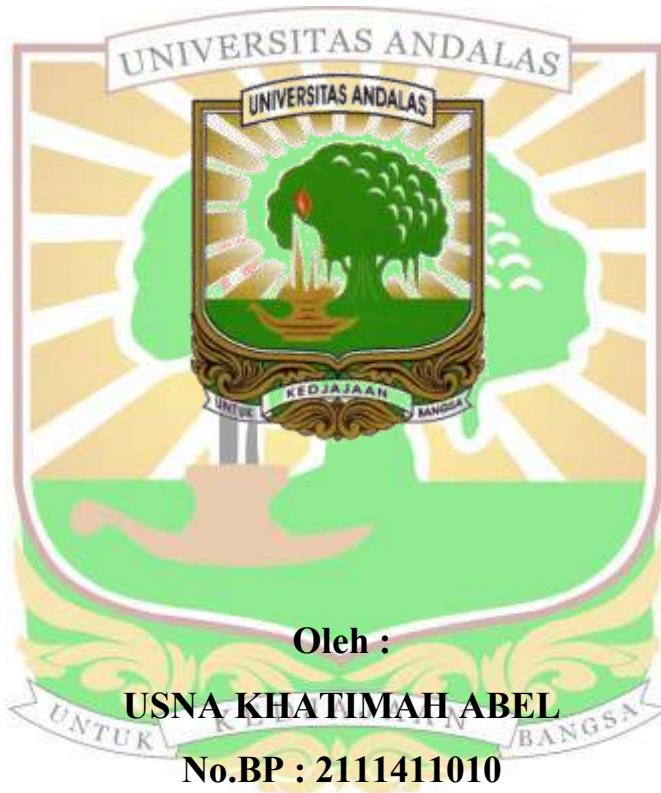


SKRIPSI

PENGARUH EKSTRAK DAUN KOPI ARABIKA (*Coffea arabica L.*) TERHADAP DAYA HAMBAT BAKTERI

***Streptococcus mutans* ATCC 25175**



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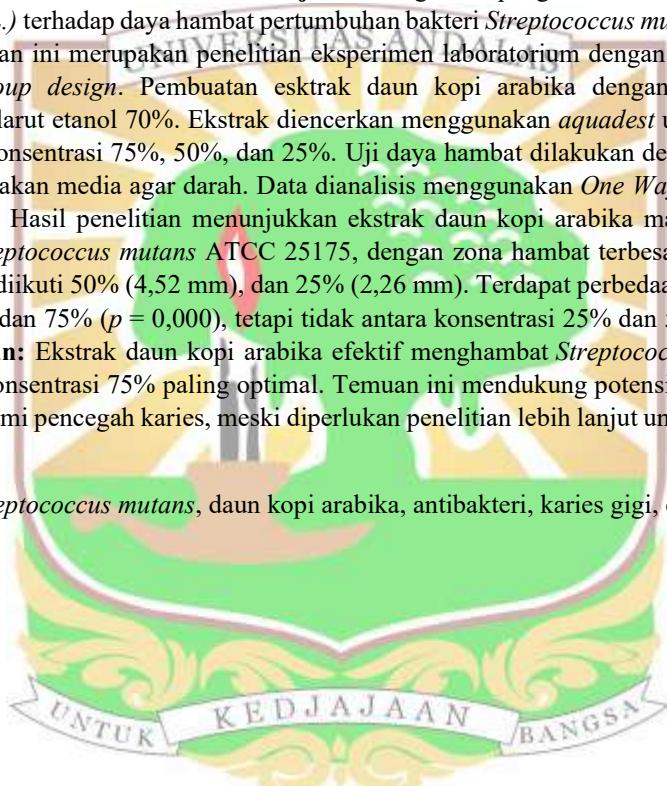
**PENGARUH EKSTRAK DAUN KOPI ARABIKA (*Coffea arabica L.*)
TERHADAP DAYA HAMBAT BAKTERI
Streptococcus mutans ATCC 25175**

