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ANTIMICROBIAL ACTIVITY OF OILS OF SEEDS AND LEAVES OF *MYRISTICA FRAGRANS*

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Myristica fragrans is a tree belonging to the family Myristicaceae. Besides the seed being used as a spice, its leaves and seeds are used in variety of preparations in traditional medicine. The present study focused on quantification and characterization of oils in seeds and leaves, and determining their antimicrobial activity. The reference microorganisms included gram positive cocci, multi resistant gram negative bacilli and five species of *Candida*, all obtained from the culture collection at the Department of Microbiology, Faculty of Medicine, University of Peradeniya.

The oils of seed and leaf were obtained by distillation using the Clevenger apparatus three times. The yields of oils were calculated and subjected to thin layer chromatography (TLC) spotted and developed in 100% dichloromethane. Screening of antimicrobial activity was carried out using the disc diffusion method, using 6 mm sterile paper discs impregnated with 5 µl of the oil. The zone of inhibition (ZOI) was measured after overnight incubation at 37 °C. The yield of essential oils of seeds (6.25 ± 0.25 ml) was higher than that of leaves (2.08±0.62 ml). Seed oils demonstrated inhibitory activity against all tested organisms excluding *Pseudomonas aeruginosa* NCTC10662. The oil of leaves showed activity against all tested organisms except *P. aeruginosa*, *Klebsiella pneumonia*, *Enterobacter cloacae*, and Group A β-haemolytic *Streptococci*. The ZOI produced by oils of seed and leaf against *Staphylococcus aureus* NCTC 6571, *Escherichia coli* NCTC10518 and *Candida* spp. (n = 8) were 10 mm, 10–12 mm and 8–15 mm respectively. Both seed oil and leaf oil produced ZOI of 7 – 10 mm and 10 – 17 mm for gram positive cocci and 7 - 10 mm and 9 – 12 mm for Multi Drug Resistant (MDR) gram negative bacilli, respectively. The TLC analysis indicated the presence of five similar compounds in both oils while an additional compound with R_f 0.75 present in the leaf oil. Both sources of oil have the ability to inhibit a wide spectrum of bacteria, including multi drug resistant (MDR) strains and *Candida* spp. with seeds being a better source. Further studies are required to determine the potency and stability of this activity.

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