

Efficacy of *Myristica fragrans* on multi-drug resistant strains of *Candida* species

Karawita KVDSH¹, Fernando KMEP¹, Wijendra WAS², Jayasekera PI²

¹Department of Botany, University of Sri Jayewardenepura, Gangodawila, Nugegoda

²Department of Mycology, Medical Research Institute, Colombo 8

Drug resistant strains of *Candida* species have emerged due to increasing rate of *Candida* infections and use of available antifungal drugs for treatment. This study aimed to evaluate the potential therapeutic use of the spice nutmeg (*Myristica fragrans*) as an antifungal agent against local multi-drug resistant strains of *Candida* species. Efficacy of *M. fragrans* extracts against four *Candida* species; *C.albicans*, *C.tropicalis*, *C.glabrata* and *C.parapsilosis* were evaluated. The growth response of *Candida* species to aqueous and methanol extracts of *M. fragrans* was assessed by agar well diffusion method and poison food technique. Minimum Inhibitory Concentrations (MIC) of methanol extract of *M.fragrans* for multi-drug resistant strains of *C.albicans*, *C.tropicalis* and *C.glabrata* isolated from patients with onychomycosis candidiasis and candidemia were determined by broth microdilution method. Ketoconazole was used as a positive control while water and methanol were used as negative controls. Methanol extract of *M.fragrans* was identified as the potent antifungal extract which exhibited fungicidal activity against tested species producing inhibition zones, while no inhibition zones were given by the aqueous extract. 100% growth inhibition was observed in all tested species grown in the medium containing methanol extract. MIC values for all strains were within the range from 0.31 to 2.50 mg/ml signifying all tested multi-drug resistant strains were susceptible to methanol extract. The present study reveals that *M.fragrans* possesses effective fungicidal properties and can be used as a promising agent for the development of a new antifungal drug.