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SCREENING OF ANTIFUNGAL ACTIVITY OF MAKABUHAY LEAVES (TINOSPORA CRISPA (L.) HOOK.F. & THOMSON) AND KALUMPIT LEAVES (TERMINALIA MICROCARPA DECNE.) ETHANOLIC EXTRACTS AGAINST MALASSEZIA FURFUR

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ABSTRACT

Fungal infections, particularly those caused by Malassezia furfur, remain a persistent global concern due to their association with dandruff and other dermatological conditions. Conventional antifungal treatments such as fluconazole are effective but raise concerns regarding safety, affordability, and recurrence rates. This study investigated the antifungal activity of ethanolic leaf extracts from Tinospora crispa (Makabuhay) and Terminalia microcarpa (Kalumpit), two tropical plants rich in bioactive compounds, as potential alternative treatments against M. furfur. Extracts were prepared at concentrations of 25%, 50%, and 75% using ethanol, with fluconazole and distilled water serving as positive and negative controls, respectively. The Agar Well Diffusion method was employed on Sabouraud Dextrose Agar (SDA) supplemented with olive oil to measure zones of inhibition (ZOI). Results revealed that T. crispa demonstrated antifungal activity at 75% concentration, producing inhibition zones of 8 mm, 11 mm, and 13 mm, with a mean of 10.67 ± 2.52 mm. Statistical analysis confirmed a significant difference ($p = 0.002$) compared to the control. In contrast, T. microcarpa exhibited no antifungal activity at any tested concentration, indicating limited or

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absent efficacy against M. furfur. Fluconazole, as expected, produced consistent inhibition zones averaging 19.67 mm. These findings suggest that T. crispa possesses antifungal properties at higher concentrations, supporting its potential role as a natural, cost-effective alternative treatment for Malassezia-related infections. Further research exploring optimized extraction methods, phytochemical profiling, and in vivo applications is recommended to validate and expand its therapeutic potential.

Keywords: *Malassezia furfur, antifungal activity, Tinospora crispa, Terminalia microcarpa, dandruff, Agar Well Diffusion, ethanol extract*