- D. M. Akhmedov, N. F. Mir-Babaev,
- A. N. Aleskerova, S. V. Serkerov,
- D. Knight, and Yu. Salan

At the moment of completion of our investigations of the resin of the roots of <u>Ferula rigidula</u> D. C. gathered in the fruit-bearing period on the Sol' enterprise, Nakhichivan AR (Azerbaidzhan), a paper by Minski and Jakupovič devoted to a study of daucane esters from <u>Ferula rigidula</u> appeared in the literature. On comparing the results that we had obtained with those reported by these authors [1], we found a complete lack of agreement and we have therefore continued investigations of the secondary substances characteristic for the abovementioned plant material.

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When the resin obtained by three extractions with acetone of the ground air-dry roots was subjected to chromatographic separation on a column of silica gel and individual fractions were rechromatographed, we isolated four individual substances [(I)-(IV)] in the form of colorless viscous resins with the following spectral characteristics:

IR (cm<sup>-1</sup>): I) 1715, 1697, 1643, 1510; II) 1725, 1693, 1642, 1605, 1585, 1515,; III) 1715, 1695, 1615, 1603, 1512; IV) 1715, 1693, 1643, 1510.

NMR (ppm) (I): I) 0.89 (s, 3H), 1.07 (s, 3H), 1.60 (s, 3H), 1.86 (s, 3H), 1.95 (d, 3H; 7.2), 5.25 (t, 1H; 7.6), 5.45 (d, 1H; 10.6), 6.04 (m, 1H), 6.92 (d, 10.6), 1085 (1H); II) 0.94 (s, 3H), 1.19 (s, 3H), 1.63 (s, 3H), 5.25 (t, 1H; 7.6), 6.53 (d, 1H; 10.6), 6.94 (d, 1H; 10.6), 7.43 (t, 2H; 8.6), 7.55 (t, 1H; 8.6), 8.05 (d, 2H; 8.7), 11.82 (1H); III) 0.90 (s, 3H), 1.20 (s, 3H), 1.57 (s, 3H), 3.93 (s, 3H), 5.25 (t, 1H; 7.6), 5.70 (d, 1H; 10.3), 6.51 (d, 1H; 10.3), 6.93 (d, 1H; 8.4), 7.52 (s, 1H), 7.59 (d, 1H; 8.4), 9.45 (s, 1H); IV) 0.96 (s, 3H), 1.10 (s, 3H), 1.19 (s, 3H), 1.87 (s, 3H), 1.96 (d, 3H; 7.2), 3.00 (q, 1H; 11.2, 3.5), 5.23 (d, 1H; 10.6), 6.06 (m, 1H), 6.92 (d, 1H; 10.6), 10.20 (1H).

By comparing the figures given with those in the literature [2], compounds (I), (II), (III), and (IV) were identified as kurubaschic acid angelate, kurubaschic acid benzoate, kurubasch aldehyde vanillate, and 1,10-epoxykurubaschic acid angelate, respectively, which have been isolated from <u>Ferula Uhaussknechtii</u> Wolff. ex Rech.

Such a marked difference in chemical composition within a single species suggests that they are possibly chemoforms, or else the situation is explained by an erroneous determination of species affiliation. The  $\underline{F}$ .  $\underline{rigidula}$  herbarium material, collected by one of the authors (S. V. Serkerov) in 1962 (at the site where roots were subsequently gathered for chemical investigation), was determined by S. G. Tamamshyan (BIN RAN [V. L. Komarov Botanical Institute, Russian Academy of Sciences]).

IR spectra were taken on a UR-20 spectrometer in a thin layer, and NMR spectra on a Bruker AM 400 MHz instrument in CDCl<sub>3</sub> solution. TMS was used as internal standard,  $\delta$  = 0.

## LITERÁTURE CITED

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Institute of Botany, Azerbaidzhan Academy of Sciences, Baku. Institute of Physiology, Azerbaidzhan Academy of Sciences, Baku. Nottingham University, Chemistry Department. Translated from Khimiya Prirodnykh Soedinenii, No. 2, pp. 296-297, March-April, 1993. Original article submitted February 24, 1992.