeds and derivatives growing through its roots (Wikipedia, 2012).

Curry plants are classified into the kingdom plantae, division Spermaphyta, subdivisions of angiosperms, class dicotyledonae, orde sapindales, family rutaceae, genus binomial of *Murrayakoenigii* (L) Spreng (Jayakumar, 2014). Picture 1.

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Picture 1. Curry leaves

Water content and sample ash content are determined before distillation. Based on the results of the analysis of curry leaves water content was 54.2% while the ash content of curry leaves was 5.6%. The purpose of determining water content is to determine the resistance of sample storage. Determination of ash content aims to determine the content of metal minerals in the sample. The maximum ash content limit of herbal plants is 5% (Dalimartha 2005). The results of the experiment to determine the ash content showed that curry leaves samples were suitable for use as medicine.

### 3.2 Isolation Essential oils

Isolation Essential oils can be done by various methods, but tend to be done using steam distillation and water distillation. Nguyen et. all., (2012) separated the essential oils of fresh curry leaves growing in southern Vietnam using two extraction methods, conventional hydrodestylation and microwave hydrodestilation with 0.83% and 0.3% (w / w) yield respectively. Jamil et al., (2016) reported the yield of essential oils of fresh curry leaves using steam distillation and hydrodestylation 0.25% and 0.09% (w / w) respectively.

### 3.3 Composition of Chemical Compounds in Curry leaves Essential Oils.

Table 1 shows the composition of curry leaves essential oils based on literature studies conducted by researchers. Table 1 shows that the area of origin and treatment of the distillation method of curry leaves samples affect the components of the chemical compounds contained in curry leaves

	Country	Composition of Chemical Compounds	Method	Literature
1	Malaysia	beta-pelandren (21.21%), karyophilene (20.06%), beta-piperidinopropiopenone (15.71%), Alpha-karyophylene (12.59%) and oleic acid (12.59%) karyophilene (37.98%), Naphthalene (16.30%), Azule (9.69%), 2-hydroxy (8.46%), and alpha-pinene (6.51%)	Hydrodestilatio n  Steam distillation	Jamil <i>et. all</i> (2016)
2	Vietnam	Alfa-pinena (19.03%), beta-pelandren (18.22%) beta-pinene (4.03%), alpha pinena (29.81%) beta-pelandren (25.62%), beta-pinene (6.25%)	Hydrodestilatio n  Microwave-hydrodestilatio	Nuyen <i>et.all</i> (2012)
3	Indonesia	trans-karyophilene (29.19%), karyophylene oxide (21.94%), Germacrena-A (11.40%), $\alpha$ -Humulena (5.94%), veridiflorol (4.22%), Sabidene (3.94%), $\beta$ -elemene (3.61%), and Spiro-4,5-dekana (3.35%)	Steam distillation	Lubis, 2014

### 3.4 Potential of Curry Leaves As Aromatherapy Slimming

The potential of curry leaves as slimming aromatherapy was carried out by in vivo test on test animals sprangue dawley male rats. Damayanti et al (2014) reported that red galangal essential oil which has the potential as an aromatherapy slimming with the main compounds  $\beta$ -bisabolene (11.78%) and Trans-karyopylene (9.10%). Clove essential oil with the main compounds euganol and  $\beta$ -karyopilene has the potential to be an aromatherapy slimming but pure  $\beta$ -karyopylene is not potential as an aromatherapy slimming. (Hasim et al, 2016). The main compounds in curry leaves are trans-karyophilene (29.19%) and karyophylene oxide (21.94%) (Lubis, 2014). The main composition in essential oils of red galangal and curry leaves is trans-karyophilene, so most likely curry leaves essential oils and pure trans-karyophilene compounds have the potential as aromatherapy slimming.

## 4 Conclusion

This literature study is expected to direct researchers in conducting research on inhalation-based aromatherapy slimming.

essential oils. The data displayed is characterized using GC-MS. Table 1. Composition of Chemical Compounds in Curry leaves Essential Oils.

Furthermore, from the research that will be carried out this is expected to produce an active compound which acts as an aromatherapy slimming.

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