

# UJI EFEKTIVITAS ANTIBAKTERI OBAT KUMUR EKSTRAK ETANOL DAUN BELIMBING WULUH (*Averrhoa bilimbi* Linn) TERHADAP BAKTERI *Streptococcus mutans*

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Karies gigi merupakan penyakit infeksi pada rongga mulut dan penyebab utamanya adalah pembentukan plak dan bakteri. Bakteri utama penyebab karies gigi yaitu *Streptococcus mutans* yang termasuk bakteri gram positif. Penanganan karies gigi dapat dilakukan dengan terapi penunjang menggunakan obat kumur seperti *chlorhexidine* glukonat 0,1% yang merupakan standar pengobatan karies gigi. *Chlorhexidine* glukonat 0,1% memiliki kelemahan dalam penggunaan jangka panjang, maka perlu dikembangkan sediaan obat kumur dari tanaman herbal, salah satu tanaman tersebut adalah daun belimbing wuluh (*Averrhoa bilimbi* Linn). Penelitian ini bertujuan untuk mengetahui efektivitas antibakteri formulasi obat kumur ekstrak etanol daun belimbing wuluh (*Averrhoa bilimbi* Linn) terhadap bakteri *Streptococcus mutans* sebagai pengobatan alternatif. Pengujian dilakukan dengan menggunakan metode difusi sumuran. Jenis penelitian yang digunakan yaitu *true experimental* dengan desain penelitian *post-test only control group*. Formulasi obat kumur ekstrak etanol daun belimbing wuluh (*Averrhoa bilimbi* Linn) dibuat tiga variasi konsentrasi 20%, 25% dan 30%. Kontrol positif yang digunakan adalah *chlorhexidine* 0,1% dan kontrol negatif yang digunakan formula obat kumur tanpa ekstrak. Rata-rata zona hambat yang terbentuk berturut-turut yaitu  $5,14 \pm 0,58$  mm;  $5,82 \pm 0,69$  mm dan  $6,03 \pm 0,87$  mm. Efektivitas antibakteri formulasi obat kumur ekstrak etanol daun belimbing wuluh (*Averrhoa bilimbi* Linn) dihasilkan nilai efektivitas sebagai berikut: 35,52%; 40,22% dan 41,67%. Data dianalisis dengan uji *Kruskal Wallis* dan dilanjutkan dengan uji *Mann Whitney*. Dari hasil tersebut disimpulkan bahwa formulasi obat kumur ekstrak etanol daun belimbing wuluh (*Averrhoa bilimbi* Linn) memiliki efektivitas sebagai antibakteri namun belum efektif jika dibandingkan dengan obat kumur *chlorhexidine* 0,1%.

**Kata kunci:** Karies gigi, *Streptococcus mutans*, ekstrak daun belimbing wuluh (*Averrhoa bilimbi* Linn), efektivitas antibakteri, obat kumur, zona hambat.

**ANTIBACTERIAL EFFECTIVITY OF *MOUTHWASH* ETHANOL  
EXTRACTS OF BELIMBING WULUH LEAVES (*Averrhoa bilimbi* Linn)  
AGAINST *Streptococcus mutans* BACTERIA**

**Oktavia Dwi Nugraheni**

*Dental caries is an infectious disease of the oral cavity and the major cause are the accumulation of plaque and bacteria. The main bacteria that causes dental caries is Streptococcus mutans, which is a gram-positive bacteria. Treatment of dental caries can be done by supporting therapy using mouthwash such as chlorhexidine gluconate 0,1% which is the standard treatment for dental caries. Chlorhexidine gluconate 0,1% has disadvantages that are used continuously, so it is necessary to develop mouthwash preparations from herbal plants, one of plants is belimbing wuluh leaves (Averrhoa bilimbi Linn.). The purpose of this study was to determine the antibacterial effectivity of mouthwash ethanol extract of belimbing wuluh leaves (Averrhoa bilimbi Linn.) towards Streptococcus mutans bacteria as an alternative treatment. Antibacterial effectivity was tested using the well diffusion method. The type of research used was true experimental with a post-test only controlled by group research design. Mouthwash formulation ethanol extracts of belimbing wuluh leaves (Averrhoa bilimbi Linn) was made in three variations of 20%; 25% and 30%. The positive control used was chlorhexidine gluconate 0,1% and the negative control used mouthwash formulation without extract. The average inhibition zone formed respectively is  $5,14 \pm 0,58$  mm;  $5,82 \pm 0,69$  mm and  $6,03 \pm 0,87$  mm. Antibacterial effectiveness of mouthwash formulation ethanol extracts of belimbing wuluh leaves (Averrhoa bilimbi Linn.) resulted in the following effectiveness values: 35,52%; 40,22% and 41,67%. Data were analyzed by Kruskal Wallis test and continued with Mann Whitney test. It can be concluded that the mouthwash formulation ethanol extract of belimbing wuluh leaves (Averrhoa bilimbi Linn.) have antibacterial effectivity but is not effective when compared to chlorhexidine 0,1% as a positive control.*

**Keywords :** *Dental Caries, Streptococcus mutans, extract belimbing wuluh leaf (Averrhoa bilimbi Linn.), antibacterial effectiveness, mouthwash, inhibition zone*