



**COMPARATIVE STUDY OF ANTIMICROBIAL ACTIVITY
BETWEEN *Centella asiatica*, *Moringae oleifera*, AND *Clitoria
ternatea* AGAINST SELECTED FOODBORNE PATHOGENS**

By

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AUTHOR'S DECLARATION

I hereby declare that the work in this thesis is based on my original work and was carried out in accordance with the regulation of Universiti Teknologi MARA (UITM). This thesis has not been submitted to any other academic institution or non-academic institution for any other degree student or qualification.

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ABSTRACT

Centella asiatica, *Moringae oleifera* and *Clitoria ternatea* are widely used in Malaysian dishes, either to be eaten raw or as part of cooking ingredients. However, their potentials in preventing foodborne pathogens activity are not much explored. Therefore, the aim of this study was to investigate the antimicrobial activities of *Centella asiatica*, *Moringae oleifera* and *Clitoria ternatea* extracts, and their synergistic effect against foodborne pathogens. In this study, the solvent extracts of the plants were tested against *Listeria monocytogenes* and *Escherichia coli*. Tests were done using disc diffusion method for antimicrobial sensitive testing (AST), broth micro dilution method for minimum inhibitory concentration (MIC), and the minimum bactericidal concentration (MBC) by sub culturing the MIC sample in Mueller Hinton agar. The results showed that all plant extracts showed activity against both pathogens. Combination of all three types of extract against *Listeria monocytogenes* exhibited the largest inhibition zone. The AST result was supported by MIC and MBC results in which the combination of all three types of extract scored the lowest MIC and MBC concentration by 25%. In conclusion, *Centella asiatica*, *Moringae oleifera* and *Clitoria ternatea* extract were proven to have antimicrobial activity against the foodborne pathogens. However, the combination of all three types of extract did show some synergistic effect when tested against *Listeria monocytogenes* and *Escherichia coli*. However, the effectiveness of antimicrobial activity may vary in natural host since this study was performed in vitro entirely.