

## ABSTRAK

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Judul : Uji Efektivitas Antibakteri Ekstrak Daun Serai (*Cymbopogon citratus*) terhadap Pertumbuhan *Streptococcus sanguinis* pada Basis Akrilik Ortodonti Lepas

Penggunaan basis akrilik sebagai pelat dasar ortodonti lepasan memiliki kekurangan yaitu berpori, sehingga meningkatkan risiko kolonisasi mikroorganisme, diantaranya *Streptococcus sanguinis*. Daun serai (*Cymbopogon citratus* L.) mengandung metabolit sekunder bersifat antibakteri seperti alkaloid, saponin, tanin, polifenol. Tujuan penelitian adalah untuk mengetahui efektivitas antibakteri ekstrak daun serai (*Cymbopogon citratus*) 40% dan 50% terhadap pertumbuhan *Streptococcus sanguinis* pada basis akrilik ortodonti lepasan. Jenis penelitian ini merupakan *true eksperimental* dengan desain *post test only control group*. Jumlah kelompok dalam penelitian ini sebanyak 4 (empat) yang masing-masing terdiri dari 6 replikasi. Pengujian antibakteri ekstrak daun serai menggunakan metode difusi. Analisis data dengan uji statistik Kruskal-Wallis dan Mann-Whitney. Berdasarkan hasil penelitian diperoleh rata-rata jumlah koloni bakteri *Streptococcus sanguinis* pada basis akrilik ortodonti lepasan dari kontrol negatif, kontrol positif, ekstrak daun serai 50% dan 40% adalah  $1725 \pm 171,980$  CFU/mL,  $4,17 \pm 2,639$  CFU/mL,  $451,67 \pm 57,840$  CFU/mL, dan  $662,50 \pm 23,889$  CFU/mL. Hasil uji *Kruskal-Wallis* dinyatakan bahwa terdapat perbedaan rerata jumlah koloni yang signifikan antar seluruh kelompok ( $p=0,000$ ;  $p<0,05$ ). Hasil uji *Mann-Whitney* dinyatakan bahwa terdapat perbedaan efektivitas antibakteri yang signifikan antara dua kelompok yang berbeda ( $p=0,004$ ;  $p<0,05$ ). Kesimpulan penelitian ini adalah ekstrak daun serai memiliki efektivitas antibakteri terhadap pertumbuhan *Streptococcus sanguinis* pada basis akrilik ortodonti lepasan.

### **Kata kunci:**

Ortodonti Lepas, Ekstrak Daun Serai, *Streptococcus sanguinis*, Basis Akrilik, Antibakteri

## **ABSTRACT**

*Name : Nora Fine Damayanti Sianipar*  
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*Title : Antibacterial Effectiveness Test of Lemongrass Leaf Extract (Cymbopogon citratus) on the Growth of Streptococcus sanguinis on Removable Orthodontic Acrylic Bases*

*The use of acrylic base as a removable orthodontic base plate has the disadvantage of being porous, thus increasing the risk of microorganism colonization, including Streptococcus sanguinis. Lemongrass leaves (Cymbopogon citratus L.) contain secondary metabolites that have antibacterial properties such as alkaloids, saponins, tannins, polyphenols. The purpose of this study was to determine the antibacterial effectiveness of lemongrass leaf extract (Cymbopogon citratus) 40% and 50% against the growth of Streptococcus sanguinis on removable orthodontic acrylic bases. This type of research is a true experimental with a post-test only control group design. The number of groups in this study was 4 (four), each consisting of 6 replications. The antibacterial testing of lemongrass leaf extract used the diffusion method. Data analysis used the Kruskal-Wallis and Mann-Whitney statistical tests. Based on the results of the study, the average number of Streptococcus sanguinis bacterial colonies on removable orthodontic acrylic bases from negative controls, positive controls, 50% and 40% lemongrass leaf extract was  $1725 \pm 171,980$  CFU/mL,  $4.17 \pm 2,639$  CFU/mL,  $451.67 \pm 57,840$  CFU/mL, and  $662.50 \pm 23,889$  CFU/mL. The results of the Kruskal-Wallis test stated that there was a significant difference in the average number of colonies between all groups ( $p=0.000$ ;  $p<0.05$ ). The results of the Mann-Whitney test stated that there was a significant difference in antibacterial effectiveness between the two different groups ( $p=0.004$ ;  $p<0.05$ ). The conclusion of this study is that lemongrass leaf extract has antibacterial effectiveness against the growth of Streptococcus sanguinis on removable orthodontic acrylic bases.*

**Keywords:**

*Removable Orthodontics, Lemongrass Leaf Extract, Streptococcus sanguinis, Acrylic Base, Antibacterial*