



## CHEMICAL CHARACTERIZATION OF *BACCHARIS DRACUNCULIFOLIA* DC ESSENTIAL OIL IN MALE AND FEMALE PLANTS

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**Abstract:** The *Baccharis dracunculifolia* DC species belongs to the Asteraceae family. It is a dioecious plant, world-renowned by being the vegetal source in the green propolis production. It is widely used in folk medicine as well as in perfumery through the use of its essential oil. Essential oils are aromatic liquids extracted from plants and can be present in different parts of the plant such as flowers, leaves, fruits and root. It is known that the yield and the chemical components of the essential oil experience influence depending on the genetic and physiologic characteristics, as well as seasonality and post-harvest conservation methods. Therefore, the goal of this work was to evaluate the yield and analyze the components of the *B. dracunculifolia* oil in fresh plants harvested in the reproductive phase considering the differences between male and female plant.

**Methods:** The species of *B. dracunculifolia* was grown in the experimental field of the Chemical, Biological and Agricultural Multidisciplinary Research Center (CPQBA) of the State University of Campinas located in Paulinia, SP. The fresh material was collected in June 2015 during the flowering. A hydrodistillation was performed by 2 hours in Clevenger apparatus, using 300g of leaves. The moisture content was also determined using 3g of dry mass submitted to the ventilated oven at 105°C by 24 hours. Humidity% in the samples was determined in order to determine the yield of the essential oil. The analysis of the chemical composition was conducted in a gas chromatograph coupled to a mass spectrometer (Agilent, HP-5975) and injected 1µL of the sample (10mg/ml). The identification of the chemical components was performed by comparative analysis of the substances mass spectrum with the CG-EM (Nist 5.lib) database system, calculation of retention index and literature.

**Results and Conclusions:** As it was used a fresh plant sample for this experiment, the moisture content was high, being 60.23% in the male plant and 68.35% in the female plant. The average yield of oil in the male plant was 0.74% and 0.65% in the female plant. 21 components of oil were characterized in total. Among them, we can highlight the monoterpenes myrcene and  $\alpha$ -pinene, which were present in the male plants. The sesquiterpene *trans*-nerolidol was the analyte with highest relative percentage in the samples representing 43.45% in the male plants and 28.14% in the female plants. Thus we demonstrate that the accented aroma perception in the male plants in field conditions may be explained by the variation of the essential oil components in the physiological stage of flowering.

### References:

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