

ABSTRACT

(LITERATURE REVIEW)

BACTERIAL INHIBITION TEST OF GREEN BETEL LEAF EXTRACT (*Piper betle* L.) WITH NATURAL INGREDIENTS IN TOOTHPASTE PREPARATIONS

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Dental and oral health problems can be caused by various things such as bacteria. The use of Sodium Lauryl Sulphate (SLS) in toothpaste can also cause permanent taste disturbances, irritation of the epidermis in the oral cavity, severe mucosal ulceration and changes in taste sensitivity. One of the bacteria that can cause dental problems is *Streptococcus mutans*, this bacterium is a normal flora of the oral cavity, but if there is an increase in population it will cause the formation of dental plaque.

Natural ingredients that can be used to treat dental and oral problems are betel (*Piper betle* Linn.). There are phenolic compounds contained in betel leaf essential oil which are antimicrobial and strong antifungal and effectively inhibit the growth of several types of bacteria. The results of the three journals have good organoleptic and pH test results, and are proven to have bacterial inhibition on *Streptococcus mutans* and *Staphylococcus aureus*. The results obtained in the first article, namely toothpaste combination of 10% betel leaf ethanol extract, and 10% lemon peel extract had an effect on the inhibition of the growth of *Streptococcus mutans* bacteria with the greatest inhibitory power of $15.4 \text{ mm} \pm 0.26$.

The results obtained in the first article, namely toothpaste combination of 20% ethanol extract of betel leaf, 3% areca nut, and 1% gambier have an effect on the inhibition of the growth of *Streptococcus mutans* bacteria with the greatest inhibition of $1.35 \text{ mm} \pm 0.37$. In the third article, the results of the preparation of red betel leaf extract toothpaste at F3 (4.5%) with 18.4 mm bacterial inhibition. Therefore, it can be concluded that the preparation of toothpaste from betel leaf has antibacterial effectiveness on bacteria that cause dental and oral problems.

Keywords : Toothpaste, plaque, *Streptococcus mutans*, *Staphylococcus aureus*, betel leaf, bacterial inhibition.