

**UJI AKTIVITAS ANTIBAKTERI INFUSA DAUN SIRIH HIJAU  
(*Piper betle* Linn) TERHADAP BAKTERI *Staphylococcus aureus*  
ATCC 25923 SECARA IN VITRO**

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**INTISARI**

**Latar Belakang:** Infeksi yang disebabkan oleh bakteri *Staphylococcus aureus* masih menjadi masalah kesehatan karena dapat menyebabkan gangguan kulit seperti jerawat, impetigo, dan infeksi luka. Dalam penanganan penyakit tersebut, antibiotik merupakan pilihan utama pengobatan. Namun, penggunaan antibiotik yang tidak tepat dapat menimbulkan resistensi, sehingga diperlukan alternatif alami yang lebih aman, seperti pemanfaatan tanaman herbal. Salah satunya daun sirih hijau (*Piper betle* Linn).

**Tujuan Penelitian:** Mengetahui aktivitas antibakteri infusa daun sirih hijau (*Piper betle* Linn) terhadap pertumbuhan bakteri *Staphylococcus aureus*.

**Metode Penelitian:** Penelitian ini menggunakan sampel daun sirih muda dan daun sirih tua. Tahapan penelitian meliputi proses ekstraksi menggunakan metode infusa. Dilakukan uji organoleptik, skrining fitokimia, serta uji aktivitas antibakteri terhadap *Staphylococcus aureus* dilakukan menggunakan metode dilusi cair untuk menentukan Konsentrasi Hambat Minimum (KHM) dan metode dilusi padat untuk menentukan Konsentrasi Bunuh Minimum (KBM) dengan variasi konsentrasi 1,56%, 3,12%, 6,25%, 12,5%, 25%, dan 50%.

**Hasil Penelitian:** Volume infusa yang diperoleh yaitu 20 mL dari daun sirih muda dan 30 mL dari daun sirih tua. Infusa daun sirih muda berbentuk cair, berwarna hijau kekuningan, memiliki bau khas, dan rasa pahit. Sementara itu, infusa daun sirih tua menunjukkan karakteristik yang serupa, namun berwarna cokelat kekuningan. Hasil skrining fitokimia menunjukkan infusa daun sirih muda dan tua mengandung senyawa flavonoid, saponin, tanin, alkaloid, dan triterpenoid. Sementara itu, hasil uji antibakteri menunjukkan KHM infusa daun sirih muda adalah 25%, sedangkan infusa daun tua sebesar 12,5%. Namun demikian, nilai KBM tidak dapat ditentukan karena masih ditemukan pertumbuhan koloni bakteri pada seluruh konsentrasi uji.

**Kesimpulan Penelitian:** KHM infusa daun sirih muda yaitu 25%, sedangkan daun sirih tua adalah 12,5%. KBM dari infusa daun sirih muda maupun tua tidak dapat ditentukan karena masih terdapat pertumbuhan koloni bakteri pada seluruh konsentrasi uji.

**Kata kunci:** Antibakteri, Daun sirih hijau, Infusa, *Staphylococcus aureus*

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## ANTIBACTERIAL ACTIVITY OF GREEN BETEL LEAVES INFUSION (*Piper betle* Linn) AGAINST *Staphylococcus aureus* ATCC 25923 IN VITRO

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### ABSTRACT

**Background:** Infections caused by *Staphylococcus aureus* bacteria remain a health concern because they can cause skin disorders such as acne, impetigo, and wound infections. Antibiotics are the primary treatment option for these conditions. However, inappropriate antibiotic use can lead to antibiotic resistance, necessitating safer, natural alternatives, such as the use of herbal plants. One example is the green betel leaves (*Piper betle* Linn).

**Objective:** To determine the antibacterial activity of green betel leaf infusion (*Piper betle* Linn) against the growth of *Staphylococcus aureus* bacteria.

**Methods:** The extraction method using infusion was then tested organoleptically, phytochemical screening, and antibacterial activity test against *Staphylococcus aureus* was carried out using the liquid dilution method to determine the Minimum Inhibitory Concentration (MIC) and the solid dilution method to determine the Minimum Bactericidal Concentration (MBC) with concentration variations of 1.56%, 3.12%, 6.25%, 12.5%, 25%, and 50%.

**Results:** The volume of infusion obtained was 20 mL from young betel leaves and 30 mL from old betel leaves. The young betel leaf infusion was liquid, yellowish green in color, had a distinctive odor, and a bitter taste. Meanwhile, the old betel leaf infusion showed similar characteristics, but was yellowish brown in color. Furthermore, the results of phytochemical screening showed that the betel leaf and old betel leaf infusions contained flavonoids, saponins, tannins, alkaloids, and triterpenoids. In addition, the results of the antibacterial test showed that the MIC of the young betel leaf infusion was 25%, while the old leaf infusion showed an MIC of 12.5%. However, the MBC could not be determined because bacterial colony growth was still found at all test concentrations.

**Conclusion:** The MIC of young green betel leaf infusion was 25%, while that of dark green betel leaf infusion was 12.5%. The MBC of both young and dark green betel leaf infusions could not be determined in this study because bacterial colony growth was still observed at all test concentrations.

**Keywords:** Antibacterial, Green betel leaves, Infusion, *Staphylococcus aureus*

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