



QUANTITATIVE AND QUALITATIVE VARIATION FOR VOLATILE OILS OF *PIPER GAUDICHAUDIANUM* POPULATIONS FROM RIO GRANDE DO SUL

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The *Piper* genus comprises about 2000 species and only 12% of their species were studied from the chemical point of view. They are distributed in tropical and subtropical regions, occurring in both hemispheres. The leaves of various species of *Piper* are typically aromatic and have a pungent odor, essential oils providing a significant commercial source for use in fragrances and pharmaceutical industries. The analysis showed the presence of some species of compounds having psychotropic action, antimicrobial, antioxidant, cytotoxic, insecticide, fungicide and Leishmania (1, 2, 3). The aim of the study was ~~is~~ the analysis of the chemical composition of the volatile oil from leaves of five different collections of *Piper gaudichaudianum* from native populations of Rio Grande do Sul. The aerial parts of the five collections [A, B, C, D, E], were held in different populations in Três Cachoeiras. The oil from the leaves was obtained by hydrodistillation, using the Clevenger-type apparatus for 4 hours. The chemical analysis was carried out by gas chromatography coupled to mass spectrometry (GC/MS) and the identification of the constituents was based by comparison of both retention indices and mass spectra with authentic samples and data from literature [4]. The yield of volatile oil from leaves of *P. gaudichaudianum* (A, B, C, D, E), varied from 0.1% to 0.4%. Altogether, twenty-eight compounds, representing 95.5-100.0% of volatile oil compositions, were identified. The major compounds identified in the leaves of collections A, C and E was sesquiterpenes. For collection A, α -selinene (14.6%) and *E*-nerolidol (33.2%) were the main compounds, while for B was α -humulene (17.7%), β -selinene (30.5%) and α -selinene (31.7%) and for the last one germacrene D (11.3%), bicyclgermacrene (11.7%) and *E*-nerolidol (47.1%). For collections B and D, the chemical composition was quite similar. Both volatile oils were characterized by the hydrocarbons monoterpenes α -pinene (30.7%, 32.2%, respectively) and β -pinene (62.1%, 67.9%, respectively). The collections B and D were characterized by the presence of monoterpenes, which are derived from geranyl pyrophosphate initial precursor of monoterpenes, that after some cyclization reactions giving rise to compounds of structural type pinanos (α -pinene and β -pinene), and the collections A, C and E are derived from farnesyl pyrophosphate. The Cyclization of farnesyl pyrophosphate for terpene cyclases produce many groups among them humulane and germacrene.

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