



CHEMICAL COMPOSITION AND TOXICITY OF ESSENTIAL OILS *Piper marginatum* FROM SANTARÉM-PA

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Abstract: *Piper* genus is a most important of the Piperaceae family and comprises more than 1000 species what are distributed pantropically (1). This genus stands out by production of essential oils, constituting an important source of feedstock for different segments of the chemical industry in cosmetics and perfumery activities. The essential oil can also to present cytotoxic property, expanding its biotechnological potential. *Piper marginatum* is a very common shrub in the borders of forests in Amazon region. This work reports the essential oil extraction, chemical composition and toxicity against *Artemia salina* of *P. marginatum* collected in Santarém in Pará State. Leaves of *P. marginatum* were collected on campus of UFOPA during dry period (september 2014) and rainy period (february 2015). The leaves of dry period were dried at 40 °C for a 3 days consecutive and leaves of pluvius period were dried at room temperature for 7 days. Was used distiller Clevenger type of oils and extraction were 6 hours. The yields of essential oils obtained were 0.33% (dry period) and 0.46% (pluvius period). Aliquots of 10 µL of essential oils of *P. marginatum* have been sent for Organic Chemistry and Farmaceutical Laboratory of CPQBA – UNICAMP for carried out the chromatographic analysis in GC-MS. The compounds were identified using the NIST library and by comparing retention indices calculated with the literature. The major compounds of the essential oil of *P. marginatum* collected in dry period were: 3,4-methylenedioxypropiofenone (22.09%), spathulenol (10.02%), β-caryophyllene (7.59%), caryophyllene oxide (7.28%) and 2-hydroxy-4,5-methylenedioxypropiofenone (6.47%). The major compounds in pluvius period were: 3,4-methylenedioxypropiofenone (13.91%), β-caryophyllene (10.26%), spathulenol (10.73%) and caryophyllene oxide (6.92%). The evaluation of acute toxicity was conducted by *A. salina* bioassay. According to the World Health Organization (WHO), are considered toxic substances that have LD₅₀ values below 1000 ppm in *A. salina*. The lower the LD₅₀ more toxic the compound is opposite to a test organism and the greater their cytotoxic activity suggesting a potential as anti-tumor (2). The largest oil toxicity activity was at a concentration of 100 ppm, which had 90% of the dead larvae indicating the presence of toxic chemicals in oils. The results suggest sequential studies such as cytotoxicity assays and antitumor activity.

References:

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