ABSTRAK

Atika Aulya Hasibuan, 4213520005 (2025). Uji Aktivitas Antibakteri Ekstrak Etanol Daun Sirih Hijau (*Piper betle* L.) Terhadap Bakteri *Escherichia coli* dan *Stapyhlococcus aureus*

Penelitian ini bertujuan untuk mengetahui aktivitas antibakteri ekstrak etanol daun sirih hijau terhadap *E. coli* dan *S. aureus*, menentukan konsentrasi efektif, serta mengidentifikasi kandungan senyawa aktif melalui uji GC-MS. Penelitian dilakukan secara eksperimental dengan rancangan acak lengkap (RAL), menggunakan konsentrasi ekstrak 40%, 60%, 80%, dan 100%, serta kontrol positif dan negatif. Aktivitas antibakteri diuji dengan metode difusi cakram, sedangkan senyawa aktif diidentifikasi melalui GC-MS. Hasil penelitian menunjukkan ekstrak etanol daun sirih hijau mampu menghambat pertumbuhan kedua bakteri. Konsentrasi 60% paling efektif terhadap *E. coli* dengan rata-rata zona hambat 14,31 mm (kategori kuat), sedangkan konsentrasi 100% paling efektif terhadap *S. aureus* dengan zona hambat 9 mm (kategori sedang). Analisis GC-MS mengidentifikasi beberapa senyawa aktif, yaitu hydroxychavicol, phytol, dan hexadecanoic acid, yang berperan sebagai antibakteri. Dengan demikian, ekstrak etanol daun sirih hijau memiliki potensi sebagai antibakteri alami terhadap *E. coli* dan *S. aureus.*

Kata Kunci: *Piper betle* L., ekstrak etanol, antibakteri, *Escherichia coli*, *Staphylococcus aureus*

ABSTRACT

Atika Aulya Hasibuan, 4213520005 (2025). Antibacterial Activity Test of Ethanolic Extract of Green Betel Leaf (*Piper betle* L.) Against *Escherichia coli* and *Staphylococcus aureus*

This study aimed to evaluate the antibacterial activity of ethanol extract of betel leaf against *E. coli* and *S. aureus*, determine the effective concentration, and identify the active compounds through GC-MS analysis. The research was conducted experimentally using a completely randomized design (CRD) with treatments of 40%, 60%, 80%, and 100% extract concentrations, as well as positive and negative controls. Antibacterial activity was tested using the disk diffusion method, while active compounds were identified using GC-MS. The results showed that the ethanol extract of betel leaf inhibited the growth of both bacteria. The 60% concentration was the most effective against *E. coli* with an average inhibition zone of 14.31 mm (strong category), while the 100% concentration was most effective against *S. aureus* with an inhibition zone of 9 mm (moderate category). GC-MS analysis identified several active compounds, including hydroxychavicol, phytol, and hexadecanoic acid, which are known to possess antibacterial properties.

Keywords: Piper betle L., ethanol extract, antibacterial, Escherichia coli, Staphylococcus aureus