

OILS OF THE SEEDS OF SAMBUCUS NIGRA

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Sambucus nigra (European elder) of the family Caprifoliaceae is distributed in the European part of the USSR, in the Caucasus, in Western Europe, and the Mediterranean region.

The oil of the seeds of this plant [1] have not previously been adequately studied [2]. We have investigated seeds collected in the Tashkent Tree Park (light brown transversely wrinkled seeds of tongue-like shape). The weight of 1000 seeds was 2.5 g and their dimensions 3 × 1.5 × 0.5 mm. The core consisted of a liquid mass in a dense coat.

Table 1

Index	Acids		
	mixture	saturated	solid
Iodine No., %	184.37	3.98	4.05
Thiocyanogen No., %	99.32	—	—
Neutralization No., %	203.94	214.86	216.50
Mean mol. wt.	275.13	261.14	259.17

The amount of substances (oils) extractable by petroleum ether was 35.82% calculated on the absolute dry weight. The oil was pale yellow and odorless with d_4^{20} 0.9242, viscosity 7.768° E, saponification no. 189.23, acid no. 1.16, Hehner no. 95.93, content of unsaponifiables 1.1% and of phosphatides 0.30%.

The indices of the total fatty acids and of the saturated and solid acids isolated from them are given in Table 1. The compositions of the fatty acids and their fractions, determined by gas-liquid chromatography, are given in Table 2. The oil of the European elder dries twice as fast as linseed oil.

Table 2

Acid	Composition of the acid, %		
	some	saturated	solid
Caprylic	0.22	traces	0.85
Capric	0.12	traces	0.31
Undecanoic	—	1.04	—
Lauric	—	—	0.47
Myristic	—	—	0.57
Palmitic	7.81	64.78	70.12
Palmitoleic	0.86	3.44	4.38
Stearic	2.11	30.74	23.30
Oleic	14.14	—	—
Linoleic	38.49	—	—
Linolenic	36.25	—	—
Content, % of the mixture of fatty acids	100	10.96	12.10

By a method, which we have modified, of chromatography on paper in the Alimova system [3] we found behenic and arachidic acids and an unidentified acid. The latter, like ricinoleic and dihydroxystearic acids travels with the front of the mobile solvent, is insoluble in petroleum ether, and gives a characteristic reaction for a keto alcohol.

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