

Chemical Composition and Antimicrobial Activity of the Essential Oils of Two Species of *Lippia* (Verbenaceae) from the Brazilian Cerrado

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Cerrado is a very ancient savannah-like formation, corresponding to approximately 21% of Brazilian territory, is an important center of biodiversity and one of most endangered biomes in the country. It is the second largest neo-tropical biome and occupies an area of about 2 million km². More than 12,000 plant species have been cataloged in this biome, including several aromatic plants from the families Asteraceae and Verbenaceae. The huge biodiversity from this biome may be a great source for fascinating natural scents (1,2). The AROCER project is an effort to characterize the chemical composition, olfactive profile and to evaluate the antimicrobial activity of the essential oils from Cerrado species. Samples of *Lippia sidoides* and *Lippia lacunosa*, family Verbenaceae, were collected in Araxá, Minas Gerais, and Planaltina, Brasília, respectively. Voucher specimens were deposited at the herbarium of Embrapa Recursos Genéticos e Biotecnologia. After hydrodistillation separately in Clevenger-type apparatus for 2 hours, the oils were analyzed by GC-FID and GC-MS in Agilent 7890A and 5975C systems, both with HP-5MS fused silica capillary columns (30 m x 0.25 mm x 0.25 µm). Hydrogen was used as carrier gas for GC-FID and helium for GC-MS, both with a flow rate of 1.0 mL/min. Oven temperature was raised from 60 to 240°C at 3°C/minute. Mass detector was operated in electronic ionization mode at 70 eV. The percentage composition was obtained by normalization from FID. Oil components were identified by comparison of both mass spectra and linear retention indices with spectral library and literature. The yields of the oils were 2.0 % (*L. sidoides*) and 1.0 % (*L. lacunosa*). For *L. sidoides*, the main compounds identified were carvacrol (49.0%) and thymol (21.0%), while the sample from *L. lacunosa* was rich in β-elemene (13.0%) and spathulenol (11.0%). Both essential oils presented good results as antimicrobial agents against *Listeria monocytogenes*. The oil from *L. sidoides* also presented good results against *Salmonella enteritidis*, *Candida albicans* and methicillin-resistant *Staphylococcus aureus* (CIM: 0.08 mg/mL).

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