

**Title: OREGANO OIL ACTION ON TRICHOPHYTON AND MICROSPORUM GENUS OF FUNGI.**

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**Resume:**

Dermatophytes are the causative agents of dermatophytosis, mycosis of keratinized tissues (e.g. skin, nails and hair), popularly known as *tineas*. The occurrence of dermatophytosis is worldwide, but greater in tropical countries. It is estimated that one billion people have this infection at any time in their lives. There are three genera of fungi involved in dermatophytosis: *Trichophyton*, *Microsporum* and *Epidermophyton*. The objective of this study is to check antifungal action of the oregano oil against *T. rubrum*, *T. tonsurans*, *T. mentagrophytes*, *M.canis* and *M. gypseum*. The work was developed in agar plates, using two methods/tests: inhibition of sporulation and inhibition of mycelium growth on agar. Oregano essential oil was diluted in Dimethyl sulfoxide (DMSO) and Sabouraud broth, serially diluted and incorporated on the Sabouraud Dextrose agar at different concentrations (1,25% to 0,04%) before agar solidification. Immediately after solidification and cooling of the plates, two tests were performed. a) Discs of 6mm-diameter were removed from a five days old micelial growth and placed into the center of petri dishes with Sabouraud agar; b) 10<sup>6</sup> spores were dispersed on the surface of the agar. After five days under incubation at 28 °C the plates were analyzed. *Trichophyton* species showed higher resistance to oregano oil. In tests with mycelial disc, concentrations (%) effective were: *M. canis* and *M. gypseum*, 0.01; *T. mentagrophytes*, 0.02; *T. rubrum*, 0.04; *T. tonsurans*, 0.04. In tests with spores of the percentage inhibition concentrations were: *T. mentagrophytes*, 0.01; *T. rubrum*, 0.02; *T. tonsurans*, 0,04. We conclude that oregano oil has potential application to treat dermatophytosis. Concentrations below 0.1% proved to be more effective against fungi of the genus *Microsporum*. However, more tests *in vitro* and *in vivo* should be carried out to assume that is safe and may become economically viable. New assays to determinate the minimum inhibitory concentration and to assess whether the activity of oregano oil is fungicidal or fungistatic are under way in our laboratory.

**Keywords:** Dermatophytes, oregano oil and antifungal.