

## INTISARI

Penyakit periodontal adalah penyakit inflamasi kronis yang menyebar ke jaringan penyangga gigi dan dapat disebabkan oleh *Treponema denticola* (*Td*). Keberhasilan perawatan penyakit periodontal dapat ditingkatkan dengan melakukan terapi adjuvan, salah satunya dengan irigasi subgingiva. *Eco-enzyme* limbah jeruk peras (*Citrus sinensis* L.) memiliki sifat antibakteri. Penelitian ini bertujuan untuk mengetahui pengaruh daya antibakteri larutan irigasi *eco-enzyme* limbah jeruk peras (*Citrus sinensis* L.) 10% terhadap pertumbuhan *Td*.

Metode yang digunakan untuk menguji pengaruh daya antibakteri larutan irigasi *eco-enzyme* limbah jeruk peras (*Citrus sinensis* L.) 10% terhadap pertumbuhan *Td* yaitu dengan metode difusi cakram Kirby-Bauer (*disc diffusion*) pada media pertumbuhan MHA. Larutan uji yang digunakan yaitu larutan irigasi *eco-enzyme* limbah jeruk peras (*Citrus sinensis* L.) 10%, klorheksidin 0,2% sebagai kontrol positif, dan akuades sebagai kontrol negatif. Masing-masing larutan uji terdiri dari sembilan sampel. Pengamatan dilakukan dengan mengukur diameter zona hambat, yaitu daerah bening di sekitar kertas cakram dengan *sliding caliper*. Data dianalisis dengan uji *One-Way ANOVA* dan *Post Hoc LSD*.

Hasil penelitian menunjukkan terdapat zona hambat pada kelompok kontrol positif dan kelompok *eco-enzyme* 10%. Sementara pada kelompok kontrol negatif tidak terdapat zona hambat. Hasil analisis menunjukkan adanya pengaruh signifikan ( $p < 0,05$ ) larutan uji terhadap diameter zona hambat pertumbuhan *Td* dan adanya perbedaan bermakna antarkelompok ( $p < 0,05$ ). Kesimpulan penelitian ini adalah daya antibakteri larutan irigasi *eco-enzyme* limbah jeruk peras (*Citrus sinensis* L.) 10% berpengaruh menghambat pertumbuhan *Treponema denticola*.

**Kata kunci:** *Treponema denticola*, *eco-enzyme*, antibakteri, *Citrus sinensis* L.

## ***ABSTRACT***

Periodontal disease is a chronic inflammatory disease that spreads to the supporting tissues of the teeth and can be caused by the *Treponema denticola* (*Td*). The success of periodontal disease treatment can be increased by carrying out adjuvant therapy, one of which is subgingival irrigation. Eco-enzyme from squeezed orange (*Citrus sinensis* L.) waste has antibacterial properties. The research aimed to determine the antibacterial effect of 10% eco-enzyme irrigation solution from squeezed orange (*Citrus sinensis* L.) waste on the growth of *Td*.

The method used to test the antibacterial effect of 10% eco-enzyme irrigation solution from squeezed orange (*Citrus sinensis* L.) waste on the growth of *Td* was by the Kirby-Bauer disc diffusion method on MHA growth media. The test solutions used were 10% eco-enzyme irrigation solution from squeezed orange (*Citrus sinensis* L.) waste, 0.2% chlorhexidine as a positive control, and aquadest as a negative control. Each test solution consisted of nine samples. Observations were made by measuring the diameter of the inhibition zone, namely the clear area around the paper disc with a sliding caliper. The data was analyzed using One-Way ANOVA test and Post Hoc LSD test.

The result of study showed that there was an inhibition zone around positive control group and 10% eco-enzyme group. Meanwhile, in the negative control group there was no inhibition zone. Analysis result showed there was a significant effect ( $p < 0,05$ ) of the test solution on the diameter of the inhibition zone for the growth of *Td* and there was a significant difference between groups ( $p < 0,05$ ). The study concludes that the antibacterial effect of 10% eco-enzyme irrigation solution from squeezed orange (*Citrus sinensis* L.) waste has an inhibitory effect on the growth of *Treponema denticola*.

**Keywords:** *Treponema denticola*, eco-enzyme, antibacterial, *Citrus sinensis* L.