INTISARI

Periodontitis adalah penyakit peradangan jaringan periodontal yang ditandai dengan adanya poket yang dalam. *Fusobacterium nucleatum* (*F. nucleatum*) merupakan salah satu bakteri awal yang berhubungan dengan penyakit periodontal. Pemberian terapi adjuvan berupa irigasi subgingiva dapat dilakukan untuk meningkatkan hasil perawatan penyakit periodontal. *Eco-enzyme* adalah larutan antibakteri herbal yang merupakan hasil fermentasi sisa sampah dapur organik, gula, dan air. Limbah jeruk peras (*Citrus sinensis* L.) merupakan salah satu limbah organik yang mudah didapat. Penelitian ini bertujuan untuk mengetahui pengaruh daya antibakteri larutan irigasi *eco-enzyme* limbah jeruk peras (*Citrus sinensis* L.) 10% terhadap pertumbuhan *F. nucleatum*.

Penelitian dilakukan dengan metode difusi cakram (metode Kirby-Bauer). *Mueller Hinton Agar* (MHA) adalah media pertumbuhan bakteri pada penelitian ini. Sebanyak 27 sampel dibagi ke dalam 3 kelompok uji: kelompok perlakuan (larutan *eco-enzyme* limbah jeruk peras (*Citrus sinensis* L.) 10%), kelompok kontrol positif (klorheksidin 0,2%), dan kelompok kontrol negatif (akuades). Pengamatan dilakukan dengan mengukur diameter zona hambat pada daerah bening di sekeliling kertas cakram menggunakan *sliding caliper*. Data dianalisis dengan metode *One-Way ANOVA* dan LSD.

Hasil penelitian menunjukkan adanya pengaruh bahan uji terhadap pertumbuhan *F. nucleatum* (p <0,05). Kelompok kontrol negatif tidak menghasilkan zona hambat, sedangkan kelompok perlakuan dan kelompok kontrol positif menghasilkan zona hambat walaupun terdapat perbedaan signifikan (p <0,05). Melalui penelitian ini, disimpulkan bahwa daya antibakteri larutan irigasi *eco-enzyme* limbah jeruk peras (*Citrus sinensis* L.) 10% berpengaruh menghambat pertumbuhan *F. nucleatum.*

Kata kunci: *F. nucleatum*, *eco-enzyme*, antibakteri, *Citrus sinensis* L.

ABSTRACT

Periodontitis is an inflammatory disease of the periodontal tissue characterized by the presence of deep pockets. *Fusobacterium nucleatum* (*F. nucleatum*) is one of the first bacteria associated with periodontal disease. Providing adjuvant therapy in the form of subgingival irrigation can be done to improve the results of periodontal disease treatment. Eco-enzyme is a herbal antibacterial solution that results from fermentation of organic kitchen waste, sugar, and water. Squeezed orange (*Citrus sinensis* L.) waste is an organic waste that is easy to obtain. This study aimed to determine the the antibacterial effect of 10% eco-enzyme irrigation solution from squeezed orange (*Citrus sinensis* L.) waste on the growth of *F. nucleatum*.

The research was performed using the disc diffusion method (Kirby-Bauer method). Mueller Hinton Agar (MHA) is the used growth medium in this research. A total of 27 samples were divided into 3 test groups: treatment group (10% eco-enzyme solution from squeezed orange (*Citrus sinensis* L.) waste), positive control group (0.2% chlorhexidine), and negative control group (aquadest). Observations were made by measuring the diameter of the inhibition zone in the clear area around the paper disc using a sliding caliper. Data were analyzed using One-Way ANOVA and LSD methods.

The results showed that there was an effect of the test material on the growth of *F. nucleatum* ($p < 0.05$). The negative control group did not develop an inhibition zone, while the treatment group and the positive control group developed an inhibition zone although there was a significant difference ($p < 0,05$). Through this research, it was concluded that the antibacterial effect of the 10% eco-enzyme irrigation solution from squeezed orange (*Citrus sinensis* L.) waste has an inhibitory effect on the growth of *F. nucleatum*.

Keywords: *F. nucleatum*, eco-enzyme, antibacterial, *Citrus sinensis* L.