



## Essential oil evaluation of 16 populations of *Rosmarinus officinalis*.

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*Rosmarinus officinalis*, commonly known as Rosemary, is an aromatic perennial shrub native to the Mediterranean region, with white, pink or blue flowers, which can reach the height of 1.5 meter. It is a member of the family Lamiaceae. The plant flowers in spring and summer in temperate climates. It is one of the most well-known plants since ancient times because of its fragrant, edible and medicinal properties. Rosemary oil can be a colorless or a yellow liquid with camphorated odor. It can be useful in diverse situations, such as pest control effects, food flavor, pharmaceutical and in cosmetics (1,2). The purpose of the research was to identify the chemical variability of 16 populations of *R. officinalis*. Samples were cultivated at Universidade de Caxias do Sul, Caxias do Sul, RS, and harvested in April 2014. Nine samples of fresh leaves (50 g) and 7 samples of dry leaves (20 g) were collected. The leaves were subjected to hydrodistillation in a Clevenger-type apparatus for approximately 2 h. The essential oils were analyzed GC/MS in an Agilent 5973N system, equipped with HP Chemstation software and Wiley 275 mass spectral library. HP-5MS fused silica capillary column (30 m X 250  $\mu$ m X 0.50  $\mu$ m) was used. Column temperature was raised from 60 to 180 °C at 3 °C min<sup>-1</sup> and 20 °C min<sup>-1</sup> to 230 °C. Helium was used as carrier gas for GC/MS with a flow rate of 1.0 mL min<sup>-1</sup> and mass detector was operated in electronic ionization mode at 70 eV. Thirty three compounds and 4 chemotypes were identified in the oil samples. As expected, the major components were terpenes followed by 1,8-cineole, camphor and borneol. The first chemotype high in terpenes and oxide contains  $\alpha$ -pinene (16.6 %) 1,8-cineole (20.6 %) and verbenone (7.4 %). The second chemotype identified high in oxide and ketone has 1,8-cineole (16.0 %) and camphor (36.7 %). The third one contains  $\alpha$ -pinene (18.9 %), 1,8-cineole (7.2 %) and camphor (12.4 %). The fourth chemotype high in ketone and terpene has camphor (20.0 %) and borneol (13.5%).

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