



Seasonal study of essential oils of *Baccharis mesoneura* DC leaves.

Aurea Portes Ferriani, Noemi Nagata, Francisco A. Marques, Beatriz Helena L. N. Sales Maia,
Tânia Fabiana Dlugoviet

Universidade Federal do Paraná - Paraná, Brazil
taniadlugoviet@gmail.com

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The genus *Baccharis* belongs to the Asteraceae family and comprises about 500 species, from which 120 are found in Brazil. They are usually shrubs and measure from 0.5 to 4.0 m tall. Many of these species are used in folk medicine to treat many diseases as inflammation, diabetes, anemia, among other purposes. However, it is estimated that only 15% of the species of this genus have phytochemical studies and its bioprospecting potential evaluated (1, 2). The objective is to study the seasonal chemical composition of essential oils of *Baccharis* abundant in southern and southeastern Brazil and still little investigated. In the present work, seasonal study of the essential oils of *Baccharis mesoneura* was evaluated. The leaves were collected in Piraquara - PR and a voucher specimen was deposited in the Herbarium of Museu Botânico Municipal de Curitiba. The dried leaves (70g) were grounded and submitted to hydrodistillation in a Clevenger-type apparatus for 4 hours, in triplicate. The oils were analyzed by GC-MS in Shimadzu GC-2010 systems coupled with a mass spectrometer detector Shimadzu GCMS-QP2010 Plus. The GC-MS measurements were performed using a non-polar capillary column Rtx-5MS (5% diphenyl - 95% dimethyl polysiloxane, 30 m x 0.25 mm x 0.25 µm) operated under a temperature-programmed condition from 60 °C to 250 °C at 3 °C min⁻¹. The carrier gas was helium with a flow rate of 1.02 mL.min⁻¹, injection volume of 1.0 µL in split mode (ratio 1:10). Oil components were identified by comparison of both arithmetical index (based on a homologous series of hydrocarbons from 9 to 22 carbons analyzed in the same conditions) and mass spectra with literature and spectral library. The Principal Component Analysis (PCA) was performed using Excel® and Matlab 7®. The yields of essential oils were 0.50, 0.69, 0.34 and 0.23 mL/70g for the summer, spring, autumn and winter samples, respectively. The analysis by GC-MS resulted in the identification of almost 50 compounds in each sample (approximately 90% of the total oil), mainly comprising: α-tujene, α-pinene, β-pinene and spathulenol and smaller abundances of caryophyllene oxide and (*Z*)-caryophyllene in all samples, except for the autumn sample, which stood out (*E*)-caryophyllene, germancrene D and globulol. PCA analysis showed similarity between the oils obtained in the spring and summer where the main composition is hydrocarbon monoterpenes (>40%), followed by oxygenated sesquiterpenes (>20%). In winter it was found a predominance of oxygenated sesquiterpenes and hydrocarbon monoterpenes (>30%). However, the autumn oil showed most distinct profile, that was rich in sesquiterpenes (hydrocarbon sesquiterpenes >41% and oxygenated sesquiterpenes >25%).

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