

PENGARUH SUSU FORMULA-PROPOLIS TERHADAP ZONA HAMBAT BAKTERI *Streptococcus mutans* (*In vitro*)

INTISARI

Karies gigi anak di Indonesia masih memiliki prevalensi yang tinggi sebesar 90% dari total populasi anak. Penyebab utama yang sering terjadi adalah kebiasaan anak mengkonsumsi susu formula sebelum tidur. Kandungan tambahan dalam susu formula diantaranya adalah sukrosa. Sukrosa akan dimetabolisme oleh bakteri *Streptococcus mutans* dan menyebabkan karies gigi. Propolis merupakan bahan alami yang telah banyak diteliti memiliki sifat antibakteri baik terhadap gram positif maupun negatif. Kombinasi antara susu formula dengan propolis juga diperkirakan mampu menghambat bakteri *Streptococcus mutans*. Penelitian ini bertujuan untuk mengetahui pengaruh daya hambat susu formula dengan ekstrak propolis terhadap bakteri *Streptococcus mutans*.

Metode penelitian ini berjenis eksperimental laboratoris rancangan *post test only control group design*, terdiri dari lima kelompok yaitu kelompok kontrol negatif susu formula tanpa pemberian ekstrak propolis, kelompok perlakuan susu formula pemberian ekstrak propolis konsentrasi 4%, 6%, 8%, 10% dilakukan dengan lima kali replikasi. Sampel adalah isolat murni bakteri *Streptococcus mutans*.

Nilai rerata daya hambat dengan masa inkubasi 24 jam pada uji daya hambat bakteri *Streptococcus mutans* adalah K1 (susu formula) 0.00 ± 0.00 , K2 (susu formula + propolis 4%) 0.07 ± 0.10 , K3 (susu formula + propolis 6 %) 0.16 ± 0.16 , K4 (susu formula + propolis 8%) 0.21 ± 0.14 , K5 (susu formula + propolis 10%) 0.25 ± 0.18 .

Kesimpulan yang diperoleh dengan menggunakan uji korelasi *spearman* adalah terdapat pengaruh yang signifikan pada susu formula dengan ekstrak propolis terhadap daya hambat *Streptococcus mutans* ($p < 0,05$) secara *in vitro*.

Kata kunci : susu formula, propolis, *Streptococcus mutans*, daya hambat

ABSTRACT

Dental caries children in Indonesia still has a high prevalence at 90% of the total population of children. The main cause of what often happens is the habit of consuming milk formula children before bed. Additional content of the infant formula include sucrose. Sucrose is metabolized by Streptococcus mutans and it effects to caries. Propolis is a natural source that have been researched to have a good non bacterial character towards negative or positive gram. The combination between formulated formulated milk and propolis is also expected to inhibit Streptococcus mutans. The objective of this research is aimed to know influence of inhibit zone in formulated milk with propolis extract towards Streptococcus mutans.

This research was experimental which post test only control group. There were five groups, negative control group of treating formulated milk without propolis extract, positive control group of treating formulated milk with propolis extract in 4%, 6%, 8%, 10% concentration in five replication. The sample was a natural isolate of Streptococcus mutans.

Inhibit zone mean with 1 x 24 hours incubation phase in test of inhibition zone of Streptococcus mutans is K1 (infant milk) 0.00 ± 0.00 , K2 (infant milk + propolis 4%) 0.07 ± 0.10 , K3 (infant milk + propolis 6%) 0.16 ± 0.16 , K4 (infant milk + propolis 8%) 0.21 ± 0.14 , K5 (infant milk + propolis 10%) 0.25 ± 0.18 . Conclusion : The result with spearman test shows that there is significant influence in formulated milk with propolis extract against Streptococcus mutans with in vitro test ($p < 0, 05$).

Keywords : formulated milk, propolis, *Streptococcus mutans*, inhibit zone