EVALUATION ON ANTIBACTERIAL ACTIVITY OF MALAYSIAN TRIGONA HONEY AGAINST *Bacillus licheniformis* AND *Escherichia coli*

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This Final Year Project Report entitled **" Evaluation on Antibacterial Activity of Malaysian Trigona Honey Against *Bacillus Licheniformis* and *Escherichia Coli"*** was submitted by Nafisa Ilani Binti Zu in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

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ABSTRACT

Despite the availability of many antibacterial medicines, antibacterial resistance is regularly reported. Finding a substance with comparable antibacterial characteristics is an alternative solution. Honey made by stingless bees appears to meet the criteria mentioned above. A little stingless bee from the tribe *Meliponini*, *Trigona spp*. was known as '*Kelulut*' in Malaysia. This stingless bee produced honey that was used to heal wounds, boost immunity, destroy bacteria, treat bronchial phlegm, and relieve sore throat, cough, and cold symptoms. The aim of the current study is to investigate the antibacterial activity of Malaysian Trigona Honey against *Bacillus licheniformis* and *Escherichia coli*. In this study, the antibacterial activity of *Trigona spp*. honeys were tested towards *Bacillus licheniformis* and *Escherichia coli* by using disc diffusion method and determination of minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) using broth microdilution method. Disc diffusion method results showed that the inhibition zone was proportional to the concentration of the honey for honey Brand 1 and 2. As the concentration increases, the inhibition zone also increases. Furthermore, results shows that honey Brand 2 exhibited slightly greater inhibition zone compared to Brand 1 towards *B.licheniformis* whereas towards *E.coli* honey Brand 1 showed slightly greater inhibition zone than Brand 2. For this method, one-way ANOVA analysis was carried out for statistical analysis ($p<0.05$). Then, MIC and MBC against *Bacillus licheniformis* and *Escherichia coli* were determined by broth microdilution method.