OP5. COMPARATIVE STUDY ON THE ESSENTIAL OIL AND LIPIDS OF *FERULA KYZYLKUMICA* KOROVIN

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There are about 40 species of wild *Ferula* L. (Apiaceae family) in Uzbekistan. Ten of its species, including *Ferula kyzylkumica* Korovin, grows in Kyzyl-Kum. This species is apolycarpic plant and listed in the Red Book.

The goal of the present research was to compare essential oil and lipid profiles isolated from root and aerial part of *F. kyzylkumica*. The plant materials from Navoiy region(Uzbekistan) were collected in 2022. The samples were powdered and subjected to hydrodistilation using a Clevenger-type apparatus to isolate the essential oils. The lipids were extracted with chloroform-methanol. Fatty acids was isolated from the product of hydrolysis of lipid extracts and methylated. The essential oil and fatty acidmethyl esters were analyzed by GC–MS and GC-FID using two different capillary columns (HP-5 and HP-Innowax), data in electronic libraries and related retention indices of individual components which were determined using a standard solution of n-alkanes (C9–C32).

The results showed that essential oil from root of *F. kyzylkumica* is enriched in sesquiterpene hydrocarbons and oxygenated sesquiterpenes (GC-MS, %,), such as δ-cadinene (19.1), germacrene D (4.4), α-muurolene (3.5) and germacrene D-4-ol (24.7),
α-cadinol (16.2), T-muurolol (5.8). α-cadinol (22.1), T-muurolol (7.3), germacrene D-4- ol (6.1), germacrene D (5.7), α-muurolene (3.5) also dominated in the essential oil obtained from aerial part. Analysis of the lipids and fatty acids from aerial part showed that the main components form a mixture of free fatty acids, monogalactosyl- and digalactosyldiacylglycerols. Linolenic acid predominated among acyl fragmentation of these lipids. The dominant lipids of the roots were free fatty acids, where the mainones are linoleic and palmitic.

Thus, a comparative study of the root and aerial part of *F. kyzylkumica* showed thatthey contain similar oxygenated sesquiterpenes, but lipids differ both in compositionand in the profile of fatty acids.

Keywords: GCMS; Ferula; essential oil