VARIATION OF MONOTERPENE CONTENT AND SPECIFIC INTERGENIC REGION OF cp-DNA GROUP NATURAL POPULATIONS OF *SALVIA OFFICINALIS* L. OF NORTHERN ALBANIA IN A SIMILAR ORDER

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ABSTRACT

Essential oils were analyzed from sage populations of northern Albania, which were previously verified for their genetic relatedness based on the RFLP of a specific intergenic region of cpDNA. Samples were collected in May 2016 and dried in the shade. The essence was isolated using hydro-distillation for 16 hours in Clevenger apparatus as recommended by the European Pharmacopoeia. Essential oils were extracted using toluene, and injected into Varian 450 GC equipped with PTV injector, capillary columns and FID detector. VF-1ms capillary column (30 m x 0.33 mm x 0.25 um) was used for the separation of chemical components of the essential oils. Compounds of major content were α-thujone (18.67%-36.1%), camphor (10.98% - 22.95%), 1,8-cineole (8.4% -22.23%), camphene (2.14% - 11.43%), β-thujone (2.29% - 7.67%), α-pinene (2.2% -9.42%). The content of minor monoterpenes is up to 5%; Sesquiterpenes are presented by β-caryophyllene and humulene, which count for less than 10%; The contribution of terpenoid groups varied among populations (monoterpene components 0.02- 36.1%, and sesquiterpenes from 0.25-8.02%).Based on chemical profiles populations can be considered as very close (Postriba-Valbona and Torovica-Malësi e Madhe); can be grouped (Shkodra-Rubik; F.Milot-Shëngjin); or are completely distinct (Balldren, Kruja, Lohe, Ulza, Lezha). Grouping of populations according to their genetic (RFLPs of intergenic cp-DNA) or chemical composition of essential oils are in accordance. According to ISO 9909 and the German Drug Codex for medicinal use, most of the natural populations of northern Albania have the proper amount of α-thujone, champhor, 1.8-cineole, β-thujone, α-humulene, linalool, borneol and bornyl acetate, and higher amounts of α-pinene, camphene, and limonene.

Keywords: *Salvia officinalis*, essential oils, monoterpene, GC/FID, α-/β-thujone, camphor.