

ABSTRAK

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Program Studi : Kedokteran Gigi
Judul : Efektifitas Antibakteri Ekstrak *Virgin Coconut Oil (VCO)*
Konsentrasi 3.125%, 6.25%, 12.5%, 25%, dan 50%
terhadap Bakteri *Enterococcus faecalis*

Latar belakang: *Enterococcus faecalis* merupakan bakteri fakultatif anaerob. Bakteri ini dikenal sebagai mikroorganisme penyebab kegagalan perawatan saluran akar, karena dapat membentuk biofilm pada dinding dentin saluran akar gigi. Bakteri tersebut dieliminasi dengan cara mengirigasi saluran akar gigi menggunakan bahan irigasi kimiawi atau alami yang bersifat antibakteri. Salah satu bahan alami yang memiliki sifat antibakteri adalah *Virgin Coconut Oil (VCO)*. **Tujuan:** Untuk mengetahui efektivitas antibakteri *VCO* konsentrasi 3.125%, 6.25, 12.5%, 25%, dan 50% terhadap bakteri *Enterococcus faecalis*. **Metode:** Jenis penelitian ini merupakan eksperimental laboratoris dengan *post test only control group design*. Sampel penelitian ini adalah biakan murni bakteri *Enterococcus faecalis*. Penelitian ini terdiri dari tujuh kelompok yaitu kelompok I, II, III, IV, V (masing-masing *VCO* konsentrasi 3.125%, 6.25, 12.5%, 25%, 50%), kelompok VI (klorheksidin diglukonat 2%), dan kelompok VII (DMSO). Pengujian antibakteri dilakukan secara metode difusi dengan menghitung diameter zona hambat menggunakan kaliper geser. Kemudian, data dianalisis dengan uji statistik *one way ANOVA* dan *post hoc LSD*. **Hasil:** Hasil penelitian ini menunjukkan bahwa hanya klorheksidin diglukonat 2% yang memiliki diameter zona hambat terhadap bakteri *Enterococcus faecalis* dengan rerata dan standar deviasi sebesar $20,20 \pm 1,184$ mm, sedangkan berbagai konsentrasi ekstrak *VCO* dan DMSO tidak ada zona hambat. Hasil uji *one way ANOVA* menunjukkan bahwa terdapat perbedaan efektivitas antibakteri yang signifikan dari berbagai konsentrasi ekstrak *VCO*, klorheksidin diglukonat 2%, dan DMSO dalam menghambat pertumbuhan bakteri *Enterococcus faecalis* ($p < 0,05$). Hasil uji *post hoc LSD* menunjukkan bahwa perbedaan efektivitas antibakteri yang signifikan antara kelompok I, II, III, IV, V, dan VII dengan kelompok VI ($p < 0,05$). **Kesimpulan:** Tidak terdapat efektivitas antibakteri..ekstrak *VCO* dengan konsentrasi 3.125 %, 6.25, 12.5%, 25%, dan 50% dalam menghambat pertumbuhan bakteri *E nterococcus faecalis*.

Kata kunci:

Antibakteri, *Enterococcus faecalis*, *VCO*

ABSTRACT

Name : Muhammad Diffa Satrya
Study Program : Dentistry
Title : Antibacterial Effectiveness of Virgin Coconut Oil (VCO)
Extract with Concentrations of 3.125%, 6.25%, 12.5%, 25%,
and 50% Against Enterococcus faecalis bacteria

Background: Enterococcus faecalis is a facultative anaerobic bacteria. This bacteria is known as a microorganism that cause failure of root canal treatment, because it can form a biofilm on the dentin wall of the root canal. These bacteria are eliminated by irrigating the root canal using chemical or natural irrigants that have antibacterial properties. One of the natural ingredients that have antibacterial properties is Virgin Coconut Oil (VCO). **Objective:** To determine the effectiveness of VCO concentrations of 3.125%, 6.25, 12.5%, 25%, 50% against Enterococcus faecalis bacteria. **Methods:** This type of research is an experimental laboratory with a post test only control group design. Samples were pure cultures of Enterococcus faecalis bacteria. This study consisted of seven groups, namely group I, II, III, IV, V (VCO concentration 3.125%, 6.25, 12.5%, 25%, 50%, respectively), group VI (chlorhexidine digluconate 2%), and group VII (DMSO). Antibacterial testing was carried out using the diffusion method by calculating the diameter of the inhibition zone using a sliding caliper. Then, the data were analyzed with one way ANOVA statistical test and post hoc LSD. **Results:** The results of this study showed that only 2% chlorhexidine digluconate had an inhibitory zone diameter of Enterococcus faecalis bacteria with a mean and standard deviation of 20.20 ± 1.184 mm, while various concentrations of VCO extract and DMSO had no inhibition zones. The results of the one way ANOVA test showed that there were significant differences in the antibacterial effectiveness of various concentrations of VCO extract, 2% chlorhexidine digluconate, and DMSO in inhibiting the growth of Enterococcus faecalis ($p < 0.05$). The results of the post hoc LSD test showed that there was a significant difference in antibacterial effectiveness between groups I, II, III, IV, V, and VII with group VI ($p < 0.05$). **Conclusion:** There was no antibacterial effect of VCO extract with concentrations of 3.125%, 6.25, 12.5%, 25%, and 50% in inhibiting the growth of Enterococcus faecalis bacteria.

Keywords:

Antibacterial, Enterococcus faecalis, VCO