

Antimicrobial activity of essential oils from some Verbenaceae and Asteraceae from Brazilian Cerrado

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Cerrado (savannah-like vegetation) is the second largest Brazilian biome, covering almost 2 million km² (the same size as Western Europe). It concentrates a huge amount of endemic species, many of which have great potential for producing essential oils. Only a small part of these species has been studied so far. Six samples of essential oils, two from *Lippia lacunosa*, and one from *L. organoides* (Verbenaceae), two from *Baccharis reticularia* (Asteraceae) and one from *Hoehnephytum trixoides* (Asteraceae) were obtained by hydrodistillation of the aerial parts of the plants. Voucher specimens were deposited at Embrapa Genetic Resources herbarium. The oils were analyzed by gas chromatography and mass spectrometry for components identification (unpublished data). They were then tested against human pathogens *Escherichia coli* ATCC 11229, methicillin-resistant *Staphylococcus aureus* (MRSA) BMB 9393, *Candida albicans* ATCC 10231 and *Cryptococcus neoformans* T 444 according to CLSI/NCCLS standard procedure [1]. All the oils tested were active against the *C. albicans*, *C. neoformans* and MRSA, with minimum inhibitory concentration (MIC) ranging from 78 to 5000 µg/mL. Best MIC was observed for *L. organoides* (78 µg/mL) for MRSA and *C. albicans*. This oil is rich in carvacrol (50%) and thymol (21.4%). Very poor or no activity was verified against *E. coli*, except for *L. organoides* oil (MIC 156 µg/mL).

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[1] Clinical and Laboratory Standards Institute (CLSI). Methods for Dilution Antimicrobial Susceptibility Tests, 4th ed.; Approved Standards, M27-A3 and M7-A4; Wayne, PA, USA, 2008.