



Antifungal property of *Lippia organoides* Kunth essential oil

Thuanny R. L. Castro¹, Sandra L. F. Sarrazin², Jean-Paul Bourdineaud³, Ricardo B. de Oliveira^{1,4},
José G. S. Maia^{1,4}, Maria B. V. dos Santos¹, Rosa H. V. Mourão^{1,2}

¹ Universidade Federal do Oeste do Pará - Santarém, Brazil

² Universidade Federal do Amazonas - Manaus, Brazil.

³ University of Bordeaux, Arcachon, France.

⁴ Universidade Federal do Pará - Belém, Brazil.

thuanny_castro@hotmail.com

Keywords: *Lippia organoides*, essential oil, antifungal activity.

Lippia organoides Kunth. (Verbenaceae), also known as “Salva-de-Marajo”, is of great importance in the Brazilian traditional medicine. The aim of this study was to evaluate the antifungal activity of the essential oil of *L. organoides* in relation to *Candida* yeast species. The essential oil (EO) from *L. organoides* (collected in Santarém, Pará State, Brazil) was obtained by hydrodistillation and analyzed by GC and GC/MS. Carvacrol (46.1 %) and thymol (11.8 %) were the main components found. Antifungal activity against *Candida* yeast species was unraveled by disk diffusion and microdilution assay. The minimum inhibitory and minimum fungicidal concentration (MIC and MFC) were 0.62, 1.25, 0.31 $\mu\text{L mL}^{-1}$ and 5.0, 2.5, 0.62 $\mu\text{L mL}^{-1}$ for *C. albicans*, *C. tropicalis* and *C. parapsilosis*, respectively. The combined use of the EO with Fluconazole has been tested on *Candida* yeasts and the strategy resulted in a synergistic enhancement of the antifungal action of the azolic chemical product. Indeed, in association with 0.125 $\mu\text{L mL}^{-1}$ of *L. organoides* EO, the fluconazole MICs dropped from 1.05, 1.05, and 0.12 down to 0.03, 0.03, and 0.01 mg mL^{-1} for *C. albicans*, *C. tropicalis* and *C. parapsilosis*, respectively. The combinatorial use of *L. organoides* EO as chemosensitizer agent should contribute to enhance the efficiency of conventional antifungal drugs, reducing their negative side effects.

Acknowledgements: UFOPA, CNPq, CAPES.