

# **The Study of Potential in Inhibiting the Oral Bacterial by Chemical Substances extracted from Different Breeds of Guava Leaves**

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## **ABSTRACT**

This study, the study of chemical substances from different breeds of guava leaves which contains potential in inhibiting the oral bacterial, was inspired to be study by many factors. The selected breeds of Guava in this study were Local Thai Guava, Bangkok Apple Guava, and Sali Glom Guava. The observable features were the differences of leaves from each breed of Guava. It was found that the leaves of Bangkok Apple Guava had lowest observable area of insect damages, whereas Sali Glom Guava has many spots and holes on its leaves.

The experiments to identify the difference among them were the technique of clear zone measurement by its diameters and the second turbidity measurement by using spectrophotometer measure the different wave length of the liquid nutrient at 540nm in Trypticase Soy Broth. *Staphylococcus aureus* was used as the selected microorganisms to demonstrate the growth development of oral bacterial in this study. The comparison of antimicrobial substances level in Guava leaves demonstrated that Bangkok Apple Guava contained greater concentration

than the others, which demonstrated the highest ability to inhibit the growth of oral microbial. In contrary, Glom Sali Guava contained least amount of antimicrobial substance with lowest ability to inhibit the growth of oral microbial. The reason came from the different sources of their starter breeds that was took for cross breeding. According to this study, Guava leaves definitely contained antimicrobial substances with sufficient level to inhibit the growth of *Staphylococcus aureus*, an oral microbial. However the growth of *Staphylococcus aureus* could be inhibited at different levels as different breeds of Guava leaves contained different concentration of antimicrobial substances and Bangkok apple guava matured leaves at dilution 0.4 g/ml gave the best diameter of clear zone at 1.87 cm. and the lowest was Glom Sali guava young leaves at dilution 0.004 g/ml had diameter of clear zone at 0.10 cm.

For further study, it is quite important to proceed with the idea of inoculating the extracted antimicrobial substance with other oral microbial. If possible *Streptococcus mutans* is further experiment that would do to identify the inhibiting ability. Moreover, test with other bacteria that the cause of mouth bad odor should be performed also.