TITLE: *In vitro* ANTIFUNGAL ACTIVITY OF OZONIZED OLIVE OIL AGAINST *Candida* spp.

AUTHORS: MELO, R.C.[1]; FARIA, D. R.[2]; GALINARI, C. B.[1]; SAKITA K. M.[2]; ARITA, G. S.[2]; MOSCA, V. A. B.[2]; RODRIGUES, F. A. V.[2]; SVIDZINSKI, T. I. E.[2]; BONFIM-MENDONÇA, P. S.[2]; LOPES-ORTIZ, M.A.[1 2].

INTITUTIONS: 1. CENTRO UNIVERSITÁRIO INGÁ, MARINGÁ, PARANÁ, PR. (Rod. PR 317, 6114 – Parque Industrial 200. CEP 87035-510, Maringá – PR) - BRASIL. 2. UNIVERSIDADE ESTADUAL DE MARINGÁ, MARINGÁ, PR. (AV.Colombo, 5790 - Zona 7. CEP 87020-900, Maringá – PR) - BRASIL.

ABSTRACT:

Fungi from Candida sp. genus are opportunist pathogens, and one of the most common causes of nosocomial blood infections. In the last decades, there has been an increase of the resistance of these fungi species to conventional antifungals, raising the necessity of new effective drugs against infections. Therefore, natural organic compounds become an alternative to be studied. Thus, the objective of this study was to evaluate the *in vitro* antifungal activity of pure olive oil and ozonized olive oil. The antifungal susceptibility test was done using the broth microdilution method according to the Clinical and Laboratory Standards Institute (M27-A3), with some modifications, against American Type Culture Collection (ATCC) *Candida albicans* (ATCC 90028), *Candida glabrata* (ATCC 90030), *Candida tropicalis* (ATCC 750) and *Candida parapsilosis* (ATCC 22019) standard strains. Pure olive oil and ozonized olive oil were tested in concentrations that ranged from 442,000 µg/mL to 863 µg/mL and from 439,200 µg/mL to 857 µg/mL, respectively. After incubation at 35ºC during 24 and 48 hours, aliquots of the different concentrations were plated in Sabouraud Dextrose Agar (SDA), for determination of minimum fungicide concentration (MFC). The MFC is the lowest concentration capable of inhibiting 100% of the fungal growth. The different species of Candida tested were susceptible to the fungicide effect of ozonized olive oil. The MFC of ozonized oil for *C. albicans* and *C. tropicalis* was 219,600 µg/mL in 24 and 48h, and for *C. glabrata* it was 54,900 µg/mL in 24h and 109,800 µg/mL in 48h. Whereas, for *C. parapsilosis*, the MFC was 219,600 µg/mL in 24 h and 109,800µg/mL in 48h. Pure olive oil did not show any antifungal activity against the tested species. In conclusion, the ozonized olive oil shows promising results as a possible antifungal agent to be explored and such character is conferred by the incorporated ozone.

Key-words: *Candida* spp., Minimum fungicide concentration; Olive oil; Ozonized oil