INTISARI

Thermoplastic nylon salah satu bahan plat gigi tiruan yang memiliki kekurangan yaitu bersifat mudah menyerap air sehingga menyebabkan permukaan plat gigi tiruan menjadi kasar, memungkinkan mudah terjadi pertumbuhan bakteri *Staphylococcus aureus.* Daun kemangi *(Ocimum basilicum L.)* mengandung senyawa aktif sebagai antibakteri seperti tanin dan flavonoid. Tujuan dari penelitian ini adalah untuk mengkaji pengaruh konsentrasi ekstrak daun kemangi terhadap pertumbuhan *Staphylococcus aureus* pada plat gigi tiruan *thermoplastic nylon.*

Penelitian ini menggunakan spesimen *thermoplastic nylon* sebanyak 24 buah berupa cakram dengan diameter 10 mm dan tebal 1,5 mm. Subjek penelitian direndam dalam saliva buatan selama 1 jam, setelah itu direndam dalam suspensi *Staphylococcus aureus* dalam media *Brain-Heart Infusion Broth* (BHI-B) selama 24 jam pada suhu 37°C. Subjek penelitian dibagi menjadi empat kelompok: kelompok kontrol dengan akuades steril, konsentrasi ekstrak daun kemangi 6,25%, 12,5%, dan 25%. Masing-masing kelompok direndam selama 15 menit. Sebanyak 0,01 ml dari larutan pengenceran 10^{-3} ditanam dalam media *Mannitol Salt Agar* (MSA) dan diinkubasi selama 24 jam pada suhu 37°C. Subjek penelitian dihitung jumlah koloni *Staphylococcus aureus* menggunakan *colony counter.* Data yang diperoleh dilakukan analisa menggunakan *One-way Anova* dan uji LSD.

Hasil analisis *One-way Anova* menunjukkan terdapat perbedaan bermakna konsentrasi ekstrak daun kemangi 6,25%, 12,5%, dan 25% terhadap pertumbuhan *Staphylococcus aureus* ($p < 0,05$). Hasil analisis LSD menunjukkan perbedaan bermakna antar kelompok perlakuan pada plat gigi tiruan *thermoplastic nylon* ($p < 0,05$). Kesimpulan dari penelitian adalah konsentrasi ekstrak daun kemangi 25% paling berpengaruh dalam menghambat pertumbuhan *Staphylococcus aureus* pada plat gigi tiruan *thermoplastic nylon.*

Kata kunci: *thermoplastic nylon, Staphylococcus aureus,* daun kemangi *(Ocimum basilicum L.)*

ABSTRACT

Thermoplastic nylon one of denture base material that has a deficiency which is to easily absorb water which cause the surface of the denture to become rough, allows the bacteria *Staphylococcus aureus* to grow easily. Basil leave *(Ocimum basilicum L.)* contain active compound as an antibacterial such as tannin and flavonoid. The purpose of this research is to examine the effect of concentration of basil leaf extract on the growth *Staphylococcus aureus* of thermoplastic nylon denture base.

This research used 24 pieces of thermoplastic nylon in the form of disc with a diameter of 10 mm and 1.5 mm of thickness. The research subject is soaked in artificial saliva for 1 hour, and then it is soaked in *Staphylococcus aureus* in a media of Brain-Heart Infusion Broth (BHI-B) for 24 hours at 37°C. The research subject is divided into four groups: control group with sterile aquades, concentration of basil leaf 6.25%, 12.5%, and 25%. Each group soaked for 15 minutes. As much as 0.01 ml of 10^{-3} dilution solution was planted in Mannitol Salt Agar (MSA) media and incubated for 24 hours at 37°C. The research subject was calculated in the numbers of *Staphylococcus aureus* colonies using colony counter. The data obtained is analyzed using One-way Anova and LSD test.

The result of One-way Anova analysis showed that there are significant differences in the effect of the basil leaf extract concentration of 6.25%, 12.5% and 25% on the growth of *Staphylococcus aureus* ($p > 0.05$). LSD analysis result showed significant differences between treatment groups on thermoplastic nylon denture base ($p > 0.05$). The conclusion of the research is that the basil leaf concentration of 25% has the most influence in inhibiting the growth of *Staphylococcus aureus* on thermoplastic nylon denture base.

Key words: thermoplastic nylon, *Staphylococcus aureus*, basil leave *(Ocimum basilicum L.)*