



## YIELD, CHEMICAL ANALYSIS AND QUANTIFICATION OF *TRANS-NEROLIDOL* FROM *BACCHARIS DRACUNCULIFOLIA* DC. ESSENTIAL OIL

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**Abstract:** *Baccharis dracunculifolia* belongs to the Asteraceae family, popularly known as "alecrim-do-campo". The essential oil extracted from the leaves has potential importance for the fragrance industry, pharmaceuticals, disinfectants and food, whose the main compound is *trans*-nerolidol. The present study aimed to analyze the chemical composition and quantify the concentrations of *trans*-nerolidol from the essential oils of the 60 progenies for the breeding program.

**Methods:** The species *B. dracunculifolia* was grown in the experimental field of Multidisciplinary Center for Chemical, Biological and Agricultural (CPQBA), State University of Campinas (Unicamp), located in Paulínia, SP in a procedence and progeny, starting on seedlings from seeds collected in the municipalities of Ubatuba, Campinas and Campos do Jordão. The fresh leaves were collected in September 2014 and dried in an oven with air circulation. The essential oil was distilled by steam distillation for 1 h 30 min at pilot scale. The analysis of the chemical composition of essential oils and analysis of quantification of *trans*-nerolidol were conducted in CPQBA Unicamp of Organic and Pharmaceutical Chemistry Division in a gas chromatograph coupled to a mass spectrometer (Agilent, HP-5975) and the injected 1 $\mu$ L sample (10 mg/ml). The standard used was nerolidol Sigma Aldrich @ (a mixture of 40.50% of *cis*-nerolidol and 59.50% *trans*-nerolidol; 154.80 mg of nerolidol / 25 ml methanol). The identification of chemical constituents was made by comparison of the mass spectra of the substances with the database system GC-MS (Nist-05) calculation of retention index and literature. Statistical analysis were performed by Tukey test at 5% probability, using the Assistat 7.7 beta program.

**Results and Conclusions:** There were 23 total constituents, four from the monoterpenes class (limonene, sabinene, myrcene and  $\alpha$ -pinene) and the remainder of sesquiterpenes, among which *trans*-nerolidol is the highest. The *trans*-nerolidol mean relative percentages were higher for the city of Ubatuba (25%), followed by Campos do Jordão (20%) and Campinas (19%), while for the concentration were higher for Campos do Jordão samples, followed by Ubatuba and Campinas (Table 1).

Table 1. Concentration of *trans*-nerolidol between procedences Campos do Jordão, Campinas and Ubatuba by Tukey test at 5% of probability.

Cities	Mean (mg/mL)
Campos do Jordão	3.32 <sup>a</sup>
Ubatuba	2.96 <sup>b</sup>
Campinas	2.55 <sup>c</sup>

\* are statistic different by letters

All the procedences have been adapted to Campinas (local of the experiment), showing feasible the breeding program regarding all progenies tested for gain of *trans*-nerolidol.



## References

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