

UNIVERSITI TEKNOLOGI MARA

ANTIFUNGAL STUDY of
Lawsonia inermis **AND** *Tamarindus indica*
LEAVES ON SKIN
DERMATOPHYTES FUNGUS
(Trichophyton rubrum)

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AUTHOR'S DECLARATION

I hereby declare that this thesis entitled “Antifungal Study of *Lawsonia inermis* and *Tamarindus indica* Leaves on Skin Dermatophytes Fungus (*Trichophyton rubrum*)” submitted in this dissertation was carried out in accordance with the regulation of Universiti Teknologi MARA. It is original and independent work done by me, during the period of September 2018 until July 2019 unless otherwise indicated as reference work for further completion of thesis. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I hereby acknowledged that I have been supplied with the Academic Rules and Regulations for Bachelor of Science (Hons.) Biology, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Ringworm skin disorder or dermatophytosis is a common skin problem that affect humans and animals. In present times, there have been various antifungal treatments that have been used in treating this problem. However, *Trichophyton rubrum* fungi has developed a resistance towards most antifungal drugs that are expensive and may cause side effects in the long run. Therefore, this study focuses on combating dermatophytosis which is caused by fungi known as *Trichophyton rubrum* by the usage of medical plant which are *Lawsonia inermis* (Henna) and *Tamarindus indica* (Tamarind) leaves. Both of these are believed to have potential in antifungal effects, economical and safer to be commercialized as an antifungal agent. The objectives of this study are to compare both *L. inermis* and *T. indica* effectiveness on different concentrations such as 5 mg/mL, 2.5 mg/mL, 1.25 mg/mL, 0.625 mg/mL and 0.3125 mg/mL against *T. rubrum* as well as to determine the toxicity of both leaves extract. Besides, the method applied in this study for plant extraction is by using maceration and soaking method using 80% ethanol. The in-vitro antifungal assay was carried out by disc diffusion method. Result obtained indicated that Henna (20.80 ± 6.77 mm) showed better antifungal reaction compared to Tamarind (15.07 ± 5.09 mm). Whereas for positive control Itraconazole (23.33 ± 7.90 mm) showed greater antifungal reaction compared to Fluconazole (17.60 ± 8.85 mm). One major trend found in this study was the higher the concentrations (mg/mL) applied for all four groups of Henna, Tamarind, Fluconazole and Itraconazole, the higher the diameter zone inhibition (mm). Furthermore, toxicity assay result have showed least toxic effect on Tamarind at 43.33% mortality of nauplii followed by Henna at 56.67% mortality of nauplii. However, the mortality percentage were found to be increased as concentration increased for all treatments. In conclusion, it is believed that *L. inermis* and *T. indica* crude extract that have been tested have a great potential in antifungal effect against dermophytes of *T. rubrum* and it could be taken as measure in developing new antifungal treatment in order to fight ringworm skin disorder.

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