

**TITLE:** CHEMICAL COMPOSITION AND EVALUATION OF ANTIFUNGAL ACTIVITY OF *EUGENIA UNIFLORA* (PITANGA) AND *POGOSTEMON CABLIN* (PATCHOULI) ESSENTIAL OILS

**AUTHORS:** OLIVEIRA, P. J. B.; CRUZ, L. C.; LUCHESI, L. A.; MAZARO, S.M.; BUSSO, C.; AUACHE FILHO, A.A.

**INSTITUTION:** UNIVERSIDADE TECNOLÓGICA FEDERAL DO PARANÁ –UTFPR(ESTRADA PARA BOA ESPERANÇA, KM 04, CEP 85660-000, DOIS VIZINHOS- PARANÁ, BRAZIL)

#### **ABSTRACT**

The resistance of some microorganisms to synthetic antifungals, especially fungi of the genus *Candida* and the increase of infections has been a cause of constant concern. In addition, studies have been developed searching new and more effective compounds. Thus, it has been observed that plants can be an excellent natural antifungal. Based on these problems that objective of the study was to evaluate the inhibitory effect of essential oils in different species of the genus *Candida*. The experiment was conducted at the Federal University of Technology - Paraná in interdisciplinary laboratory research in microbiology. The strains used were *Candida albicans* INCQS: 40006, *C. parapsilosis* INCQS: 40038, *C. krusei* INCQS: 40147 and *C. glabrata* INCQS: 40136 provided by Fundação Oswaldo Cruz (*Fiocruz*), Rio de Janeiro, Brazil. The essential oils evaluated were *Eugenia uniflora* (Pitanga) and *Pogostemon cablin* (Patchouli) in which the chromatographic analyzes were performed by the GC-MS method. For microbiological tests were conducted using standardized inocula according to McFarland scale to determine the Minimum Inhibitory Concentration (MIC). Subsequently, the disk diffusion method was performed according to the protocol of the Clinical and Laboratory Standards Institute (CLSI, 2009). The results obtained in the chromatographic analysis showed that the essential oils of Pitanga and Patchouli had a higher concentration of calamen-10-one and patchoulol substances, demonstrating to be the highest antimicrobial activity. When evaluating the antifungal activity of the strains in relation to the essential oils, it can be observed that the essential oils of pitanga (1.49 mg/mL) and Patchouli (1.46 mg/mL) were the most efficient for the strain of *C. Parapsilosis* when compared to the other species. However, when the synthetic antifungal agent was evaluated against the essential oils, only the *C. glabrata* strain (2.83 mg/mL) had a higher inhibitory concentration compared to antifungal (3.12 mg/mL) and other strains. When evaluated by the disc diffusion method compared to the other essential oils and the strains tested, it can be observed that the essential oil of Pitanga had a superior effect in relation to the Patchouli essential oil, showing to be again the most efficient. It is concluded that the essential oil of *Eugenia uniflora* (Pitanga) is an excellent antifungal potential for the strains tested.

**Keywords:** antimicrobial activity; Minimum Inhibitory Concentration (MIC); genus *Candida*; plant secondary metabolites.

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