

INTISARI

Periodontitis merupakan peradangan pada jaringan penyangga gigi yang secara bertahap bisa merusak ligamentum periodontal dan tulang alveolar. Bakteri yang berperan penting pada proses ini diantaranya *Treponema denticola*. Saat ini, penggunaan bahan alami sebagai agen antibakteri menjadi salah satu alternatif terapi pendukung yang dinilai dapat membantu meningkatkan keberhasilan pengobatan periodontitis. Daun kenikir (*Cosmos caudatus* Kunth.) mengandung senyawa aktif yang berpotensi memberikan efek antibakteri. Penelitian ini dilakukan untuk memastikan sejauh mana ekstrak daun kenikir mampu menghambat pertumbuhan *T. denticola* secara *in vitro*.

Pengujian aktivitas antibakteri dilaksanakan dengan metode difusi cakram pada media *Mueller Hinton Agar* (MHA) setelah proses ekstraksi menggunakan metode maserasi. Sebanyak 25 sampel dibagi menjadi lima kelompok: tiga kelompok perlakuan dengan konsentrasi ekstrak 30%, 45%, dan 60%; kontrol positif menggunakan klorheksidin glukonat 0,2%; serta kontrol negatif berupa akuades. Zona hambat kemudian diukur menggunakan sliding caliper, dan data dianalisis dengan uji *One-Way ANOVA* yang kemudian dengan uji *post-hoc* LSD untuk mengidentifikasi perbedaan antar kelompoknya.

Hasil penelitian memperlihatkan bahwa diameter zona hambat terbesar ada pada klorheksidin glukonat 0,2%, diikuti ekstrak daun kenikir konsentrasi 60%, 45%, dan 30%. Sementara itu, akuades tidak memberikan efek penghambatan. Analisis statistik menegaskan bahwa perbedaan konsentrasi ekstrak berpengaruh secara *dose-dependent* terhadap besar zona hambat, dengan hasil signifikan ($p < 0,05$). Berdasarkan temuan tersebut, disimpulkan bahwa pada pengujian *in vitro*, pertumbuhan *Treponema denticola* dapat dihambat oleh ekstrak daun kenikir.

Kata kunci: *Cosmos caudatus* Kunth., antibakteri, *Treponema denticola*, zona hambat

ABSTRACT

Periodontitis is an inflammation of the supporting tissues of the teeth that can cause gradual damage to the periodontal ligament and alveolar bone. One of the bacteria that plays an important role in this process is *Treponema denticola*. Currently, the use of natural ingredients as antibacterial agents is one of the alternative supportive therapies that are considered to help improve the success of periodontitis treatment. Kenikir leaves (*Cosmos caudatus* Kunth.) are known to contain active compounds that have the potential to provide antibacterial effects. This study was conducted to determine the extent to which kenikir leaf extract can inhibit the growth of *T. denticola in vitro*.

Antibacterial activity testing was carried out using the disc diffusion method on *Mueller Hinton Agar* (MHA) media after extraction using the maceration method. A total of 25 samples were divided into five groups: three treatment groups with extract concentrations of 30%, 45%, and 60%; a positive control using 0.2% chlorhexidine gluconate; and a negative control using distilled water. The inhibition zones were then measured using a sliding caliper, and the data were analyzed using a One-Way ANOVA test followed by an LSD post-hoc test to determine the differences between groups.

The results showed that the largest inhibition zone diameter was found in 0.2% chlorhexidine gluconate, followed by 60%, 45%, and 30% kenikir leaf extracts. Meanwhile, distilled water did not have an inhibitory effect. Statistical analysis confirmed that differences in extract concentration had a dose-dependent effect on the size of the inhibition zone, with significant results obtained ($p < 0.05$). Based on these findings, it can be concluded that kenikir leaf extract has the ability to inhibit the growth of *Treponema denticola* in the *in vitro* test.

Keywords: *Cosmos caudatus* Kunth., antibacterial, *Treponema denticola*, inhibition zone