

OIL OF THE SEEDS OF SISIMBRIUM BRASSICIFORME

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The biennial plant Sisimbrium brassiciforme, family Cruciferae, is completely bare, ramose mainly in the upper part, straight, 30–90 (150) cm high. It flowers and bears fruit in May–June [1]. We have studied the seeds collected in Ak-Bulak in 1968.

The oil content of the seeds was 31.99%; the oil is liquid with a bright orange color and a pleasant herbaceous smell. The physical and chemical indices of the oil and the fatty acids are given below.

Index	Oil	Fatty acids
Density, g/cm ³	0.8842	—
Refractive index, n _D ²⁰	1.4857	—
Saponification No., mg, KOH/g	187.48	—
Acid No., mg, KOH/g	1.41	—
Iodine No., % I ₂	131.80	138.25
Thiocyanogen No., % I ₂	82.35	84.59
Hehner No., %	95.41	—
Neutralization No., mg, KOH/g	—	177.84
Mean mol wt	—	315.45
Content of unsaponifiable substances, %	1.07	—
Content of phosphatides in the oil, %	Traces	—

The fatty acid composition of the oil determined by gas-liquid chromatography is as follows.

Fatty acid composition	%
Capric	0.77
Undecanoic	0.59
Lauric	0.56
Unidentified	0.58
Tridecanoic	0.78
Myristic	0.56
Palmitic	5.44
Palmitoleic	5.01
Stearic	1.62
Oleic	20.93
Linoleic	15.23
Linolenic	12.66
Arachidic	11.19
Erucic	24.08

The triglyceride composition of the oil was determined by enzymatic hydrolysis [2]: Gl S₃ 0%, Gl SU₂ 25.28, Gl S₂U 2.21, Gl U₃ 72.51% (where Gl represents a glycerol residue, S a saturated acid, and U an unsaturated acid).

REFERENCES

1. Flora of Uzbekistan, Vol. 3, [in Russian], Tashkent, p. 73, 1955.
2. T. V. Chernenko, A. L. Markman, and A. U. Umarov, Prikladnaya biokhimiya i mikrobiologiya [Applied Biochemistry and Microbiology], 5, no. 5, 616, 1969.

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