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ESSENTIAL OIL OF Thymus rariflorus

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The genus Thymus (thyme) is one of the largest of the Labiateae family. Its representatives are also widely distributed in Azerbaidzhan (21 species) [1]. Thymes have long been used in medicine as popular antiseptics, analgesics, and expectorants [2]. Out of 136 species known in the flora of the USSR, only two have so far been used in medicine: Th. vulgaris L. (common thyme), and Th. serpyllum L. (mother-of-thyme), which are used in perfumery and the food industry [3-5]. We set ourselves the aim of investigating the amount and chemical composition of the essential oil of Th. rariflorus C. Koch. and its useful properties. The species has hitherto been scarcely studied in the chemical respect.

In addition, Th. rariflorus was grown in the Botanical Garden in 1969.

The material for analysis was collected in 1975 in the environs of the village of Lenin-kend, Shamkhorskii region. The amount of essential oil was determined by steam distillation as 0.3-0.7% of oil at a moisture content of the raw material of 13.81% (0.35-0.81% on the absolutely dry weight) and it had the following constants: d_{20}^{20} 0.9541; n_D^{20} 1.5055; acid No. 2.90, ester No. 15.73; ester No. after acetylation 218.84.

In addition, Th. rariflorus was grown in 1969 in the Botanical Garden at Baku. The material used was live shrubs brought from the Shamkhorskii region. The plant is growing and developing well at Apsheron and is giving a good epigeal mass with a yield of oil of 0.79-1.44% at a moisture content of 69.29% (2.27-4.44% on the absolutely dry weight).

The essential oil of Th. rariflorus is a liquid with a sharp odor of thymol which crystallizes at -7°C . The presence of 25 components in the oil has been shown by the GLC method (LKhM-8MD). Conditions of performing the analysis: carrier gas helium, rate of flow 6 ml/min. Carbowax 20 and PEG, mol. wt. 20,000. Length of the capillary column 50 m, internal diameter 0.25 mm, temperature of the evaporator 200°C , and of the column $70-180^{\circ}\text{C}$ at 2 deg/min. The weight of the oil sample was 0.1 ml, discharge ratio 1/60, recorder 1 mV, speed of the paper 240 mm/h, FID, $V - 10^{-11}$ A. The components were identified by the introduction of known substances and from the retention times. It was possible to identify α -pinene, camphene, β -pinen, sabinene, myrcene, limonene, p-cymene, terpinene, terpineol, caryophyllene, linalool, boreneol, thymol, and carvacrol. The main substances (thymol and carvacrol) were isolated individually and were identified from their NMR and IR spectra.

It was found that the essential oil, on subcutaneous injection and administration per os, leads to a gradual and prolonged lowering of the arterial pressure which is accompanied by an intensification of the cardiac contractions. It was found that in the first 30-60 min after parenteral and enteral administration of the essential oil the intraocular pressure decreases.

The essential oil is also recommended as a product for perfumery and cosmetics.

LITERATURE CITED

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