ANTIBACTERIAL ACTIVITY OF *Piper sarmentosum* LEAF AND STEM EXTRACT TOWARDS GRAM-POSITIVE AND GRAM-NEGATIVE BACTERIA

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ABSTRACT

ANTIBACTERIAL ACTIVITY OF *Piper sarmentosum* LEAF AND STEM EXTRACT TOWARDS GRAM-POSITIVE AND GRAM-NEGATIVE BACTERIA

Wild betel (*Piper sarmentosum)* is one of type of dioecious plants that was consumed by Malaysian as their meal. These plants possess wide variety of medicinal benefits which can be obtained through their leaf. Based on previous study, it is discovered that the other parts of *Piper sarmentosum* plants such as fruits and stems can also fight off against certain rice pathogenic bacteria and fungi. Therefore, this present study aims to compare the effectiveness of leaf and stem of *Piper sarmentosum* extract in its bacterial activity. The purpose of conducting this research is to compare the antibacterial properties of *Piper sarmentosum* extract towards Gram-positive and Gram-negative bacteria. 2 parts of *Piper sarmentosum* were used to investigate the antibacterial activity against Gram-positive and Gram- negative bacteria that is stem and leaf. Next, this study aims to compare the antibacterial activities of *Piper sarmentosum* leaf and stem extract towards Gram-positive and Gram-negative bacteria. Based on this experiment, results shows that *Piper sarmentosum* stem extract shows higher antibacterial activities compared to leaf extract with mean zone of inhibition of 1.367cm (*E. coli*) and 1.633cm (*S. aureus*) at extract concentration of 350mg/ml. For the comparison of antibacterial activity for both extract, it was proven that stem extract was effective towards *S. aureus* compared to *E. coli* mean zone of inhibition obtained were 1.633cm and 1.367cm at extract concentration of 350mg/ml. For leaf extract, it was found that this extract is more effective towards Gram-negative bacteria (*E. coli*) compared to Gram-positive bacteria (*S. aureus*) with inhibition zone of 1.433cm and 1.167cm at extract concentration of 350mg/ml. So, based on result, the effectiveness of both leaf and stem extract towards Gram-positive and Gram-negative bacteria can be compared.