

LIPIDS OF TOMATO STEMS

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UDC 547.915

There is practically no information in the literature on the lipids of tomato stems but only reports of the fatty acid composition of tomato leaves [1].

We have now studied the stems of a tomato of the genus *Lycopersicum esculentum* (fam. Solanaceae) growing in the territory of Uzbekistan.

The air-dry comminuted tomato stems were extracted with a mixture of chloroform and methanol. The yield of extractive substances was 8.2% of the weight of the stems, and the amount of unsaponifiable substances in the extract was 19.0%, that of carotenoids 1.2%, and that of chlorophylls 1.8% of the weight of the lipids.

Among the lipids, we identified neutral and polar classes. In the neutral lipids we detected [by TLC on silica gel L 5/40 and Silufol in the hexane–diethyl ether (7:3, 6:4, and 6:6) systems with revelation by H₂SO₄, α, α' -bipyridyl, and iodine] hydrocarbons, carotenoids [UV spectrum (λ_{\max} , hexane, nm): 425, 449, 478], esters of sterols and triterpenols with fatty acids, aliphatic alcohols, tocopherols, free fatty acids, triterpenols, sterols, and chlorophylls and their derivatives [UV spectrum (λ_{\max} , hexane, nm): 410, 432, 581, 610, 668]. Phospholipids present [TLC on silica gel in the chloroform–methanol–ammonia (65:35:5) system; spots revealed with the Dragendorff and Vas'kovskii reagents and ninhydrin] were phosphatidylethanolamine, phosphatidylcholine, phosphatidylinositol, lysophosphatidylcholine, and phosphatidic acid, with phosphatidylcholine predominating.

Among glycolipids we detected [by TLC in a system similar to that for the phospholipids, the spots being revealed with α -naphthol] steryl glycosides and their esters with fatty acids, sulfoquinovosyldiacylglycerols, and mono- and digalactosyldiacylglycerols, with the monogalactosyldiacylglycerols predominating.

The total fatty acids were isolated by hot saponification with a 10% methanolic solution of KOH, as described in [2]. The fatty acids, in the form of their methyl esters, were analyzed by GLC on a Chrom-4 chromatograph.

Composition of the fatty acids according to GLC (% on the weight of the acids): 10:0 (tr.); 12:0 (0.5); 14:0 (0.9); 15:0 (2.8); 16:0 (27.8); 16:1 (4.8); X (0.9); 17:0 (1.4); 18:0 (4.4); 18:1 (2.5); 18:2 (16.0); 18:3 (25.4); 22:0 (12.6).

The large amount of the 18:3 acid is characteristic for the lipids of the leaves of the majority of higher plants [3]. In addition, an acid with more than 18 C atom in its molecule was detected in the tomato stems.

The results obtained witness the presence in the tomato stem extract of biologically active components analogous to those in materials studied previously which have found practical use [4].

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