Effectiveness of *Cinnamomum verum* on the Growth Inhibition of Oral Fungus, *Candida albicans*

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Natural plant products are increasingly being used to manage oral candidiasis due to their safety and effectiveness. *Cinnamomum verum*, commonly known as true cinnamon, contains bioactive compounds with significant antifungal potential. This study investigates its effectiveness against *Candida albicans*, a major cause of oral candidiasis. The study aimed to evaluate the effectiveness of methanolic and water extracts of the bark of the Gemunu and Wijaya varieties of *C. verum* against *C. albicans*. Healthy, undamaged plant materials were obtained from the National Cinnamon Research and Training Centre in Sri Lanka and authenticated at the National Herbarium, Peradeniya. Methanolic extracts were prepared using an ultrasound sonicator, while water extracts were prepared using the freeze-drying method. The agar well diffusion method was used to determine antifungal activity. The tests were conducted in triplicate, with results presented as mean ± standard deviation. Extracts from both varieties in methanol and water were tested at various concentrations. Data were analysed using two-way analysis of variance. Methanolic extracts exhibited concentration-dependent inhibition. The maximum inhibition zone for the Gemunu variety was 11.84 ± 0.29 mm at 25.0 mg/ml. The Wijaya variety showed a maximum inhibition zone of 4.67 ± 0.58 mm at the same concentration. In contrast, water extracts exhibited relatively lower antifungal activity, with Gemunu showing an inhibition zone of 7.34 ± 0.58 mm and Wijaya showing 5.67 ± 0.58 mm at 40.0 mg/ml. A significant difference was observed between the inhibition zones of the Gemunu and Wijaya varieties of *C. verum* ($p < 0.001$) in both methanol and water extracts. Results suggest that methanolic extracts possess more potent antifungal compounds, especially from the Gemunu variety. Considering the remarkable efficacy of *C. verum* methanolic extracts, they hold great potential as a natural remedy against *C. albicans* infections. Further studies are recommended to identify specific bioactive compounds and evaluate their effectiveness *in vivo* to explore their potential for clinical applications.

Keywords: Antifungal activity, Gemunu variety, inhibition zone, methanolic extract, well diffusion method