TITLE: INFLUENCE OF SEASONALITY IN THE ANTIMICROBIAL ACTIVITY OF OLEORESIN FROM *COPAIFERA DUCKEI, COPAIFERA RETICULATA* AND *COPAIFERA PAUPERA*

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ABSTRACT:

The use of vegetable oils for medicinal purposes is a practice explored until nowadays both in the traditional medicine and in the pharmaceutical industry. Among these oils, stand out the oleoresin of *Copaifera* sp. (Copaiba), a vegetal exudate composed mainly of diterpenes and sesquiterpenes derived from secondary metabolism, responsible for several proven therapeutic activities, such as anti-inflammatory, healing and antimicrobial action. The production of secondary metabolites is influenced by several factors, such as light, temperature and seasonal effect, diversifying the vegetal chemical composition. Thus the great empirical application in the Amazon region this study evaluated the antimicrobial activity of the oleoresinof three species of *Copaifera duckei*, *Copaifera reticulata* and *Copaifera paupera* collected in Flona Tapajós during the rainy and dry season, and determining its action against pathogens of clinical interest. The oleoresin samples were collected at Km 83 of Flona Tapajós in March (Rainy season) and September (Dry season) of 2014, by drilling the trunk with a auger of 2 cm diameter and 45 cm length. The antimicrobial activity was evaluated by the disc diffusion method using decreasing concentrations between 1000 and 1.95mg / mL. The minimum inhibitory concentration (MIC) was determined by the Broth Microdilution method only for the sensitive microorganisms in the preliminary antimicrobial evaluation. The oleoresin of the three *Copaifera* species sampled in both rainy and dry season were active against the strain *Staphylococcus aureus* (MRSA), and *Copaifera duckei* (dry season) was more active with a MIC of 15.62 mg / mL compared to the oil of the rainy season (MIC 1000 mg/mL). It was also observed that the oil of all three species collected in the rainy season was active against *Staphylococcus epidermitidis* and *Proteus mirabillis*(MIC of 1000 mg/mL). The oleoresin of *Copaifera duckei* and *Copaifera paupera* collected during the dry period was active against *Citrobacter freundii* (MIC of 500 mg / mL). The samples from the three *Copaifera* species collected during the dry and rainy season showed different antimicrobial activity, evidencing the seasonality is a determining factor in the production of bioactive metabolites.

Keywords: *Copaifera*; Seasonality; Antibacterial activity

Development Agencies: FAPESPA