Evaluation of Antimicrobial Efficacy of *Lawsonia inermis* Ethanolic Extracts as Surface Disinfectant

By

NUR AZIRA BINTI CHE AZMI

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DECLARATION

I am here to declare that this thesis is my original work and has not been submitted previously or currently for any other degree at UiTM or any other institution.

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(NUR AZIRA BINTI CHE AZMI)

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ABSTRACT

EVALUATION OF ANTIMICROBIAL EFFICACY OF *Lawsonia inermis* ETHANOLIC EXTRACTS AS SURFACE DISINFECTANT

Lawsonia inermis comes from family of Lythraceae which called as henna in English, Mehndi in India and Inai in Malay. Sunnah of prophet Muhammad state that this henna can give benefit which acts as medication due to its phytochemicals properties. Scientific research has proven that *Lawsonia inermis* extracts has many beneficial properties such as antimicrobial, allophatic, and antioxidant activities. Commercial disinfectant such as dettol consist of triclosan and chloroxylenol which enable to give side effect although function in inhibiting the microorganisms. Triclosan able to give effect towards environment and health while chloroxylenol can cause skin irritation and excessive hair fall. The aim of this study is to evaluate the antimicrobial efficacy between commercial disinfectant with ethanolic extracts of L*awsonia inermis*. The evaluation was determined with ethanolic extraction of *Lawsonia inermis*, biochemical identification of bacteria which are *Candida albicans*, *Acinetobacter baumannii*, *Staphylococcus aureus, Pseudomonas aeruginosa*, *Klesiella pneumoniae* and *Salmonella typhi*. The efficacy was tested on tiles (10x10 cm) then was put into 10 ml neutralizing broth and the organism growth on media was calculated by using colony forming unit for statistical analysis. The result was analysed using one-way anova and showed that *Acinetobacter baumannii*, *Pseudomonas aeruginosa* and *Staphylococcus aureus* are significant because it less than P value (<0.001). The result of this study suggested that *Lawsonia inermis* ethanolic extracts have the ability to inhibit the organisms due to its antimicrobial activity and able to replace commercial disinfectant.

Keywords: *Lawsonia inermis,* disinfectant, ethanol, extraction