

ABSTRAK

Santa Gracia Siregar, 4203220002 (2025), Isolasi dan Identifikasi Jamur Endofit Pada Daun Sirih Merah (*Ruiz & Pav*) Dengan Potensi Anti Bakteri Terhadap *Escherichia coli* dan *Staphylococcus aureus*.

Daun Sirih Merah (*Piper crocatum* Ruiz & Pav) merupakan tanaman yang sering digunakan oleh masyarakat karena dapat mengobati berbagai macam penyakit diantaranya sebagai antikanker, mengobati gangguan pencernaan, antioksidan hingga berpotensi sebagai antibakteri. Daun sirih merah berpotensi sebagai antibakteri karena adanya kandungan senyawa metabolit sekunder aktif. Pemanfaatan jamur endofit termasuk salah satu mencegah kelangkaan. Jamur endofit mampu menghasilkan senyawa metabolit sekunder yang sama dengan tanaman inangnya karena adanya transfer genetik. Penelitian ini bertujuan untuk mengisolasi jamur endofit pada daun sirih merah dan mengetahui potensi yang dihasilkan jamur endofit sebagai antibakteri. Metode yang digunakan adalah isolasi jamur endofit, pemurnian jamur endofit, karakteristik jamur endofit, serta uji aktivitas antibakteri jamur endofit. Hasil penelitian diperoleh sebanyak 5 isolat jamur endofit dan masing-masing isolat memiliki kemampuan menghambat pertumbuhan bakteri *Eserchia Coli* dan *Stapyhloccocus aureus* ditandai dengan terbentuknya zona hambat. Diameter zona hambat yang terbentuk dikategorikan pada bakteri *Escherichia coli* yang paling besar yaitu isolat JSM 4 dengan diameter zona hambat 18,9 mm dan yang paling kecil yaitu isolat JSM 2 dengan diameter zona hambat 10,8, sedangkan pada bakteri *Staphylococcus aureus* yang paling besar isolat JSM 5 dengan diameter zona hambat 24,9 mm dan yang paling kecil yaitu isolat JSM 2 dengan diameter zona hambat 10,8 mm.

Kata Kunci : Jamur Endofit, Daun Sirih Merah, Anti bakteri , *E. coli*, *S. aureus*

ABSTRACT

Santa Gracia Siregar, 4203220002 (2024), Isolation and Identification of Endophytic Fungi in Red Betel Leaves (Ruiz & Pav) with Anti-Bacterial Potential Against *Escherichia coli* and *Staphylococcus aureus*.

Red Betel Leaf (*Piper crocatum* Ruiz & Pav) is a plant that is often used by the community because it can treat various kinds of diseases including as an anticancer, treating indigestion, antioxidants and potentially as an antibacterial. Red betel leaves have the potential to be antibacterial because of the content of active secondary metabolite compounds. The use of endophytic fungi is one of preventing scarcity. Endophytic fungi are able to produce the same secondary metabolite compounds as their host plants due to genetic transfer. This study aims to isolate endophytic fungi in red betel leaves and determine the potential produced by endophytic fungi as antibacterial. The methods used were endophytic fungal isolation, endophytic fungal purification, endophytic fungal characteristics, and endophytic fungal antibacterial activity test. The results of the study were obtained as many as 5 endophytic fungal isolates and each isolate has the ability to inhibit the growth of *Escherichia coli* and *Staphylococcus aureus* bacteria characterized by the formation of an inhibition zone. The diameter of the inhibitory zone formed was categorized in the largest *Escherichia coli* bacteria, namely JSM 4 isolate with an inhibitory zone diameter of 18.9 mm and the smallest, namely JSM 2 isolate with an inhibitory zone diameter of 10.8, while in *Staphylococcus aureus* bacteria, the largest was JSM 5 isolate with an inhibitory zone diameter of 24.9 mm and the smallest was JSM 2 isolate with an inhibitory zone diameter of 10.8 mm.

Keywords: Endophytic Fungi, Red Betel Leaf, Anti-bacterial, *E. coli*, *S. aureus*