

ORAL PRESENTATIONS

ANALYSIS OF THE LIPID PROFILE OF *Crocus sativus* L. STAMEN

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Crocus sativus L., a perennial species of the family Iridaceae, is cultivated for its highly valuable dried stigmas. However, saffron production generates large amounts of by-products, including tepals, stamens, leaves, and corms, which constitute over 90% of the harvested biomass. The valorization of these residues is important for improving the economic and environmental sustainability of saffron cultivation. Although saffron by-products have been recognized as sources of bioactive compounds, the lipid composition of stamens remains poorly investigated. Therefore, this study focuses on the characterization of the lipid composition of *C. sativus* stamens.

Stamens of *C. sativus* were selected as the study material. Neutral lipids (NL) were isolated with petroleum, whereas polar lipids were using the Folch method. Glycolipid (GL) and phospholipid (PL) fractions were subsequently separated by column chromatography using acetone and methanol as eluents, respectively. The qualitative composition of NL, GL, and PL fractions was analyzed by thin-layer chromatography. Following hydrolysis, fatty acids (FA) were isolated, converted into fatty acid methyl esters, purified by gas chromatographic techniques. The lipid composition of *C. sativus* stamens was investigated in detail. As shown in Table.

Table. FAs content of stamens lipids, GC, % by mass of acids

FA	Quantity			FA	Quantity		
	NL	GL	PL		NL	GL	PL
10:0	0.37	0.28	0.87	18:2n6	26.27	11.23	19.36
12:0	3.24	2.41	1.95	18:3n3	26.67	5.32	3.58
14:0	2.57	2.24	1.56	20:1n9	0.81	0.97	1.01
15:0	0.89	0.91	0.52	20:2n6	1.00	0.69	0.36
16:0	21.24	50.11	46.21	20:3n3	0.18	0.91	0.74
16:1	0.51	1.00	0.67	20:4n6	0.41	-	-
17:0	0.48	1.42	1.36	22:0	0.74	1.53	1.32
18:0	2.30	9.31	8.63	24:0	0.55	2.34	1.97
sis-18:1n9	9.69	7.46	8.30	Σ _{sat. FA}	32.38	70.55	64.39
trans-18:1	2.08	1.87	1.59	Σ _{unsat. FA}	67.62	29.45	35.61

For the first time, the lipid composition of *C. sativus* stamens was comprehensively characterized. The results demonstrated the presence of biologically important unsaturated FAs, particularly linoleic and linolenic acids, indicating that saffron stamens represent a promising source of bioactive compounds and may contribute to the valorization of saffron-processing by-products.

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