

TITLE: BIOACTIVITY OF ESSENTIAL OILS AND AQUEOUS EXTRACTS AGAINST *Alternata alternata* ISOLATED FROM *Hylocereus undatus* FRUITS

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ABSTRACT:

Alternaria alternata, filamentous and deteriorating fungus, causes large postharvest loss due to infection of fruit and vegetable tissues. The use of plant extracts and essential oils (EO) stands out in the control of deteriorating and pathogenic microorganisms in several scientific segments. Reports show that the fruits of *Hylocereus undatus* are susceptible to this fungus, which cause epidermal lesions, known as Black spot. In view of this, this study evaluated the susceptibility of *A. Alternata* isolated from *H. undatus* fruits to different essential oils and aqueous extracts by the disc-diffusion assay to evaluate the inhibition of hyphae growth. potato dextrose agar (PDA) plates were centrally inoculated with *A. alternata* and incubated at 28 °C for 3-5 days. Test discs were made with 10 µL of oil at concentrations of 100, 50 and 25% and Tween 80 1%, and aqueous extract at concentrations of 2, 1 and 0.5 mg/mL and Tween 80 1%. Essential oils tested were eucalyptus, cinnamon, clove, sesame and lemongrass and aqueous extracts were prepared with guarana and sibiipirine. The discs were arranged around the colony on the plate, at a distance of 0.5 cm, and incubated at 28 °C for 120 h. The inhibition of hyphal growth was evaluated visually and photographed. Cinnamon essential oils (OEs) (concentrations of 100, 50 and 25%), lemongrass (concentrations of 100 and 50%) and clove (100% concentration) inhibited the growth of the hyphae of *A. alternata*. eucalyptus and sesame EOS, and guarana and sibiipirine aqueous extracts, did not show effective inhibition of hyphae growth at tested concentration. Thus, it highlights the cinnamon and lemongrass EOs, with better activity and potential to the control of the fungus *A. alternata*.

Keywords: *Alternaria alternate*, antifungal activity; essential oil; plant extracts.

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