TITLE: EVALUATION OF ANTIMICROBIAL ACTIVITY OF AFRICANIZED BEES HONEY AND BROWN PROPOLIS AGAINST *STREPTOCOCCUS* SPECIES

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ABSTRACT: Apiculture is a highly sustainable agricultural activity that is understood by the rational creation of bees. A plethora of products such as propolis, royal jelly and honey could be obtained by that activity. Honey is used on bees nutrition and propolis, manly brown propolis, as antiseptic in beehive. These products has been used in the treatment of a variety of disease, ranging from sore throats to cancer. Bacteria of *Streptococcus* genus are recognized as pathogens from respiratory tract, especially throat and lungs. The objective of the present work was to evaluate the antimicrobial activity of honey from Africanized bees and brown propolis against *Streptococcus* species. The extraction of brown propolis compounds was carried out by static maceration for three days, using as extractor solvent a mixture of ethanol water 70% (v/v). The obtained extract was fractionated by liquid-liquid partitioning with ethyl acetate and water (1:1) in order to separate the substances according to polarity. The honeybee was diluted in sterile purified water from 70% to 10% (v/v). The antimicrobial activity was evaluated by modified Kirby Bauer method with wells on agar plates for honey solution and disc diffusion for propolis. The *Streptococcus* species analyzed were *S. pyogenes*, *S. agalactiae*, *S. mutans*, *S. gordonii*. After liquid-liquid partition, the ethyl acetate fraction exhibited the higher recovery yields when compared to aqueous one. Only *S. pyogens* was inhibited by honey and propolis at concentration of 50 to 70% (v/v) for honey and 0,4 mg for brown propolis ethyl acetate fraction. These data are in according to popular uses of honey and its sub products on the treatment of respiratory tract infections. Beyond that other studies has already pointed to antibacterial effects of honey and propolis against *Streptococcus* species. The present study has showed that the main antibacterial molecules were concentrated on ethyl acetate fraction after ethanol (70%) extraction.

Keywords: Beekeeping; Antimicrobial activity; Honey; Propolis; *Streptococcus.*

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