INTISARI

Karies gigi merupakan penyakit infeksi kronis yang banyak diderita oleh manusia. *Streptococcus mutans* adalah bakteri gram positif fakultatif anaerob yang dikenal sebagai penyebab utama karies gigi. Biji ketumbar diketahui merupakan antibakteri yang kuat karena kandungan senyawa linalool yang dominan. Resveratrol juga terbukti memiliki aktivitas antibakteri bahkan pada konsentrasi terendah. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan resveratrol pada ekstrak biji ketumbar fraksinasi etil asetat terhadap pertumbuhan *S. mutans*.

Penelitian ini dilakukan dengan menggunakan metode difusi cakram. Pengujian dilakukan sebanyak lima kali replikasi serta menggunakan lima kelompok uji yakni larutan ekstrak biji ketumbar fraksinasi etil asetat konsentrasi 6,25%, larutan resveratrol konsentrasi 1,25%, larutan campuran antara ekstrak biji ketumbar fraksinasi etil asetat 6,25% dengan resveratrol 1,25%, klorheksidin 0,2% (kontrol positif), dan *tween* 20 1% (kontrol negatif). Data hasil penelitian berupa diameter zona hambat lalu dianalisis menggunakan uji *One-way ANOVA* dan dilanjutkan dengan uji *Post Hoc Games-Howell.*

Hasil pengukuran diameter zona hambat menunjukkan kelompok kombinasi ekstrak biji ketumbar dengan resveratrol menghasilkan rerata diameter zona hambat 8,11 mm, ekstrak biji ketumbar menghasilkan rerata 7,64 mm, dan resveratrol menghasilkan rerata 6,33 mm. Kelompok kontrol positif menghasilkan diameter zona hambat paling luas yakni 21,94 mm sedangkan kontrol negatif tidak menghasilkan zona hambat. Hasil uji *One-way ANOVA* didapatkan ($p<0,05$) menunjukkan bahwa terdapat perbedaan yang signifikan antar kelompok uji. Namun, hasil uji *Post Hoc Games-Howell* menunjukkan tidak ada perbedaan yang signifikan antar ketiga kelompok perlakuan. Kesimpulan dari penelitian ini bahwa penambahan resveratrol 1,25% pada ekstrak biji ketumbar 6,25% tidak berpengaruh terhadap pertumbuhan *S. mutans* ATCC 25175.

Kata kunci: Resveratrol, Ekstrak Biji Ketumbar, *S. mutans*, Antibakteri

ABSTRACT

Dental caries is a chronic infectious disease that remains widely prevalent in humans. *Streptococcus mutans* is a Gram-positive facultative anaerobic bacterium recognized as the primary etiological agent of dental caries. Coriander seeds (*Coriandrum sativum*) are known to possess antibacterial properties due to their high content of linalool, while resveratrol has also been reported to exhibit antibacterial activity even at low concentrations. This study aimed to evaluate the effect of adding resveratrol to ethyl acetate fractionated coriander seed extract on the growth of *S. mutans*.

This study employed the disc diffusion method with five replications and five experimental groups, consisting of ethyl acetate fractionated coriander seed extract at a concentration of 6,25%, resveratrol solution at a concentration of 1,25%, a combination of ethyl acetate fractionated coriander seed extract (6,25%) and resveratrol (1,25%), 0,2% chlorhexidine as a positive control, and 1% Tween 20 as a negative control. Antibacterial activity was assessed based on the diameter of the inhibition zone formed, and the data were analyzed using *one-way ANOVA* followed by the *Games–Howell post hoc test*.

The results showed that the combination of coriander seed extract and resveratrol produced a mean inhibition zone diameter of 8.11 mm, while coriander seed extract alone produced a mean diameter of 7.64 mm, and resveratrol alone produced a mean diameter of 6.33 mm. The positive control exhibited the largest inhibition zone with a mean diameter of 21.94 mm, whereas the negative control showed no inhibitory zone. *One-way ANOVA* analysis revealed a statistically significant difference among the tested groups ($p<0,05$). However, the *Post Hoc Games–Howell* test indicated no significant difference among the treatment groups. These findings suggest that the addition of 1.25% resveratrol to 6.25% coriander seed extract did not significantly enhance the inhibitory effect against *S. mutans* ATCC 25175.

Keywords: Resveratrol, Coriander Seed Extract, *Streptococcus mutans*, Antibacterial