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Antimicrobial activity *Cymbopogon citratus* essential oil.

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Different authors have been describing the antimicrobial activities of *Cymbopogon citratus* essential oil and of its major compound, citral. In the present work, the antimicrobial effect of this essential oil, popularly used as antifungal agent, was investigated. The lemongrass essential oil was obtained by hydrodistillation in a Clevenger-type apparatus and its analysis was performed in a HP 5890 gas chromatograph equipped with a FID detector and in an Agilent 5973N GC/MS system, both fitted with HP5 capillary columns (30m X 0.25mm X 0.25µm). Oven temperature was programmed from 60 to 240°C/min, at 3°C/min. The constituents of the oil were identified by comparing their mass spectra with those in a spectral database (Wiley 6th ed) and by their retention indices (RI). The antimicrobial assay was carried out using the drop agar diffusion method. The microorganisms tested were the fungi *Cryptococcus neoformans*, *Fonsecaea pedrosoi*, *Trichophyton rubrum*, *Candida non-albicans*, *Microsporum canis* and the bacteria *Escherichia coli*, *Lactobacillus casei*, *Enterococcus faecalis* and *Staphylococcus aureus* methicilin-resistant. Microorganisms were spread over Petri dishes containing solid medium and, after 10 minutes, a 10 µL drop of the essential oil diluted 1:2 with Tween 80 was placed in the center of each plate. Reference antibiotics were: amphotericin B, methicillin and vancomycin. Plates were incubated at 37°C (incubation time depending on the m.o. tested), after which the diameter (mm) of the inhibition zone was measured. In addition, the growth inhibition activity of citral was determined using bioautography methodology. After being purified from the essential oil, the citral minimal inhibitory concentrations (MIC) were determined using microdilution method, with MIC concentrations ranging from 25 to 200 µg/ml depending on each microorganism tested.

These results provide experimental evidence suggesting the potential value of lemongrass oil and its major component citral (80%), for the treatment of human pathogenic fungi and bacteria.