UNIVERSITI TEKNOLOGI MARA

COMPARISON OF ANTIMICROBIAL ACTIVITY BETWEEN *PHYLLANTHUS ACIDUS* WATER EXTRACT AND COMMERCIAL MOUTHWASH ON ORAL MICROBE

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ABSTRACT

Phyllanthus acidus is a common village tree, especially found in northern region of peninsular Malaysia. *Phyllanthus acidus* or known as chermai has been used traditionally to treat several diseases such as fever and gum infection. This study aims to investigate the effects of *Phyllanthus acidus* water extract on oral bacteria and to compare its antimicrobial activities with the commercial mouthwash products in the market. In this study, two types of commercial mouthwashes which are Listerine® and Thymol solution were used to compare with *Phyllanthus acidus* water extract antimicrobial activities. Antimicrobial activity test was done by using broth microdilution method in a 96 wells round-bottom microtiter plate in order to determine the minimum inhibitory concentration (MIC) of *Phyllanthus acidus* water extract for both *Staphylococcus aureus* and *Lactobacillus casei* bacteria. The result was obtained by observing the ability of the different concentrations of extract to inhibit the growth of bacteria in the wells. From this study, both *Staphylococcus aureus* and *Lactobacillus casei* growth were fully inhibited by *Phyllanthus acidus* water extract at mean concentration of 3.5 mg/ml and 0.55 mg/ml respectively. The antimicrobial effects of *Phyllanthus acidus* water extract were comparable with the commercial mouthwashes. In conclusion, *Phyllanthus acidus* water extract might be used as a mouthwash as it has the ability to kill bacteria that exist in our mouth.