EFFECT OF ULTRASONIC PRETREATMENT ON KAFFIR LIME LEAVES EXTRACTION USING HYDRODISTILLATION

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ABSTRACT

Objective of this study is to extract essential oil from the kaffir lime leaves by using the hydrodistillation method. The effects of ultrasonic pretreatment on kaffir lime leaves was also investigated then analyze and identify the components of essential oil in kaffir lime leaves using gas chromatography mass spectrometry (GC-MS).The experiment was conducted with varies of time in ultrasonic pretreatment range for 0 to 120 minutes. The essential oil was extracted within 4 hours using hydrodistillation. The longer time taken of pretreatment will produce higher yield of essential oil collected. The highest yield is 0.818 % with 60 min of pretreatment using ultrasonic. Within the range for 0-60 min of ultrasonic pretreatment, the yield of essential oils increase as the pretreatment increased.

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CHAPTER 1

INTRODUCTION

1.0 BACKGROUND OF RESEARCH

Natural resources are important to human being in order to obtain the biological products that is chemical free useful to human. One of the natural resources is the aromatic compound that gives many advantages in economic market such as fragrances, health care product and food industries (Nurhani Kasuan Z. M., 2013). One of the aromatic spices that commonly used in Asian countries such as Thailand, Vietnam and Malaysia are kaffir lime or in Malay it's known as "limau purut". The scientific name for kaffir lime is Citrus *hystrix* and kaffir lime is a member of citrus family. Their leaves commonly used to add distinctive aroma and flavor to food. The kaffir lime can be used in treatments on disease such as flu and fever. While in the medical uses it can preventing cancer and can use to treat high blood pressure (Salguero, 2003)

Figure 1.0: kaffir lime