

INTISARI

Bahan kumur dapat menghambat pembentukan plak gigi, membunuh bakteri, dan mencegah bau mulut. *Pseudomonas aeruginosa* (*P. aeruginosa*) bermanifestasi di mulut pada penderita periodontitis. Senyawa fenolik pada ekstrak kulit batang jambu mete dapat berperan sebagai antibakteri. Nano kitosan memiliki sifat antibakteri. Penelitian ini bertujuan untuk mengetahui efek penambahan berbagai konsentrasi nano kitosan pada bahan kumur ekstrak kulit batang jambu mete terhadap daya hambat pertumbuhan *P. aeruginosa*.

Penelitian dilakukan dengan membuat 4 kelompok bahan kumur dengan ekstrak kulit batang jambu mete 0,7 mL, 0,1 mL sorbitol, 0,15 mL *peppermint* dalam akuades. Nano kitosan sebesar 0%, 1%, 2%, dan 3% ditambahkan ke dalam masing-masing kelompok. Bakteri *P. aeruginosa* ditanam dalam media MHA, kemudian bahan kumur sebanyak 50 µl diletakkan dalam sumuran berdiameter 7 mm pada media MHA. Media dilakukan inkubasi selama 24 jam dalam suhu 37°C. Diameter zona hambat diukur menggunakan jangka sorong. Data yang diperoleh dianalisis dengan ANAVA satu jalur dan uji *post hoc Games Howell* dengan signifikansi 95%.

Hasil penelitian menunjukkan rerata diameter zona hambat adalah 9,76±0,38 mm (kelompok 0%), 7,36±0,19 (kelompok 1%), 5,96±0,50 (kelompok 2%), dan 4,88±0,38 (kelompok 3%). Uji ANAVA menunjukkan adanya pengaruh pada penambahan berbagai konsentrasi nano kitosan pada bahan kumur ekstrak kulit batang jambu mete terhadap daya hambat *P. aeruginosa* ($p < 0,05$). Kesimpulan penelitian ini adalah penambahan nano kitosan berbagai konsentrasi pada bahan kumur ekstrak kulit batang jambu mete berpengaruh menurunkan daya hambat pertumbuhan *P. aeruginosa*.

Kata kunci: Kulit batang jambu mete, konsentrasi, nano kitosan, daya hambat, *P. aeruginosa*.

ABSTRACT

Mouthwash ingredients can inhibit the formation of dental plaque, kill bacteria, and prevent bad breath. *Pseudomonas aeruginosa* (*P. aeruginosa*) manifests in the mouth in patients with periodontitis. The phenolic compounds in cashew nut bark extract can act as an antibacterial. Nano chitosan has antibacterial properties. This research aims to determine the effect of adding various concentrations of nano chitosan to the cashew bark extract mouth rinse on the growth inhibition of *P. aeruginosa*.

The research was carried out by making 4 groups of mouthwash ingredients with 0.7 mL cashew bark extract, 0.1 mL sorbitol, and 0.15 mL peppermint in aquades. Nano chitosan of 0%, 1%, 2%, and 3% was added to each group. *Pseudomonas aeruginosa* were grown in MHA media, and then 50µl samples of mouthwash were placed in 7 mm diameter wells in MHA media. Incubation was carried out for 24 hours at 37°C. The diameter of the inhibition zone was measured using a caliper. The data obtained were analyzed using one-way ANOVA and post-hoc test Games Howell with a significance of 95%.

The results showed that the mean diameter of the inhibition zone was 9.76 ± 0.38 mm (0% group), 7.36 ± 0.19 (1% group), 5.96 ± 0.50 (2% group), and 4.88 ± 0.38 (3% group). The ANOVA test showed that there was an effect on the addition of various concentrations of nano chitosan to the cashew bark extract mouth rinse on the inhibitory power of *P. aeruginosa* ($p < 0.05$). This research concludes that the addition of nano chitosan of various concentrations to the cashew bark extract mouthwash has effect of reducing the growth inhibition of *P. aeruginosa*.

Keywords: Cashew nut bark, concentration, nano chitosan, inhibitory power, *P. aeruginosa*.