

**POLITEKNIK KESEHATAN KEMENTERIAN KESEHATAN TANJUNG  
KARANG JURUSAN FARMASI**

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**Uji Aktivitas Antibakteri Ekstrak Etanol Daun Kopi Robusta (*Coffea canephora* Pierre ex A.Froehner). Lampung Barat Terhadap Pertumbuhan Bakteri *Streptococcus mutans*.**

**XViii + 103 halaman, 6 tabel, 5 gambar, dan 32 Lampiran**

**ABSTRAK**

Karies gigi merupakan masalah kesehatan mulut yang umum, terutama disebabkan oleh *Streptococcus mutans*. Data Riskesdas menunjukkan prevalensi karies di Indonesia mencapai 88%, namun hanya 10,2% yang mendapatkan perawatan. Karies terjadi akibat interaksi bakteri dengan sisa makanan serta kebiasaan menjaga kebersihan gigi yang buruk. *S. mutans* dapat menempel di permukaan gigi, membentuk biofilm, dan menghasilkan asam laktat yang menciptakan suasana asam sehingga bakteri bertahan lebih lama. Penggunaan antibiotik dalam jangka panjang berisiko menimbulkan resistensi, sehingga bahan alami menjadi alternatif penting. Salah satunya adalah daun kopi robusta (*Coffea canephora* Pierre ex A.Froehner) yang mengandung senyawa aktif seperti alkaloid, flavonoid, saponin, fenol, Terpenoid/Steroid, fenolik.

Penelitian ini bertujuan menguji aktivitas antibakteri ekstrak etanol 96% daun kopi robusta asal Lampung Barat terhadap *S. mutans* menggunakan metode difusi cakram Kirby-Bauer. Ekstrak diperoleh dengan metode maserasi dan diuji fitokimianya, yang menunjukkan kandungan metabolit sekunder berpotensi antibakteri. Hasil uji menunjukkan zona hambat meningkat seiring kenaikan konsentrasi: 50% (20,38mm), 40% (19,78mm), 35% (18,87mm), 30% (17,02mm), 25% (16,66mm), 20% (15,76mm), 15% (14,67mm), 10% (13,79mm). Kontrol positif (Ciprofloxacin) menghasilkan zona hambat 30,26mm, sedangkan kontrol negatif (Aquadest) tidak menunjukkan aktivitas.. Analisis One Way Anova dengan taraf kepercayaan 95% dan taraf kesalahan 5%,  $\alpha = 0,05$  yang artinya jika nilai signifikansi  $\leq 0,05$ , maka setiap kelompok perlakuan memiliki hasil beda nyata secara statistik. Setelah dilakukan analisis One Way Anova, didapatkan hasil signifikan  $\leq 0,05$ . Maka, analisis statistika menunjukkan bahwa Daun Kopi Robusta (*Coffea canephora* Pierre ex A.Froehner) memiliki aktivitas antibakteri.

**Kata Kunci :** *Streptococcus mutans*, Uji daya hambat, Ekstrak Daun Kopi Robusta (*Coffea canephora* Pierre ex A.Froehner).

**Daftar bacaan :** 47 ( 1972-2024)

**TANJUNG KARANG MINISTRY OF HEALTH POLYTECHNIC,  
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***Antibacterial Activity Test of Ethanol Extract of Robusta Coffee Leaves (Coffea canephora Pierre ex A.Froehner).from West Lampung on the Growth of Streptococcus mutans Bacteria***

**XViii + 103 pages, 6 tables, 5 figures, and 32 Appendices**

**ABSTRACT**

Dental caries is a common oral health problem, primarily caused by *Streptococcus mutans*. Basic Health Research (Riskesdas) data shows that the prevalence of caries in Indonesia reaches 88%, but only 10.2% receive treatment. Caries occurs due to the interaction of bacteria with food debris and poor dental hygiene habits. *S. mutans* can adhere to tooth surfaces, form biofilms, and produce lactic acid, creating an acidic environment that allows bacteria to survive longer. Long-term use of antibiotics risks developing resistance, making natural ingredients an important alternative. One example is robusta coffee leaves (*Coffea canephora* Pierre ex A. Froehner), which contain active compounds such as alkaloids, flavonoids, saponins, phenols, terpenoid/steroid, and phenolics.

This study aimed to test the antibacterial activity of a 96% ethanol extract of robusta coffee leaves from West Lampung against *S. mutans* using the Kirby-Bauer disc diffusion method. The extract was obtained by maceration and its phytochemical analysis revealed the presence of secondary metabolites with antibacterial potential. The test results showed an increase in the inhibition zone with increasing concentration: 50% (20.38 mm), 40% (19.78 mm), 35% (18.87 mm), 30% (17.02 mm), 25% (16.66 mm), 20% (15.76 mm), 15% (14.67 mm), and 10% (13.79 mm). The positive control (Ciprofloxacin) produced an inhibition zone of 30.26 mm, while the negative control (Water) showed no activity. One-Way ANOVA analysis with a 95% confidence level and a 5% error level,  $\alpha = 0.05$ , which means that if the significance value is  $\leq 0.05$ , then each treatment group has statistically significant differences. After conducting the One-Way ANOVA analysis, the results were significant  $\leq 0.05$ . Thus, the statistical analysis shows that Robusta Coffee Leaves (*Coffea canephora* Pierre ex A.Froehner) have antibacterial activity.

**Keywords** : *Streptococcus mutans*, Inhibitory test, Robusta Coffee Leaf Extract (*Coffea canephora* Pierre ex A.Froehner).

**Reading list** : 47 (1972-2024)