

OIL OF THE SEEDS OF CRYPTODISCUS DIDYMUS

T. V. Chernenko, A. U. Umarov, and A. L. Markman

Khimiya Prirodnikh Soedinenii, Vol. 5, No. 5, p. 433, 1969

Cryptodiscus didymus (Rgl.) belongs to the family Umbelliferae [1]. The seeds are almost spherical with a diameter of 0.60–0.85 cm; bulk density 80 g/l, weight of 1000 seeds 45 g; proportion of kernel 40% and of husk 60%; oil content of the seeds 7.65%; light yellow oil with peculiar odor.

When a petroleum ether extract was concentrated, a white precipitate deposited which, after repeated recrystallization from ether, had a nonconstant melting point (85–100° C). Qualitative investigations have shown that the precipitate consists of a mixture of coumarins.

The physical and chemical indices of the oil and the fatty acids are as follows:

<u>Index</u>	<u>Oil</u>	<u>Fatty acids</u>
Density, g/ml (d_{20}^4)	0.9155	—
Refractive index, n_D^{20}	1.4794	—
Absolute viscosity, poise	0.46	—
Neutralization number, mg KOH/g	—	202.11
Mean mol. wt.	—	177.61
Iodine number, % (I_2)	100.66	106.33
Thiocyanogen number, % (I_2)	75.06	77.91
Content of unsaponifiables, %	0.74	—
Content of phosphatides calculated as P_2O_5 , %	0.77	—
Content of solid acids, %	23.11	—
Iodine number of the solid acids, % (I_2)	77.50	—

The fatty-acid composition of the oil (%) is: palmitic acid 5.98, oleic 38.28, petroselinic 19.91, linoleic 35.83.

The petroselinic acid was detected as described by Hilditch [2]; among the products of destructive oxidation were lauric and adipic acids. In addition, on paper chromatography a mixture of the saturated acids isolated by Bertram's method exhibited a spot of lauric acid, which was not present on a chromatogram of a mixture of the initial acids.

The triglyceride composition of the oil was determined by the method of enzymatic hydrolysis [3], %: G1 SSS) 0.01; G1 SSU) 0.60; G1 SUS) 0.04; G1 SUU) 4.00; G1 USU) 12.63; G1 UUU) 82.72.

In its technical properties, the oil belongs to the semidrying type.

REFERENCES

1. B. K. Shishkin, Flora of the USSR [in Russian], Moscow, p. 261, 1950.
2. T. P. Hilditch, Chemical Constitution of Natural Fats, London, 322, 1940.
3. T. V. Chernenko, A. U. Umarov, and A. L. Markman, KhPS [Chemistry of Natural Compounds], 5, 76, 1969.

9 April 1969

Institute of the Chemistry of Plant Substances AS UzSSR

THE OIL OF THE SEEDS OF PEGANUM HARMALA

K. Kurachko, A. U. Umarov, and A. L. Markman

Khimiya Prirodnikh Soedinenii, Vol. 5, No. 5, p. 434, 1969

Peganum harmala (harmel peganum) belongs to the family Zygophyllaceae. It grows in Central Asia and in the Caucasus [1] and contains up to 4% of alkaloids [2]. The dimensions of the seeds are 3 × 2 × 1 mm, the bulk density