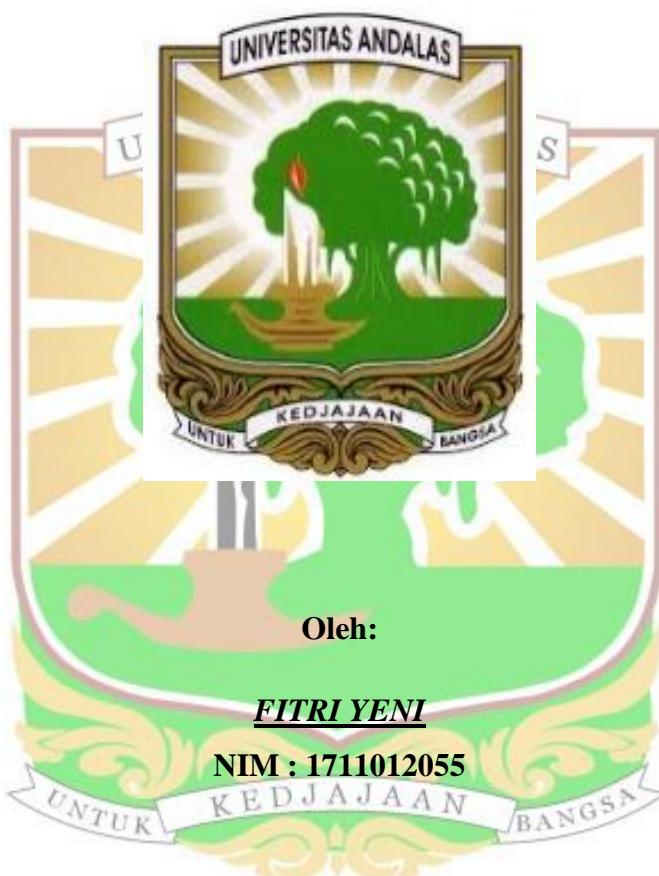


**SKRIPSI SARJANA FARMASI**

**PROFIL KANDUNGAN KIMIA MINYAK ATSIRI DARI KULIT BUAH  
DAN DAUN JERUK KASTURI (*Citrus microcarpa* Bunge) SERTA  
AKTIVITAS ANTIBAKTERINYA**



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## **ABSTRAK**

### **PROFIL KANDUNGAN KIMIA MINYAK ATSIRI DARI KULIT BUAH DAN DAUN JERUK KASTURI (*Citrus microcarpa* Bunge) SERTA AKTIVITAS ANTIBAKTERINYA**

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**(Program Studi Sarjana Farmasi)**

Jeruk merupakan salah satu tanaman yang memiliki banyak manfaat untuk kesehatan dan telah banyak dilaporkan mengenai efek farmakologinya. Salah satu jeruk yang telah dilaporkan memiliki aktivitas antibakteri adalah jeruk kasturi (*Citrus microcarpa* Bunge). Penelitian ini bertujuan mengetahui profil kandungan kimia dari minyak atsiri kulit buah dan daun jeruk kasturi. Minyak atsiri diisolasi dengan distilasi air dan dianalisis kandungan senyawa kimia dengan GC-MS. Metode yang digunakan untuk menentukan aktivitas antibakteri minyak atsiri adalah metode difusi dan dilusi. Hasil GC-MS menunjukkan komponen utama minyak atsiri pada kulit buah jeruk kasturi adalah D-limonene (29,52%), (R)-(+)-citronellal (13,76%), 3-isopropenyl-5,5-dimethyl-cyclopentene (8,88%),  $\gamma$ -terpinene (7,30%), citronellol (6,90%), dan  $\alpha$ -terpineol (4,61%) sedangkan daun jeruk kasturi terdiri dari citronellal (25,74%), citronellol (12,94%), 3-carene (8,43), dan  $\beta$ -phellandrene (4,89%). Minyak atsiri kulit buah dan daun jeruk kasturi menunjukkan aktivitas antibakteri pada bakteri MRSA, *S. Aureus*, *S. mutans*, *P. aeruginosa* dan *E. Coli*. Pada uji aktivitas antibakteri metode difusi menunjukkan minyak atsiri kulit buah memiliki daya hambat sedang sampai kuat sedangkan daun jeruk kasturi memiliki daya hambat kuat-sangat kuat. Pada uji aktivitas antibakteri dilusi menunjukkan MIC terkecil pada minyak atsiri kulit buah adalah konsentrasi 0,39% sedangkan pada minyak atsiri daun adalah konsentrasi 0,2%. Uji aktivitas antibakteri metode difusi dan dilusi menunjukkan bahwa minyak atsiri daun lebih potensial dari pada kulit buah jeruk kasturi.

