

## INTISARI

Ketumbar merupakan keanekaragaman hayati yang di dalam ekstraknya memiliki aktivitas antibakteri. Daya antibakteri tersebut juga dimiliki oleh asam laurat. Sifat antibakteri ini dapat digunakan untuk menghambat pertumbuhan mikroorganisme di rongga mulut yang dapat bersifat patogen jika dipengaruhi oleh faktor predisposisi, salah satunya *Staphylococcus aureus*. Tujuan dari penelitian ini yaitu untuk mengetahui pengaruh penambahan asam laurat pada ekstrak biji ketumbar fraksinasi etil asetat terhadap diameter zona hambat pertumbuhan bakteri *S. aureus*.

Ekstrak biji ketumbar fraksinasi etil asetat dengan penambahan asam laurat dilakukan uji antibakteri menggunakan metode difusi cakram. Uji dilakukan pada 4 kelompok, yaitu Tween 20 1% (kontrol negatif), ekstrak biji ketumbar fraksinasi etil asetat 3,2%, campuran asam laurat 4% dan ekstrak biji ketumbar fraksinasi etil asetat 3,2%, dan klorheksidin glukonat 0,2% (kontrol positif) sebanyak enam kali pengulangan. Kertas cakram direndam dalam larutan uji dan diletakkan pada media MHA yang telah dilakukan inokulasi bakteri *S. aureus*. Diameter zona hambat diukur menggunakan jangka sorong ketelitian 0,001 mm setelah diinkubasi selama 1x24 jam dengan suhu 37°C. Analisis data hasil penelitian dilakukan dengan uji *One-way ANOVA* dan *Post hoc* dengan metode *Games Howell* dengan taraf signifikansi 95%.

Hasil analisis pengujian data *One-way ANOVA*, diameter zona hambat menunjukkan adanya pengaruh yang signifikan ( $\text{sig} < 0,05$ ) antara kelompok kontrol negatif, kelompok perlakuan ekstrak biji ketumbar fraksinasi etil asetat 3,2%, kelompok perlakuan campuran asam laurat 4% dan ekstrak biji ketumbar fraksinasi etil asetat 3,2%, dan kelompok kontrol positif. Kesimpulan penelitian ini adalah penambahan asam laurat pada biji ketumbar fraksinasi etil asetat memiliki pengaruh terhadap diameter zona hambat pertumbuhan bakteri *S. aureus*.

**Kata kunci:** Ekstrak Biji Ketumbar, Asam Laurat, *Staphylococcus aureus*, Zona hambat.

## ***ABSTRACT***

Coriander is recognized as a biodiversity that possesses antibacterial activity in its extract. This antibacterial property also exists in lauric acid. These antibacterial characteristics can be utilized to inhibit the growth of microorganisms in the oral cavity, which can become pathogenic when influenced by predisposing factors, one of which is *Staphylococcus aureus*. The objective of this study is to determine the effect of adding lauric acid to the ethyl acetate fraction of coriander seed extract on the diameter of the inhibition zone of antibacterial activity against *S. aureus*.

Antibacterial testing was conducted using the disk diffusion method with ethyl acetate fractionated coriander seed extract supplemented with lauric acid. The tests were performed on four groups: Tween 20 1% (negative control), ethyl acetate fractionated coriander seed extract 3.2%, a mixture of 4% lauric acid and 3.2% ethyl acetate fractionated coriander seed extract, and chlorhexidine gluconate 0.2% (positive control), with six repetitions for each group. The paper discs were soaked in the test solution and placed on MHA media that had been inoculated with *S. aureus* bacteria. The diameter of the inhibition zones was measured using a caliper with an accuracy of 0.001 mm after incubation for 24 hours at 37°C. Data analysis was performed using One-way ANOVA and post hoc testing with the Games-Howell method at a significance level of 95%.

The results of the One-way ANOVA data analysis showed a significant effect ( $\text{sig} < 0.05$ ) on the diameter of the inhibition zones among the negative control group, the group treated with ethyl acetate fractionated coriander seed extract 3.2%, the group treated with a mixture of 4% lauric acid and 3.2% ethyl acetate fractionated coriander seed extract, and the positive control group. It was concluded that the addition of lauric acid to ethyl acetate fractionated coriander seed extract has an effect on the diameter of the inhibition zone against the growth of *S. aureus* bacteria.

**Keywords:** Coriander Seed Extract, Lauric Acid, *Staphylococcus aureus*, Inhibition Zone Diameters