Oleh: Usna Khatimah Abel

ABSTRAK

Latar Belakang: Kebersihan mulut sangat penting dalam menjaga kesehatan gigi, salah satunya dengan mengendalikan pertumbuhan bakteri *Streptococcus mutans* yang berperan utama dalam pembentukan karies gigi. Penggunaan agen antibakteri seperti klorheksidin memiliki efek samping, sehingga diperlukan alternatif alami seperti ekstrak daun kopi arabika (*Coffea arabica L.*) yang mengandung senyawa bioaktif antibakteri. **Tujuan:** Mengetahui pengaruh ekstrak daun kopi arabika (*Coffea arabica L.*) terhadap daya hambat pertumbuhan bakteri *Streptococcus mutans* ATCC 25175. **Metode:** Penelitian ini merupakan penelitian eksperimen laboratorium dengan rancangan *posttest only control group design*. Pembuatan ekstrak daun kopi arabika dengan metode maserasi menggunakan pelarut etanol 70%. Ekstrak diencerkan menggunakan *aquadest* untuk mendapatkan ekstrak dengan konsentrasi 75%, 50%, dan 25%. Uji daya hambat dilakukan dengan metode difusi cakram menggunakan media agar darah. Data dianalisis menggunakan *One Way ANOVA* dan *Post Hoc LSD*. **Hasil:** Hasil penelitian menunjukkan ekstrak daun kopi arabika mampu menghambat pertumbuhan *Streptococcus mutans* ATCC 25175, dengan zona hambat terbesar pada konsentrasi 75% (6,07 mm), diikuti 50% (4,52 mm), dan 25% (2,26 mm). Terdapat perbedaan signifikan antara konsentrasi 25% dan 75% ($p = 0,000$), tetapi tidak antara konsentrasi 25% dan 50% serta 50% dan 75%. **Kesimpulan:** Ekstrak daun kopi arabika efektif menghambat *Streptococcus mutans* ATCC 25175, dengan konsentrasi 75% paling optimal. Temuan ini mendukung potensi daun kopi arabika sebagai bahan alami pencegah karies, meski diperlukan penelitian lebih lanjut untuk pengembangan aplikasinya.

Kata Kunci: *Streptococcus mutans*, daun kopi arabika, antibakteri, karies gigi, ekstrak etanol.



THE EFFECT OF ARABICA COFFEE LEAF EXTRACT
(*Coffea arabica L.*) ON THE INHIBITION OF
***Streptococcus mutans* ATCC 25175**

By: Usna Khatimah Abel

ABSTRACT

Background: Oral hygiene is crucial for maintaining dental health, particularly in controlling the growth of *Streptococcus mutans*, a primary contributor to dental caries. While chlorhexidine is commonly used as an antibacterial agent, its side effects necessitate the exploration of natural alternatives such as Arabica coffee leaf extract (*Coffea arabica L.*), which contains bioactive compounds with antibacterial properties. **Objective:** This study aimed to examine the effect of Arabica coffee leaf extract (*Coffea arabica L.*) on the inhibition of *Streptococcus mutans* ATCC 25175 growth. **Methods:** This laboratory experimental study employed a posttest-only control group design. The Arabica coffee leaf extract was prepared using maceration with 70% ethanol solvent and subsequently diluted with aquadest to achieve concentrations of 75%, 50%, and 25%. The antibacterial activity was assessed using the disk diffusion method on blood agar media. Data were analyzed using One-Way ANOVA and Post Hoc LSD tests. **Results:** The findings demonstrated that Arabica coffee leaf extract effectively inhibited the growth of *Streptococcus mutans* ATCC 25175, with the highest inhibition zone observed at 75% concentration (6.07 mm), followed by 50% (4.52 mm) and 25% (2.26 mm). A statistically significant difference was noted between the 25% and 75% concentrations ($p < 0.05$), while no significant differences were observed between 25% and 50% or 50% and 75%. **Conclusion:** Arabica coffee leaf extract exhibits inhibitory effects against *Streptococcus mutans* ATCC 25175, with the 75% concentration showing the highest efficacy. These results support the potential of Arabica coffee leaves as a natural agent for caries prevention, though further research is required to explore its practical applications.

Keywords: *Streptococcus mutans*, Arabica coffee leaves, antibacterial, dental caries, ethanol extract.

