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THE VOLATILE OIL QUALITATIVE VARIATION IN THE UNDERGROUND ORGANS OF THE *ANGELICA ARCHANGELICA* L. FAMILIES DESCENDANTS

Pop M.R., Camelia Sand, C.H. Barbu

Lucian Blaga" University of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, 5-7 Ion Rațiu St., Sybil, Tel/Fax: 0269234111, e-mail: 5mpop@email.ro

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SUMMARY

The biological material employed, the "De Cristian" population, very heterogeneous, with large morphological variation amplitudes, has made possible the selection works within this genotype. The previous analysis showed that rootstocks by angelica contains terpens, sesquiterpens and sesquiterpenics lactons, macrocicles lactones, oxigenated components, (CIULEI şi ALBULESCU, 1980; VIORICA CUCU, 1982).

Within the breeding works, performed at Brasov (2000-2002) and Sibiu (2003-2004), there have been noted 10 valuable (considering quantity and quality) *Angelica archangelica* L. families, marked with G_1-G_{10}, compared to the "De Cristian" population.

During the summer of 2002, with seeds originating from the 10 selected families, a new experimental lot was established, in Hamba, Sibiu County. The plants were cropped in 2004.When selecting the valuable genotypes, the researches were focused mainly on the study of the phenotypical variability of the studied biological material. The experimental results have envisaged the variation of the volatile oil content in the plant organs.

We were also interested in the identification of the components of the volatile oil, for the "De Cristian" population and for each of the 10 selected families. It can be seen that a large proportion of the oil from subterraneous organs is formed by monoterpenic hydrocarbonates (over 60%), in each sample being 8-19 representatives. Of them, the dominant substance is ß-phellandren, with an area of 32.36%, followed by α-phellandren, with 6.26%. Our analyses also found bergamothene and osthol. The monoterpenic hydrocarbonate trans-ß-ocimene and the sesquiterpene α-humulene are present in all the studied families, but in small amounts.

A frequent compound, found in the oil originating from 6 out of the 10 selected families is muscolactone (belonging to the macro-cyclic lactones class), that contributes to the scent, enhancing and making permanent the perfumes.

It may be concluded that the gas-chromatograms of the oils originating from the selected Angelica archangelica L. families demonstrate the multitude of possibilities for superior valorization of this species, in medical, food or cosmetic products.

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