

TITLE: ANTIBACTERIAL ACTIVITY OF *TABERNAEMONTANA CATHARINESIS* LATEX IN *ALICYCLOBACILLUS* SPP.

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ABSTRACT:

Brazil is the largest producer and exporter of orange juice in the world, responsible for the production of approximately 60% of the volume of frozen orange juice consumed in the world. The genus *Alicyclobacillus* spp. is composed of aerobic, Gram-positive acid thermo-resistant bacteria, present in the form of spore forming bacilli, which render them resistant to the industrial pasteurizing process. After reconstitution of the juice, the spores can germinate and deteriorate the product and cause economic losses. *Tabernaemontana catharinensis* is a lactoscent tree of the family *Apocynaceae*, popularly known as "Milkweed" (milkweed). It is found in the State of São Paulo and in the northern state of Paraná, mainly in pastures. A tissue injury in the stem of the plant allows the extraction of the latex. The objective of this study was to verify the antibacterial effect of latex against strains of the genus *Alicyclobacillus* spp. The latex was collected after superficial incisions in the *T. catharinensis* stem, collected in a water-containing container, centrifuged (5000 x g) at 5 °C for 25 minutes, then the supernatant was lyophilized and stored in cryotubes at -20 °C until tests were performed. Antibacterials. The strains tested were *A. acidoterrestris* 0244T, *A. hesperidum* 0246T, *A. acidiphilus* 0247T, *A. cycloheptanicus* 0297T and *A. acidocaldarius* 0298T. The methodology used was the minimum inhibitory and bactericidal concentration (MIC and MBC), realized in a 96-well plate, by serial dilutions of the extract and the microorganism tested in BAT culture medium (*Bacillus acidoterrestris*). The results found of activities in the crude extract of MIC of 7.81 µg mL for all tested strains and results of CBM of 500 µg/mL for *A. acidoterrestris* 0244T, *A. acidocaldarius* 0298T and 250 µg/mL for *A. hesperidum* 0246T, *A. acidiphilus* 0247T and *A. cycloheptanicus* 0297T. The results indicate the possibility of using natural latex as a bioconservant potential, although future studies still need to be performed.

Keywords: *Alicyclobacillus* spp., latex, orange juice, *Tabernaemontana catharinensis*.

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