Kata kunci: minyak atsiri, jeruk kasturi, GC-MS, antibakteri, senyawa terpen

## **ABSTRACT**

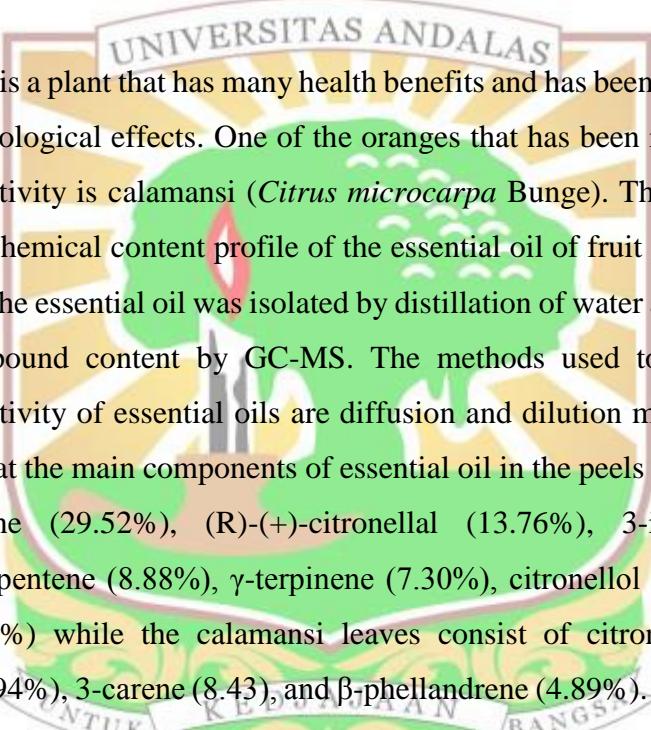
### **CHEMICAL CONTENTS PROFILE OF ESSENTIAL OIL FROM CALAMANSI (*Citrus microcarpa* Bunge) PEELS AND LEAVES AND ITS ANTIBACTERIAL ACTIVITIES**

By:

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Orange is a plant that has many health benefits and has been widely reported for its pharmacological effects. One of the oranges that has been reported to have antibacterial activity is calamansi (*Citrus microcarpa* Bunge). This study aims to determine the chemical content profile of the essential oil of fruit peels and leaves of calamansi. The essential oil was isolated by distillation of water and analyzed for chemical compound content by GC-MS. The methods used to determine the antibacterial activity of essential oils are diffusion and dilution methods. GC-MS results show that the main components of essential oil in the peels of the calamansi are D-limonene (29.52%), (R)-(+)-citronellal (13.76%), 3-isopropenyl-5,5-dimethyl-cyclopentene (8.88%),  $\gamma$ -terpinene (7.30%), citronellol (6.90%), and  $\alpha$ -terpineol (4.61%) while the calamansi leaves consist of citronellal (25.74%), citronellol (12.94%), 3-carene (8.43), and  $\beta$ -phellandrene (4.89%). The essential oil of the fruit peels and leaves of calamansi showed antibacterial activity against MRSA, *S. aureus*, *S. mutans*, *P. aeruginosa* and *E. coli* bacteria. In the antibacterial activity test, the diffusion method showed that the essential oil of the fruit peels had moderate to strong inhibitory power, while the leaves of calamansi had very strong inhibitory power. In the dilution antibacterial activity test, it showed that the smallest MIC in the essential oil of fruit peels was a concentration of 0.39%, while the essential oil for leaves was 0.2%. The diffusion and dilution method of antibacterial activity test showed that the essential oil of the leaves was more potent than the peels of the calamansi.

Key words: essential oil, calamansi, GC-MS, antibacterial, terpenes compounds