UJI AKTIVITAS ANTIMIKROBA KRIM MINYAK CENGKEH (*Syzygium aromaticum* L.) TERHADAP *Staphylococcus aureus, Escherichia coli, Candida albicans,* dan *Aspergillus niger*

ABSTRAK

Infeksi yang disebabkan oleh bakteri dan jamur masih menjadi masalah kesehatan yang sering terjadi, khususnya pada infeksi kulit. Minyak cengkeh (*Syzygium aromaticum* L.) diketahui mengandung senyawa eugenol yang memiliki aktivitas antimikroba. Penelitian ini bertujuan untuk mengetahui aktivitas antibakteri dan antijamur sediaan krim minyak cengkeh terhadap bakteri *Staphylococcus aureus, Escherichia coli,* serta jamur *Candida albicans* dan *Aspergillus niger*. Penelitian ini merupakan penelitian eksperimental dengan menggunakan metode difusi agar untuk mengukur diameter zona hambat. Hasil penelitian menunjukkan bahwa krim minyak cengkeh konsentrasi 20% mampu menghambat pertumbuhan mikroorganisme uji. Diameter zona hambat terhadap *Staphylococcus aureus* pada pengulangan I, II, dan III masing-masing sebesar 18,03 mm;18,02 mm; dan 19,00 mm dengan rata-rata 18,35 ± 0,45 mm. Terhadap *Escherichia coli* pada pengulangan I, II, dan III diperoleh diameter 18,00 mm; 15,00 mm; dan 15,02 mm dengan rata-rata 16,01 ± 1,40 mm. Aktivitas antijamur terhadap *Candida albicans* pada pengulangan I, II, dan III menunjukkan diameter zona hambat 20,03 mm; 21,03 mm; dan 20,07 mm dengan rata-rata 20,38 ± 0,46 mm, sedangkan terhadap *Aspergillus niger* pada pengulangan I, II, dan III sebesar 19,05 mm; 18,04 mm; dan 18,03 mm dengan rata-rata 18,37 ± 0,47 mm. Diameter zona hambat terbesar diperoleh pada *Candida albicans* (20,38 mm), diikuti *Aspergillus niger* (18,37 mm), *Staphylococcus aureus* (18,35 mm), dan *Escherichia coli* (16,01 mm). Berdasarkan klasifikasi Davis dan Stout, seluruh diameter zona hambat termasuk kategori kuat hingga sangat kuat, sehingga krim minyak cengkeh berpotensi dikembangkan sebagai sediaan topikal antimikroba berbasis bahan alam.

Kata Kunci: minyak cengkeh, cengkeh (*Syzygium aromaticum* L), krim, antibakteri, antijamur.

Antimicrobial Activity Test of Clove Oil Cream (*Syzygium aromaticum* L.) Against *Staphylococcus aureus*, *Escherichia coli*, *Candida albicans*, and *Aspergillus niger*

ABSTRACT

Infections caused by bacteria and fungi remain common health problems, particularly in skin infections. Clove oil (*Syzygium aromaticum* L.) is known to contain eugenol, a compound with antimicrobial activity. This study aimed to determine the antibacterial and antifungal activities of clove oil cream against *Staphylococcus aureus*, *Escherichia coli*, *Candida albicans*, and *Aspergillus niger*. This study was conducted experimentally using the agar diffusion method to measure the diameter of inhibition zones. The results showed that clove oil cream at a concentration of 20% was able to inhibit the growth of the tested microorganisms. The inhibition zone diameters against *Staphylococcus aureus* in replications I, II, and III were 18.03 mm, 18.02 mm, and 19.00 mm, respectively, with an average of 18.35 ± 0.45 mm. Against *Escherichia coli*, the inhibition zone diameters in replications I, II, and III were 18.00 mm, 15.00 mm, and 15.02 mm, respectively, with an average of 16.01 ± 1.40 mm. The antifungal activity against *Candida albicans* in replications I, II, and III showed inhibition zone diameters of 20.03 mm, 21.03 mm, and 20.07 mm, respectively, with an average of 20.38 ± 0.46 mm, while against *Aspergillus niger* the diameters were 19.05 mm, 18.04 mm, and 18.03 mm, respectively, with an average of 18.37 ± 0.47 mm. The largest inhibition zone was observed in *Candida albicans* (20.38 mm), followed by *Aspergillus niger* (18.37 mm), *Staphylococcus aureus* (18.35 mm), and *Escherichia coli* (16.01 mm). Based on the Davis and Stout classification, all inhibition zone diameters were categorized as strong to very strong. Therefore, clove oil cream has the potential to be developed as a natural topical antimicrobial preparation.

Keywords: clove oil, *Syzygium aromaticum* L, cream, antibacterial, antifungal.