



Chemical characterization and antimicrobial activity of essential oils from Brazilian Cerrado species.

Marcelly C. S. Santos¹, Roberto F. Vieira², Daniela S. Alviano³, Humberto R. Bizzo¹

¹ Embrapa Food Technology - Av. das Américas, 29501 Rio de Janeiro, Brazil

² Embrapa Genetic Resources and Biotechnology - Brasília, Brazil

³ Universidade Federal do Rio de Janeiro - Rio de Janeiro, Brazil
marcelly.santos@embrapa.br

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Brazilian biodiversity, which comprises *circa* one-sixth of total plant species is divided into important biomes such as the Amazon rainforest, the Atlantic Forest and a savanna area in Central Brazil, known as Cerrado (1). Cerrado is the second largest Brazilian biome, but the most threaten by anthropic pressure. Only a small fraction of the 12,000 known botanical species were chemically investigated, making Cerrado a very promising source for flavor and fragrance applications (2). A project in order to investigate the chemical composition of the rich flora from the Cerrado is going on and this study shows three species of the family Asteraceae and there antimicrobial activities. The Asteraceae is the botanical family with the largest number of species, about 50.000. *Hoehnephytum* and *Baccharis* species were collected in Brasília, Brazil from different places: Ermida Dom Bosco, IBGE and Cooperbraz Farm. Samples of these species have been deposited in the herbarium of Embrapa Genetic Resources and Biotechnology. The leaves of the bushes were subjected to hydrodistillation separately in a Clevenger-type apparatus for 2 hours each. The oils were analyzed by GC/FID and GC/MS in an Agilent 7890N and an Agilent 5973N 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/minute. Oven temperature was raised from 60 to 240°C at 3°C/minute. Mass detector was operated in electronic ionization mode at 70eV. 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. In the oil from *Hoehnephytum* (RFV2479) the major components were spathulenol (25.1%), caryophyllene oxide (9.7%) and limonene (5.2%). In *Baccharis* (RFV2495) the major components were spathulenol (25.2%), limonene (11.9%) and kaurene (6.8%). In *Baccharis* (RFV2466) the major components were bicyclogermacrene (17.8%), limonene (10.9%) and spathulenol (9.9%). The antimicrobial activity in *C. albicans* (ATCC 10231) with samples oils of *Hoehnephytum* (RFV2479) and *Baccharis* (RFV2495) showed MIC (minimal inhibitory concentrations) of 156 µg/mL. For *Baccharis* (RFV2466), a MIC of 312 µg/mL was recorded. In conclusion, the essential oils tested presented a low antimicrobial activity against *C. albicans*.

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