

## INTISARI

*Fusobacterium nucleatum* merupakan bakteri dominan yang menyebabkan penyakit periodontal. Pertumbuhan bakteri *F. nucleatum* dapat dihambat dengan tanaman herbal salah satunya ekstrak kulit kayu manis (*Cinnamomum burmannii*). Ekstrak kulit kayu manis (*Cinnamomum burmannii*) mengandung bahan anti bakteri, yaitu minyak atsiri, flavonoid, tanin dan saponin. Tujuan penelitian ini untuk mengetahui ekstrak kulit kayu manis (*Cinnamomum burmannii*) konsentrasi 50% paling efektif dibandingkan konsentrasi 20%, 30%, 40% dalam menghambat pertumbuhan bakteri *Fusobacterium nucleatum*.

Penelitian menggunakan 5 plat agar darah yang telah diinokulasikan *F. nucleatum*. Setiap plat terdiri dari 5 sumuran yang ditetesi ekstrak kulit kayu manis (*Cinnamomum burmannii*) konsentrasi 20%, 30%, 40%, 50% dan klorheksidin glukonat 0,2% sebagai kontrol positif. Selanjutnya plat agar darah diinkubasi selama 24 jam. Zona hambat yang terbentuk dihitung dengan menggunakan jangka sorong dan dilanjutkan analisis statistik.

Hasil uji *one way Anova* menunjukkan bahwa konsentrasi ekstrak kulit kayu manis berpengaruh signifikan terhadap daya hambat pertumbuhan *F. nucleatum* ( $p < 0,05$ ). Hasil uji LSD menunjukkan bahwa terdapat perbedaan signifikan antara kelompok ekstrak kulit kayu manis konsentrasi 20%, 30%, 40% terhadap klorheksidin glukonat 0,2% ( $p < 0,05$ ). Terdapat perbedaan yang signifikan antara kelompok ekstrak kulit kayu manis konsentrasi 20% terhadap konsentrasi 50% ( $p < 0,05$ ). Kesimpulan penelitian ini adalah ekstrak kulit kayu manis (*Cinnamomum burmannii*) konsentrasi 50% paling efektif dibandingkan konsentrasi 20%, 30%, dan 40% dalam menghambat pertumbuhan bakteri *Fusobacterium nucleatum*.

Kata kunci : Ekstrak kulit kayu manis, Penyakit periodontal, *Fusobacterium nucleatum*, Daya hambat pertumbuhan bakteri

### ***ABSTRACT***

*Fusobacterium nucleatum* was the dominant bacteria that caused periodontal disease. The growth of *Fusobacterium nucleatum* can inhibited by natural plant such as the cinnamon bark (*Cinnamomum burmannii*). Extract of cinnamon bark (*Cinnamomum burmannii*) contains anti bacterial agents there were essential oil, flavonoid, tanin and saponin. The aim of this study was to know the cinnamon bark (*Cinnamomum burmannii*) extract 50%'s concentration most effective compared 20%, 30%, and 40%'s concentration to inhibit the growth of *Fusobacterium nucleatum*.

Study used five blood agar plates were inoculated with *F. nucleatum*. Five wells were placed on each plate with extract of cinnamon bark (*Cinnamomum burmannii*) in concentration of 20%, 30%, 40%, 50% and 0,2% clorhexidin gluconat as a positive control. The blood agar plates were incubated for 24 hours. Zone of inhibition were measured by sliding caliper and were analyzed statistically.

One way Anova test showed significant effect between groups on the inhibition of *F. nucleatum* growth ( $p < 0,05$ ). LSD test showed significant differences between groups of cinnamon bark's extract concentration of 20% ,30%, 40%, 50% with clorhexidin gluconat 0,2% ( $p < 0,05$ ). There was significant difference between groups of cinnamon concentration of 20% with 50%'s concentration ( $p < 0,05$ ). It was concluded that the 50%'s concentration of cinnamon extract most effective compared 20% ,30%, and 40%'s concentration to inhibit the growth of *Fusobacterium nucleatum*.

Key words : Cinnamon bark extract, Periodontal disease, *Fusobacterium nucleatum*, Inhibition of bacterial growth