

INVESTIGATION OF THE OILS  
OF *Anethum graveolens*

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*Anethum graveolens* L. (dill), family Umbelliferae, is a valuable raw material for the extraction of essential and fatty oils [1-3].

We have investigated the fatty-acid composition of the hypogeal (I) and epigeal (II) parts and of the fruit (III) of the plant. Petroleum-ether extracts were obtained (after the elimination of the essential oil) which were orange for (I), light brown for (II), and dark green for (III). The oil of the fruit was the most mobile at room temperature. The physical and chemical indices of the oils freed from accompanying substances in a column of silica gel are given in Table 1.

The fatty-acid compositions of the methyl esters of the fractions studied were determined by the GLC method on a polar phase (UKh-2 chromatography, 198°C, carrier gas helium) [4].

The fatty-acid compositions of the fractions considered can be judged from the figures of Table 2, which show that for all the organs of the plant saturated acids are represented only by palmitic, which is contained most richly in the fruit of the plant.

The compositions of the unsaturated acids are more diverse, and the main component for all parts of the plant is petroselinic acid, present in largest amount in the oil of the stems.

TABLE 1

Index of the oil	Units of measurement	Parts of the plant studied		
		I	II	III
Oil content	%	2,46	3,85	14,63
Oil saponification No.	—	184,95	185,48	193,40
Iodine No.	% I <sub>2</sub>	90,87	90,59	92,11
Thiocyanogen No.	% I <sub>2</sub>	8,37	17,74	20,18
Acid No.	mg of KOH/g	13,15	11,55	8,58
Unsapnifiabiles	%	12,8	3,71	2,01
Neutralization No. of the fatty acids	mg of KOH/g	193,9	199,7	200,5
Mean molecular weight of the fatty acids	—	294,53	280,87	279,85

TABLE 2

Acid	Fraction		
	I	II	III
Palmitic	2,7	4,2	5,1
Palmitoleic	2,0	1,0	1,0
Petroselinic	72,1	75,9	71,9
Oleic	20,1	15,0	14,6
Linoleic	3,1	3,9	7,4
Σsaturated	2,7	4,2	5,1
Σunsaturated	97,3	95,8	94,9

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