



Identification and accumulation of chemical substances from aerial parts of *Baccharis trimera* (Less.) DC. var. CPQBA-1 under organic fertilizer levels.

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Baccharis trimera is a popular Brazilian medicinal plant long used by indigenous people for a number of purposes. Despite the importance of phytotherapy, this still lacks agronomic studies in order to improve the supply of raw material in quantity and quality adequate, mainly about natural essential oil. This study aimed to investigate the identification and accumulation of chemical substances from aerial parts of *B. trimera* (Less.) DC. var. CPQBA-1 cultivated under different organic fertilizer levels and 2 harvests (120 and 242 DAT). This study was conducted in Botucatu - São Paulo State, Brazil. The experimental design was randomized blocks with four replicates and five levels of organic fertilizer: 10, 20, 30, 40 and 50 ton ha⁻¹ and control (0 ton ha⁻¹), with spacing 0.6 x 0.6 m among plants. Aerial parts were harvest at 120 and 242 DAT. The plants were dried in an artificial dryer at 38°C for 36 h and distilled in Clevenger type apparatus to obtain essential oil. Analysis was carried out in a GC-MS (Shimadzu QP-5000) at 70 eV, fitted with a fused silica capillary column DB-5 (30 m x 0.25 mm x 0.25 µm), helium as carrier gas (1.7ml/min) at 240°C injector and the following temperature program: 60-95°C (3°C/min); 95-130°C (8°C/min); 130-190°C (3°C/min); 190-240°C (10°C/min); split: 1/20; flow: 1 ml/min. Identification of chemical constituents was performed by comparison of the mass spectra of the substances with the database of GC-MS system (Nist 62.lib), literature and retention index. Retention indices (RI) of the compounds were obtained by injection of a standard mixture of n-alkanes applying the equation of van den Dool and Kratz (1). Quantification of the compounds was made in a GC-FID (detector at 230 °C) operating under the same conditions GC-MS system. Means were submitted to analysis of variance and averages compared by Tukey test at 5% probability. Twenty-five substances were identified on essential oil samples. The major chemical substances and accumulations (coefficient of variation, level of organic fertilization and DAT) were: trans-caryophyllene; 15.82 (9.66%, 50 t.ha⁻¹, 120 DAT), germacrene D 15.27 (14.0%, 50 t.ha⁻¹, 120 DAT), bicyclogermacrene 23.93 (13.9%, 30 t.ha⁻¹, 120 DAT), spathulenol 25.22 (53.3%, 20 t.ha⁻¹, 242 DAT) and caryophyllene oxide 7.02 (36.7%, 20 t.ha⁻¹, 242 DAT). These are considered promising in the aerial part of *B. trimera* and can be useful to next studies about natural products from *B. trimera* essential oil.

1. Van den Dool, H.; Kratz, P.D. J. Chromatogr., 1963, **11**, 463-471.

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