CAROTENOIDS OF SARSAPARILLA

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Sarsaparilla (smilax) belongs to the family Liliaceae which includes 200 species of lianas growing mainly in the tropics and subtropics. In Georgia, wild sarsaparilla growing to a height of up to 20 m is common. Sarsaparilla has long been used in Georgian cuisine (ékala). The attractive table properties of a culinary article from the plant have led to its production in the preserving industry. The preserving factories of the region make sarsaparilla preserves, and there is a tendency to a further increase in their production.

We have investigated the carotenoid complex of sarsaparilla leaves with the aim of determining its food value and that of the product prepared from it. The composition of the carotenoids was determined by the procedure described in [1]. After saponification of the initial extract and the elimination of the saponifiable fraction, the carotenoids were extracted with petroleum ether. Individual carotenoids were obtained by combining the methods of column chromatography (CC) on MgO and $ZnCO_3$ and thin-layer chromatography (TLC) [1].

The carotenoids isolated were identified on the basis of the maxima of their absorption curves in various solvents on a SF-10 spectrophotometer [1-3], their behavior on CC and TLC and in solutions, the chromatography of mixed samples with known carotenoids, and the performance of color reactions [2, 3]. Quantitative determinations were based on specific extinction coefficients.

The amount of carotenoids in the sarsparilla leaves was 1.34 mg per 100 g of fresh weight, or, calculated to the dry weight, 9.1 mg.

The carotenoids identified quantitatively were:

Carotenoid	Amount of 100 g of dry mass, mg	Percentage of the total carotenoids
β-Carotene	5.5	60.5
Neo-β-carotene U	0.4	4.8
Cryptoxanthin	0.9	10.4
Lutein	1.6	17.0
Lutein epoxide	0.7	7.3

Thus, β-carotene, which possesses provitamin A activity, predominates in sarsaprilla leaves.

LITERATURE CITED

1. B. G. Savinov and S. E. Kurdritskaya, Proceedings of the IVth All-Union Seminar on Biologically Active (Medical) Substances of Fruit and Berries [in Russian], Michurinsk (1972), pp. 107, 562.
2. F. L. Kalinin, V. P. Lobov, and V. A. Zhidkov, Handbook of Biochemistry [in Russian], Kiev (1971), pp. 579-779
3. F. H. Foppen, Chromatogr. Rev., No. 14, 133, 289 (1971).

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