

INTISARI

Spesies dalam genus *Zingiber* utamanya *Zingiber officinale*, *Zingiber montanum*, dan *Zingiber zerumbet* telah banyak digunakan dalam pengobatan tradisional dan mengandung minyak atsiri sebagai kandungan utamanya. Minyak atsirinya telah dilaporkan memiliki berbagai aktivitas, salah satunya adalah sebagai sumber antibakteri. Aktivitas antibakteri minyak atsiri tanaman dalam genus *Zingiber* bervariasi karena adanya perbedaan kandungan dan kadar minyak atsiri spesies yang satu dengan yang lain. Perbedaan komponen penyusun minyak atsiri tersebut disebabkan karena berbagai faktor, salah satunya adalah perbedaan lokasi tumbuh yang mempengaruhi kandungan minyak atsiri. Karena keragaman kandungan tersebut, perlu dilakukan studi untuk mengetahui profil minyak atsiri tumbuhan dalam genus *Zingiber* yang dianalisis dengan GC-MS dan kaitannya dengan perbedaan tempat tumbuh dan aktivitas antibakterinya terhadap *Staphylococcus aureus* dan *Escherichia coli* untuk memperoleh kesimpulan yang dapat digunakan sebagai acuan dalam pengembangan bahan baku obat berbasis bahan alam.

Penelitian dilakukan dalam bentuk *narrative review*. Data penelitian dalam bentuk artikel ilmiah dan jurnal diperoleh dari beberapa *database* seperti *Google Scholar*, *Scopus*, dan *Pubmed* menggunakan kata kunci dan diseleksi berdasarkan kriteria inklusi dan eksklusi. Data selanjutnya ditabulasi dan dianalisis secara naratif.

Hasil *review* ini melaporkan bahwa profil minyak atsiri spesies dalam genus *Zingiber*, yaitu jahe (*Z. officinale*), lempuyang gajah (*Z. zerumbet*), dan bangle (*Z. montanum*) menunjukkan komposisi dan kadar yang beragam. Variasi tersebut disebabkan oleh perbedaan bagian tanaman, kondisi rimpang, metode ekstraksi, dan lokasi perolehan tumbuhan. Secara garis besar, minyak atsiri tanaman dalam genus *Zingiber* menunjukkan aktivitas antibakteri terhadap *S. aureus* dan *E. coli* yang diuji dengan metode difusi dan dilusi. Aktivitas penghambatan bakteri yang paling baik ditemukan pada minyak bangle dari Lai Chau, Vietnam. Penelitian terkait hubungan antara profil minyak atsiri, hubungannya dengan tempat tumbuh, dan aktivitas antibakterinya perlu lebih banyak dilakukan untuk menunjang ketersediaan data terkait minyak atsiri spesies *Zingiber*.

Kata kunci: *Zingiber*, minyak atsiri, antibakteri

ABSTRACT

Species in the zingiber genus mainly *Zingiber officinale*, *Zingiber montanum*, and *Zingiber zerumbet* are widely used in traditional medicine and contain essential oils as the main component. Its essential oils have been reported to have various activities, one of which is as a source of antibacterial. The antibacterial activity of the plant's essential oils in the genus *Zingiber* varies due to the differences in the content and levels of essential oils from one plant to another. The differences in the constituent components of essential oils are caused by various factors, one of which is the difference in growing locations that affect the content of essential oils. Due to the diversity of its content, it is necessary to conduct a study to determine the profile of plant essential oils in the genus *Zingiber* which was analyzed by GC-MS, and the correlation with different growth sites and their antibacterial activity against *S. aureus* and *E. coli* to obtain a conclusion that can be used as a reference for the development of medicinal active ingredient based on natural ingredients.

The research was conducted in the form of a narrative review. Research data in the form of scientific articles and journals were obtained from several databases such as *Google Scholar*, *Scopus*, and *Pubmed* using keywords and selected based on inclusion and exclusion criteria. The data is then tabulated and analyzed narratively.

The results in this review report that the essential oil profile of species in the *Zingiber* genus, especially ginger (*Z. officinale*), shampoo ginger (*Z. zerumbet*), and bangle (*Z. montanum*) varies in the component and its yield. The variation is caused by differences in plant parts, the condition of the rhizome, extraction methods, and the location of the plants acquired. In general, essential oils from the *Zingiber* plants showed antibacterial activity against *S. aureus* and *E. coli* which were tested by diffusion and dilution methods. The best bacterial inhibitory activity was found in bangle oil from Lai Chau, Vietnam. Research on the relationship between *Zingiber* species essential oils profile, relationship with the growing site, and its antibacterial activity needs to be done more to support the availability of data related to *Zingiber* species essential oils.

Keywords: *Zingiber*, essential oils, antibacterial