

COMPOSITION OF THE ESSENTIAL OILS OF *Artemesia fragrans*,

A. spicigera, AND *A. szowitziana*

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We have studied the essential oils from the air-dry epigeal parts of *Artemesia fragrans* Willd., *A. spicigera* C. Koch., and *A. szowitziana* (Bess.) Grosch. collected in the budding period of the Fizuli region, Nakhichevan' ASSR and on the Apsheron peninsula (AzSSR). The amounts of essential oils obtained by the steam-distillation method were: for *A. fragrans*, 1%; for *A. spicigera*, 1.2%, and for *A. szowitziana*, 0.9%. The oils consisted of mobile light-yellow liquids.

In the investigation of the oils we used the methods of chromatographic separation on alumina and gas-liquid chromatography (GLC). GLC conditions: 1) Tsvet-110 chromatograph; 10% PEGA; 4 mm × 2 m column; temperature of the evaporator 200°C and of the column 80-180°C at 4°C/min; FID; rate of flow of the carrier gas, argon, 30 ml/min; 2) LKhM 8MD chromatograph; 12% of ODPN, 4 mm × 1.5 m column; temperature of the evaporator 250°C and of the column 80°C; FID; rate of flow of Ar, 30 ml/min; 3) LKhM 8MD chromatograph, capillary column, Carbowax 40 M; length of the column 50 m and its internal diameter 0.25 mm; temperature of the evaporator 250°C and of the column 70-180°C at 3°C/min; FID; rate of flow of Ar, 2 ml/min.

The components of the essential oils were identified from their retention times and by the addition of authentically known compounds, and quantitative analysis was performed by the internal normalization method.

The amounts of the individual components are given in percentages on the whole oil.

In the essential oil of *A. fragrans* we identified p-cymene (0.8), 1,8-cineole (36), α -thujone (28), β -thujone (12), and camphor (7). α -Pinene, camphene, β -pinene, sabinene, myrcene, limonene, and β -phellandrene were detected in trace amounts. In the essential oil of *A. spicigera* we found α -pinene (0.1), camphene (0.5), p-cymene (2), 1,8-cineole (46), and camphor (48). β -Pinene, sabinene, myrcene, limonene, β -phellandrene, γ -terpinene, and terpinolene were present in trace amounts.

We established that the main component of the essential oil of *A. szowitziana* is β -thujone (75) and, in addition, 1,8-cineole (9) and α -thujone (9) were identified in the oil. α -Pinene, camphene, β -pinene, sabinene, limonene, and p-cymene were detected in trace amounts.

The essential oil of *A. fragrans* growing in the Crimea has previously been studied by Shchupinskaya [1], who found cineole, α -thujone, methylchavicol, and traces of citral. We are the first to have studied the composition of the essential oils of *A. spicigera* and *A. szowitziana*.

LITERATURE CITED

1. M. D. Shchupinskaya, Tr. Gos. Nikitsk. Bot. Sada., 20, 39 (1936).

V. L. Komarov Botanical Institute, Academy of Sciences of the USSR, Leningrad; V. L. Komarov Botanical Institute, Academy of Sciences of the Azerbaidzhan SSR, Baku. Translated from Khimiya Prirodnikh Soedinenii, No. 1, pp. 116-117, January-February, 1986. Original article submitted July 16, 1985.