

Turnip-root chervil, *Chaerophyllum bulbosum* L., family Apiaceae is a biennial monocarpic plant with a height of from 80 cm to 1 m and more. In the flora of the USSR, the chervil (*Chaerophyllum* L.) genus is represented by 20 species (in Azerbaidzhan by 7) growing in high forest and subalpine zones on the bank of rivers, in woods and gorges, and in mountain meadows in high grasses [1]. Turnip-root chervil is widely distributed in almost all regions of the Azerbaidzhan SSR [2].

It is known that the epigeal part of turnip-root chervil contains an essential oil [3]. However, the chemical composition of the essential oil has not been studied. We have now studied the dynamics of the level of essential oil of turnip-root chervil and have investigated its component composition. The material for investigation consisted of wild-growing turnip-root chervil plants gathered in the environs of the village of Kirovka, Shemaka region of the Azerbaidzhan SSR. The essential oil was obtained by Ginsberg's method [4] from the epigeal part of the air-dry raw material. The essential oil content was determined in an average sample (10 g) in quintuplicate by method 2a of the USSR State Pharmacopeia [5]. The physicochemical constants of the essential oil were found in accordance with the ratified GOSTs [State Standards] [6].

The results of a study of the dynamics of the level of essential oil both with respect to phases of development and with respect to individual organs of turnip-root chervil showed that in the process of development of the plant it changed from 0.2 to 1.4%. The highest essential oil content was observed in the flowering phase. The essential oil of turnip-root chervil forms a clear yellow, slightly viscous liquid with a faintly burning taste and the pleasant odor of the fresh plant, and is characterized by the following constants: n_D^{20} 1.517, d_4^{20} 0.8609, acid No. 2.244, ester No. 25.25.

The composition of the essential oil was studied, without its preliminary separation into fractions, by the GLC method on a Janaco chromatograph. Chromatographic conditions: copper column 3 mm \times 0.75 m; stationary phase PEG-2000 (5%); temperature of the flame-ionization detector 220°C, of the injection unit 220°C, and of the column 70-200°C/6°C per minute; rate of flow of the carrier gas, helium, 15 ml/min, of hydrogen 20 ml/min, and of air 0.4 l/min; dose of essential oil injected into the apparatus 0.02-0.1 μ l. The components were identified from their retention times and by the addition of authentic compounds (markers). The percentage contents of the components were calculated from the areas of the peaks by the method of internal normalization, the sum of the areas of the peaks being taken as 100%.

As a result of GLC, the essential oil of turnip-root chervil was separated 18 components of which the following were identified (%): α -pinene, 7.8; linalool, 18.32; β -pinene, 1.0; cineole, 0.68; terpineol, 0.6; anethole, 0.32; 3-carene, 0.22; cinnamaldehyde, 0.22, geranyl acetate, 0.33; eugenol, 1.44; and methyl benzoate, 0.75.

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ESSENTIAL OILS OF *Pimpinella aromatica*

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One of the genera of the Umbelliferae family of interest from the point of view of its essential oil content is the pimpinella genus *Pimpinella* L., some species of which have been known since ancient times as aromatic spice plants [1].

Literature information on the essential oil content of pimpinella species is sparse. According to Ya. Matsku [1], M. Kotov [2], and Shukla [3], the fruit of *P. anisum* contains from 2 to 3.2% of essential oil (EO). The yield of EO from the roots of *P. saxifraga* amounts to 0.02-0.11% [2, 4].

The EO from the whole plants and fruit of *P. anisum* and *P. saxifraga* has been shown to contain α -pinene, limonene, dipentene, α -phellandrene, bergamotene, copaene, anethole, pregei-

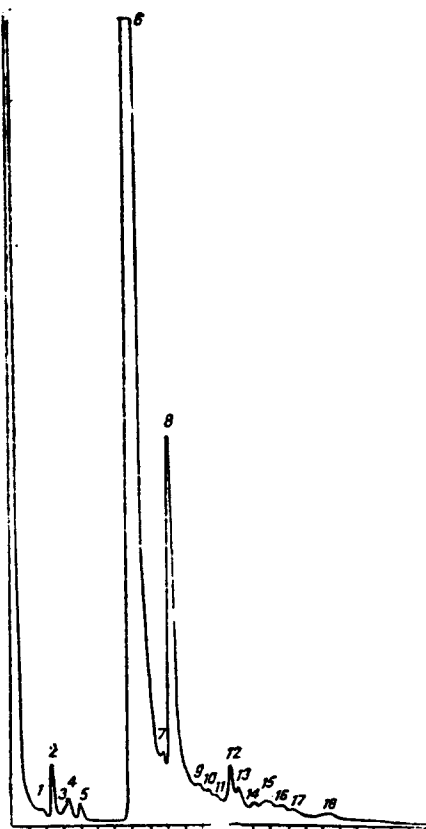


Fig. 1. GLC of the essential oil from whole *Pimpinella aromatica* plants: 1) α -thujene; 2) α -pinene; 3) camphene; 4) α -terpinene; 5) limonene; 6) methylchavicol; 7) cis-anethole; 8) trans-anethole; 12) anisaldehyde; 13) anisic acid; 14) eugenol; 15) chamazulene; 16) thymol; 9, 10, 11, 17, 18) unidentified components.

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