

## INTISARI

Karies gigi merupakan masalah utama dalam penyakit gigi yang dapat mengganggu aktivitas sehari-hari. Karies gigi bermula ketika terjadi penumpukan plak gigi yang juga banyak mengandung bakteri. Bakteri terbanyak pada gigi yang bersifat *acidogenic* yaitu *Streptococcus mutans* (Marsaban, 2007; Madigan, Martinko & Parleer, 2000 ). Minyak atsiri kulit batang kayu manis (*Cinnamomum burmannii* Bl.) yang mengandung *cinnamaldehyde* diketahui memiliki daya antibakteri terhadap bakteri *Bacillus subtilis*, *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Oenococcus oeni* dan *Lactobacillus hilgardii* (WHO, 1999; Figueiredo *et al*, 2007). Penelitian daya antibakteri minyak atsiri kulit batang kayu manis dilakukan untuk mengetahui Kadar Hambat Minimum (KHM) dan Kadar Bunuh Minimum (KBM) terhadap *Streptococcus mutans*

Penelitian ini merupakan jenis penelitian eksperimental murni yang dianalisis statistik dan deskriptif. Kulit batang kayu manis didestilasi dengan destilasi uap dan air untuk mengisolasi minyak atsiri, dan kemudian dilakukan penentuan diameter zona hambat pertumbuhan bakteri *S.mutans* dengan menggunakan metode difusi sumuran. Data hasil pengukuran diameter zona hambat diuji distribusi normalnya dengan Kolmogorov-Smirnov dilanjutkan analisis statistik *one way* ANOVA dan dilanjutkan dengan *LSD test*. Penentuan KHM dan KBM dilakukan dengan metode dilusi padat, kemudian dianalisis secara eksploratif deskriptif.

Hasil penelitian ini menunjukkan bahwa minyak atsiri kulit batang kayu manis mempunyai daya antibakteri terhadap *S.mutans* dengan KHM sebesar 5% dan KBM sebesar 20%.

Kata kunci : Kulit batang kayu manis, kayu manis (*C.burmannii* Bl.), minyak atsiri, daya antibakteri, *Streptococcus mutans*, Kadar Hambat Minimum (KHM), Kadar Bunuh Minimum (KBM)

## ABSTRACT

Dental caries is the main problem in dental disease which may interrupt daily activities. Dental caries begins when there is a dental plaque containing lots of bacteria (Marsaban, 2007; Madigan, Martinko & Parleer, 2000 ). The essential oil of cinnamon tree bark (*Cinnamomum burmannii* Bl.) containing *cinnamaldehyde* are reported to provide antibacterial effect against *Bacillus subtilis*, *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Oenococcus oeni* and *Lactobacillus hilgardii* (WHO,1999; Figueiredo *et al*,2007). A study of antibacterial potency of cinnamon tree bark essential oil to determine the Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) against *Streptococcus mutans*

This was pure experimental study which was analyzed statistically and descriptively. The cinnamon tree bark was distilled by using steam and water distillation in order to get the essential oil this oil was then observed of its bacterial growth inhibition zone diameter by well diffusion method. The data of measurement result of inhibition zones then distribution normal were analyzed with Kolmogorov-Smirnov to ANOVA's one way statistic analysis LSD test. The fixation of MIC and MBC was determined by using solid dilution method. The data was analyzed in descriptive explorative.

Result showed that the essential oil of cinnamon tree barks provide antibacterial potency on *Streptococcus mutans* with 5% MIC and 20% MBC

Keywords: Cinnamon tree bark, cinnamon (*Cinnamomum burmannii* Bl.), essential oil, antibacterial, *Streptococcus mutans*, Minimum Inhibitory Concentration (MIC), Minimum Bactericidal Concentration (MBC)