Antifungal Activity of *Eichhornia crassipes* and *Salvinia molesta* Collected from Lake Gregory, Sri Lanka, Against Human Oral Pathogenic Fungi

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Invasive aquatic plants *Eichhornia crassipes* (Water hyacinth) and *Salvinia molesta* (Giant Salvinia) pose ecological threats but offer innovative healthcare potential. Rich in bioactive compounds, they exhibit antifungal effects against Candida species, presenting sustainable, natural alternatives for treating oral candidiasis while promoting eco-friendly disease control and biomass reuse. The study aims to determine the antifungal activity of *S. molesta* and *E. crassipes* against human oral pathogenic fungi specifically aiming to identify the most effective solvent and the minimum inhibitory concentration (MIC) against Candida species by the assessment of antifungal activity. *E. crassipes* and *S. molesta* were collected from Lake Gregory, Nuwara Eliya, Sri Lanka. Water and methanol extracts were prepared using ultrasonication. Phytochemical screening and FTIR analysis identified bioactive compounds. Methanol extracts were tested for antifungal activity against *Candida albicans*, *C. krusei*, *C. tropicalis*, *C. parapsilosis*, and *C. glabrata* obtained from the Faculty of Dental Sciences, University of Peradeniya. Disk diffusion method using Mueller Hinton Agar (CM0337) was conducted with different concentrations of extract, including 200, 400, and 800 mg/mL. Fluconazole served as the positive control. Inhibition zones were measured after 24-hour incubation at 48°C to determine MICs. Methanolic extraction yielded the highest extracts from both plants. Saponin, diterpene, tannin, and phenol were detected in both, but glycosides were limited to *S. molesta*, while flavonoids were exclusive to *E. crassipes*, as confirmed by phytochemical screening and FTIR analysis. Different concentrations were tested against five Candida species. *E. crassipes* had higher MIC than *S. molesta*, with lowest against *C. tropicalis* and highest against *C. albicans*. *S. molesta* showed the lowest MIC against *C. glabrata* and the highest against *C. krusei*. The most potent inhibitory zones appeared at 800 mg/mL. Overall, *S. molesta* demonstrated greater antifungal activity than *E. crassipes*. This study highlights the antifungal activity of *Eichhornia crassipes* and *Salvinia molesta* against Candida, with *S. molesta* being more effective. Their extracts offer a natural alternative to synthetic antifungals like fluconazole, suggesting potential use in antifungal therapies, including mouthwash, to suppress oral candidiasis effectively and affordably.

Keywords: Aquatic plant extracts, antifungal activity, candida colony, human oral pathogenic fungi, ultrasonication