

of the enzyme the yields of PLs and proteins from each substrate increased on an average by a factor of 1.2-1.5, and in the case of the lipids they reached the level determined by the chemical method.

The nature of the substrate appreciably affected the degree of interphase distribution of the lipid and protein products of hydrolysis. On the enzymatic hydrolysis of sunflower-seed kernels 79% of the weight of the LPs was weakly sorbed on the solid phase, while in the case of the peanuts practically their whole amount was sorbed.

According to TLC, the polar lipids of the three samples, like the analogous lipids of cottonseed kernels [1], consisted of components of the phospho- and glycolipids that are common for the seeds of higher plants. No quantitative evaluation of the compositions of the PLs was made.

Analysis of the PLs obtained by the proteolysis of the sunflower seed kernels of the presence of phenols by the TLC method and qualitative reactions showed that there were no phenols in the ethereal extracts of the two phases, but phenols (caffeic acid) were detected in an acetone extract from the solid phase.

Thus, the enzymatic-chemical method is suitable for the initial partially processed seeds (oil cakes) and meals not only of cotton seeds but also of other oil and pulse crops and enables the yields of lipids and water-soluble proteins to be increased.

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FATTY ACID COMPOSITIONS OF THE NEUTRAL LIPIDS OF THE SEEDS OF DIFFERENT VARIETIES OF *Olea europaea*

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The olive, *Olea europaea* L., is a valuable oil crop more than 80 varieties of which are grown on the Apsheron peninsula (Azerbaijan SSR). We have previously investigated the fatty acids (FAs), neutral lipids (NLs), flesh with skin, seeds, and leaves of a number of varieties of *Olea europaea* L. growing in the Azerbaijan SSR, and also of industrial wastes from this crop [1-3]. There is only extremely limited information in the literature on the FA composition of the NLs of olive seeds [4, 5] but, so far as concerns the varieties grown on the Apsheron peninsula, the FA compositions of the NLs of some of them have been given in [1].

Continuing these investigations, we have studied the FA compositions of the NLs of the seeds of four varieties of *Olea europaea* not studied previously: Della Madonna, Tossiiskaya, Shirin-zeitun, and Kara-zeitun.

The neutral lipids were isolated by extracting the ground seeds with petroleum ether (40-60°C) in a Soxhlet apparatus [6]. The yields of NLs from the individual varieties were, respectively, 12.6, 13.8, 13.1, and 14.2% of the weight of the raw material. The total FAs

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were isolated by hot saponification with a 10% methanolic solution of KOH, as described in [7]. The FA methyl esters were analyzed by the GLC method on a Chrom-4 chromatograph (Czechoslovakia) using a 4 mm × 2.5 m column filled with 17% of ethylene succinate on Chromaton N-AW-DMCS at 196°C with a rate of flow of carrier gas (helium) of 62 ml/min. The amounts of the individual components were calculated as the products of the heights of the peaks by the retention times in minutes [8].

Below we give the FA compositions of the NLs of the seeds of the olive varieties investigated (GLC, %):

Variety	16:0	16:1	18:0	18:1	18:2	18:3	20:0	Σ _{sat}	Σ _{unsat}
Della Madonna	6.9	0.7	2.0	74.7	14.2	1.5	Tr.	8.9	91.1
Tossiiskaya	10.6	1.3	3.5	71.5	10.4	2.6	0.1	14.2	85.8
Shirin-zietun	9.2	1.3	2.6	73.0	11.7	2.1	0.1	11.9	88.1
Kara-zeitun	9.7	0.5	3.6	67.7	15.9	2.1	0.5	13.8	86.2

Seven components were detected in the FAs in each case. The lipids of the olive varieties studied were highly unsaturated and contained from 85.8 to 91.1% of unsaturated acids. Saturated fatty acids were represented by the 16:0, 18:0, and 20:0 types. The 18:1 acid was dominating among the unsaturated FAs, and the 16:0 acid among the saturated ones.

Thus, it may be concluded that variety features do not affect the qualitative composition of the fatty acids, but quantitative changes in the amounts of individual components are observed.

This is the first time that the fatty acid compositions of the neutral lipids of the above-mentioned varieties of olive have been studied.

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