

INTISARI

Aggregatibacter actinomycetemcomitans adalah bakteri yang menginisiasi terjadinya penyakit periodontal. Bakteri *Aggregatibacter actinomycetemcomitans* dapat dikurangi menggunakan bahan herbal yang memiliki sifat antibakteri yaitu biji adas (*Foeniculum vulgare*) dengan kandungan anetol, flavonoid, saponin, dan tanin yang berpotensi sebagai bahan antibakteri. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak etanolik biji adas (*Foeniculum vulgare*) dalam menghambat pertumbuhan bakteri periodontopatogen *Aggregatibacter actinomycetemcomitans*.

Metode yang digunakan untuk mengetahui daya hambat ekstrak etanolik biji adas (*Foeniculum vulgare*) terhadap bakteri *Aggregatibacter actinomycetemcomitans* adalah metode difusi cakram dengan media agar MHA. Terdapat 5 kelompok dalam penelitian ini yaitu ekstrak etanolik biji adas 5%, 10%, 20%, kontrol positif klorheksidin glukonat 0,2% dan kontrol negatif akuades steril. Setiap kelompok terdiri dari 5 sampel. Pengukuran diameter zona hambat dilakukan dengan *sliding caliper* dan data dianalisis dengan uji *One-Way ANOVA* dan *Post-hoc* LSD.

Hasil uji ANOVA menunjukkan adanya perbedaan diameter zona hambat yang signifikan ($p < 0,05$) antar bahan uji terhadap bakteri *Aggregatibacter actinomycetemcomitans*. Hasil uji *Post-hoc* LSD adalah terdapat perbedaan bermakna antar kelompok larutan ekstrak etanolik biji adas 5%, 10%, 20%, kontrol positif, dan kontrol negatif terhadap seluruh kelompok uji. Kesimpulan penelitian ini adalah larutan ekstrak etanolik biji adas (*Foeniculum vulgare*) berpengaruh kuat menghambat pertumbuhan bakteri periodontopatogen *Aggregatibacter actinomycetemcomitans* pada konsentrasi 10% dan 20%.

Kata kunci: biji adas (*Foeniculum vulgare*), ekstrak etanolik, *Aggregatibacter actinomycetemcomitans*, daya hambat, antibakteri

ABSTRACT

Aggregatibacter actinomycetemcomitans is identified as a bacterium that initiates the occurrence of periodontal disease. The bacterium *Aggregatibacter actinomycetemcomitans* could be reduced using herbal materials with antibacterial properties, specifically fennel seeds (*Foeniculum vulgare*), which contained anethole, flavonoids, saponins, and tannins that had potential as antibacterial agents. This study was aimed at determining the effect of ethanolic extract of fennel seeds (*Foeniculum vulgare*) on inhibiting the growth of the periodontopathogenic bacterium *Aggregatibacter actinomycetemcomitans*.

The method was used to determine the inhibitory effect of the ethanolic extract of fennel seeds (*Foeniculum vulgare*) on the bacterium *Aggregatibacter actinomycetemcomitans* was the disk diffusion method with MHA agar medium. Five groups were established in this study, including 5%, 10%, and 20% ethanolic extract of fennel seeds, 0.2% chlorhexidine gluconate as a positive control, and sterile distilled water as a negative control. Each group consisted of five samples. The diameter of the inhibition zones was measured using a sliding caliper, and the data were analyzed using One-Way ANOVA and Post-hoc LSD tests.

The results of the ANOVA test indicated a significant difference ($p < 0.05$) in the diameter of the inhibition zones among the tested materials against the bacterium *Aggregatibacter actinomycetemcomitans*. The results of the Post-hoc LSD test showed significant differences among the groups of 5%, 10%, and 20% ethanolic extract of fennel seeds, the positive control, and the negative control across all test groups. This study was concluded that the ethanolic extract of fennel seeds (*Foeniculum vulgare*) significantly inhibited the growth of the periodontopathogenic bacterium *Aggregatibacter actinomycetemcomitans* at concentrations of 10% and 20%.

Keywords: fennel seeds (*Foeniculum vulgare*), ethanolic extract, *Aggregatibacter actinomycetemcomitans*, inhibitory effect, antibacterial