

Antifungal Activity of *Dryobalanops aromatica* Oils against *Candida albicans* and *Candida utilis*

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Structured Abstract

Background: *Candida albicans* and *Candida utilis* are mostly known as opportunistic fungi that can lead to infections such as candidiasis. Multidrug resistance features allow these *Candida* spp. to remain within the host, frequently failing treatment. This study aims to utilize *D. aromatica* as an alternative medicine from a traditional natural source for treating candidiasis. These oils are considered to possess antifungal properties with determination of antifungal activity of *D. aromatica* against *C. albicans* and *C. utilis*, the minimum inhibitory concentration (MIC) and minimum fungicidal concentration (MFC) of *D. aromatica*, and the percentage of inhibition diameter growth (PIDG) of *C. albicans* and *C. utilis*.

Methods: The *D. aromatica* oils were diluted with hexane and applied as an antifungal agent on *C. albicans* and *C. utilis* through the disc diffusion method. The broth microdilution method determined the MIC. The MIC was detected using resazurin dye as an indicator by observing the colour change. The selected concentrations in the wells were inoculated on the Potato Dextrose Agar to detect the MFC. The PIDG was evaluated to assess the significant effect of the *D. aromatica* oils as an antifungal agent compared to commercial antifungal.

Results: Study showed that *D. aromatica* oils significantly inhibited tested fungi, as evidenced by the appearance of clear inhibition zones for *C. albicans* and *C. utilis* through the disc diffusion method. The MIC values for *C. albicans* and *C. utilis* were determined to be 27.50 mg/mL and 220 mg/mL whereas the MFC values for were 440 mg/mL and 880 mg/mL for *C. albicans* and *C. utilis* respectively. The results obtained that PIDG for *C. albicans* showed a positive value while *C. utilis* showed a negative value.

Conclusion: In conclusion, the findings indicate that *D. aromatica* oil exhibited antifungal properties that have a more significant effect on inhibiting *C. albicans* and *C. utilis*.

Keywords: *Candida albicans*, *Candida utilis*, *Dryobalanops aromatica* oils, antifungal agents, fungicidal.

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