

**Title: ANTI-FUNGAL ACTIVITY OF DIFFERENT ESSENCIAL OILS VARIETY OF CITRUS FRUITS AGAINST *Cryptococcus neoformans*.**

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*Cryptococcus neoformans* is an opportunistic human pathogenic fungus that may induce pulmonary infection and also can causes meningoencephalitis. Due to global risk increase of Cryptococcosis and emergence of drugs resistant strains, it becomes relevant to search for new bioactive principles. Essential oils become highlighted on this context because of its natural origin and presence of complex mixes of compounds on it. On this context, the purpose of this work was to evaluate the activities of essential oils from *Citrus limonia* ("limão galego"), *Citrus latifolia* ("limão taiti"), *Citrus limon* ("limão siciliano") and *Citrus aurantifolia* ("limão mirim") against *C. neoformans*. Oil components were characterized by GC/FID e GC-MS analysis. The Minimum Inhibitory Concentration assay (MIC) was realized by essential oil serial dilution in RPMI medium by inoculation with fungus and incubation during 48h at 37°C. Resazurina, a cellular viability indicator, was used as revelator agent. For the identification of active component(s) on oils, a Thin Layer Chromatograph assay (TLC) was realized on parallel with a bioautograph experiment. The results show that all studied essential oils inhibit *C. neoformans* growing, being *C. aurantifolia* the most active with 156 µg/ml MIC and *C. limonia*, *C. latifolia* and *C. limon* present 312 µg/ml MIC. Chromatograph analysis show a bigger chemical diversity on *C. aurantifolia* oil and it was possible observe on bioautograph analysis that this oil has bigger inhibition halo compared with other oils. Preview studies suggest limonene, neral and geranial as main active substances in essential oils of citric fruits against fungal strains. In this sense, new chromatographic tests will be realized to confirm which compounds are active in the studied samples.

**Keywords:** Essential oils, *Citrus*, *Cryptococcus neoforman*.

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