TITLE: EVALUATION OF ANTIFUNGAL AND ANTIBIOFILM ACTIVITY OF THE ESSENTIAL OIL OF *Psidium salutare* VARIANT *sericeum* AGAINST CLINICAL ISOLATES OF *Candida guilhiermondii*

AUTHORS: BUHL, B.[1], SCHEIBEL, T.[1], KAUFFMANN, C.[1], CORBELINI, V.C.[2], MARCHI, M.I.[1] E ETHUR, E.M.[1]

INSTITUTION: 1. UNIVERSIDADE DO VALE DO TAQUARI- UNIVATES, LAJEADO – RS – BRASIL. 2. UNIVERSIDADE DE SANTA CRUZ DO SUL- UNISC, SANTA CRUZ DO SUL – RS – BRASIL.

ABSTRACT:

The genus *Candida* encompasses a broad spectrum of diseases that may be of little clinical relevance or even deadly. *Candida guilliermondii* has a lower frequency of isolates as a pathogen when compared to other species, however, a significant increase of infections caused by it has been occurring mainly in immunocompromised and diabetic patients. The treatment of candidiasis has been hampered since with the widespread and inadequate use of antifungals, gradual inefficiency is perceived in its clinical and experimental use due to the resistance acquired by these isolates, leading to a search for drugs with a greater spectrum of action. The objective of this work was to evaluate the antifungal activity and antibiofilm of the essential oil of *Psidium salutare* var. *sericeum* against *C. guilliermondii* TA07 and CGU02. The essential oil was extracted by hydrodistillation using a modified Clevenger apparatus. The antifungal activity was carried out in order to determine the minimum inhibitory concentration (MIC) by broth microdilution method. Concentrations of 20 to 0.020 mg/mL were used, and the fungal suspension used in the 96-well plate was standardized at a concentration of 0.5-2.5x10^3 CFU/mL. For the evaluation of antibiofilm activity, concentrations of 4 and 0.4 mg/mL were used, and the fungal suspension was 0.5x10^6 CFU/mL. The essential oil showed a yield of 1.16%. *C. guilhiermondii* TAO7 was not inhibited by the concentrations used and *C. guilliermondii* CGU02 was inhibited at a concentration of 20 mg/mL. As for the antibiofilm activity the best activity presented by the oil was at the concentration of 4 mg/mL on *C. guilliermondii* CGU02, in which the inhibition of approximately 70% of the biofilm occurred. A strategy for combating biofilm involves the concept of antiviral therapy, which seeks new mechanisms of action of substances that may hinder the development of resistance. Thus, the pathogen would be more susceptible to the immune system and antimicrobials traditionally used. Thus, the essential oil of *P. salutare* var. *sericeum* has a potential to be considered as alternative and / or complementary to traditional antimicrobial agents against *C. guilliermondii* CGU02, since it has a high inhibition rate of biofilm and does not have a good activity on these same microorganisms when evaluated its MIC. In this way, the development of resistance could be hampered.

Keywords: *Candida guilhiermondii*; *Psidium salutare*; essential oil.

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