Supplementary data for:

A sterol database: GC/MS data and occurrence of 150 sterols in seventy-four oils

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Table S1: Matrices with independent replicates, their differences, and if their sterol pattern was different.

Matrix	number of samples	variety	difference
avocado oil	2	native/raffinated	yes
moringa oil	3	native/raffinated	yes
neem oil	3	supplier	yes
sea buckthorn oil	4	supplier, seed/pulp	yes
tea seed oil	3	supplier, subspecies	yes
amaranth oil	2	supplier	no
argan oil	5	supplier	no
apricot kernel oil	2	supplier	no
baobab oil	2	supplier	no
borage oil	2	supplier	no
(sour) cherry oil	2	supplier, subspecies	no
grape seed oil	2	supplier	no
macadamia oil	2	supplier	no
pomegranate seed oil	2	supplier	no
poppy seed oil	2	subspecies	no
pumpkin oil	2	supplier	no
quinoa	2	supplier	no
rapeseed oil	8	supplier, native/raffinated, fruit/kernel	no
raspberry seed oil	2	supplier	no
rose hip seed oil	2	supplier	no
rice bran oil	2	supplier	no
safflower oil	2	supplier	no
shea butter	3	supplier, subspecies	no
watermelon	2	subspecies	no

Table S2: GC/MS data of detected silylated sterols along with assignment level and prevalence in the matrices

Nr.	compound	RRT	RI_{FAP}	base peak	cn:db	db Δ-Position	level	detected in	comments
ISTD	5α-cholestane	1.00	1866	217	27:0	0	1	74	
1_0	coprostanol (5β-cholestanol)	1.21	2055	215	$S_0$27:0	0	1	0	in cholestanol standard
2_0	cholesterol	1.29	2124	129	$S_0$27:1	Δ5	1	67	
3_0	cholestanol (5α)	1.31	2135	215	$S_0$27:0	0	1	4	
4_0	unknown_2140	1.31	2140	129	$S_0$28:1	Δ7	4	4	
5_0	Δ8-cholesterol	1.32	2148	458	$S_0$27:1	Δ8	2	5	
6_0	unknown_2150	1.33	2150	129	$S_0$27:2	Δ5,SC	4	1	
7_0	desmosterol	1.33	2152	129	$S_0$27:2	Δ5,24(25)	2	2	
8_0	unknown_2153	1.33	2153	253	$S_0$28:3	Δ7,SC,SC	4	1	
9_0	brassicasterol	1.34	2164	129	$S_0$28:2	Δ5,22	2	19	
10_0	5β-campestanol*	1.34*	2165*	215	$S_0$28:0	0	3	0	
11_0	unknown_2176	1.36	2176	129/458	$S_0$28:1	Δ8	4	3	
12_0	unknown_2176b	1.36	2176	n/a	$S_0$28:1	n/a	3	1	brassicastanol (22-de-hydrobrassicastanol)
13_0	ergosta-7,14,22-trienol	1.36	2176	253	$S_0$28:3	Δ7,14,22	2	1	
14_0	lathosterol	1.37	2183	255	$S_0$27:1	Δ7	2	14	
15_0	zymosterol	1.37	2186	456	$S_0$27:2	Δ8,24(25)	2	1	
16_0	24-methylene-ergosta-5,22,24-trienol	1.37	2186	129	$S_0$28:3	$\Delta5,22,24(24^1)$	2	1	
17_1	unknown_2188	1.37	2188	129	$S_1$28:1	n/a	4	1	4-methylsterol
18_t	unknown_2192	1.38	2192	129	S_t30:2	$^6r_{17,18}$	4	0	only after SPE (amyrin 1)
19_0	ergosterol	1.39	2200	253	$S_0$28:3	Δ5,7,22	1	1	
20_1	I. 4α-methyl-24(25)-dihydrozymosterol	1.40	2203	472	$S_1$28:1	Δ8(14)	3	4	4-methylsterol
21_0	unknown_2204	1.40	2204	129	$S_0$28:2	Δ5	4	10	
22_1	31-nor-24(25)-dihydrolanosterol	1.40	2212	472	$S_1$29:1	Δ8(9)	2	4	4-methylsterol
23_0	24-methylenecholesterol	1.40	2213	129	$S_0$28:2	$\Delta5,24(24^1)$	2	53	
24_0	stellasterol	1.40	2213	255	$S_0$28:2	Δ7,22	2	1	
25_0	campesterol/ dihydrobrassicasterol**	1.41	2220	129	$S_0$28:1	Δ5	1	68	
26_1	4α-methyl-24(25)-dihydrozymosterol	1.41	2220	472	$S_1$28:1	Δ8(9)	2	0	only after SPE, 4-methylsterol
27_0	5β-sitostanol	1.41	2220	129	$S_0$29:0	0	2	0	in stigmasterol standard after hydrogenation
28_t	unknown_2224	1.41	2224	129	S_t30:2	$^6r_{17,18}$	4	1	amyrin
29_0	unknown_2227	1.41	2227	213	$S_0$29:2	Δ7,SC	4	8	
30_0	unknown_2228	1.41	2228	129	$S_0$29:2	Δ5,SC	4	1	
31_t	unknown_2229	1.41	2229	129	S_t30:2	$\Delta5\ ^6r_{17,18}$	3	2	I. glutinol
32_0	$24(24^1)$-dehydroergosterol	1.42	2230	211	$S_0$28:4	$\Delta5,7,22,24(24^1)$	2	1	
33_0	ergosta-8,$24(24^1)$-dienol (fecosterol)	1.42	2230	211	$S_0$28:2	$\Delta8,24(24^1)$	2	1	
34_0	campestanol/ ergostanol**	1.42	2231	215	$S_0$28:0	0	2	59	
35_0	ergosta-7,22-dienol	1.42	2237	470	$S_0$28:2	Δ7,22	2	4	
36_0	5-dehydroepisterol	1.43	2237	129	$S_0$28:3	$\Delta5,7,24(24^1)$	2	1	
37_2	dihydroagnosterol	1.43	2242	498/253	$S_2$30:2	Δ7,9(11)	2	1	
38_0	Δ8-campesterol/ ergost-8-enol**	1.43	2242	472	$S_0$28:1	Δ8	2	13	
39_0	stigmasterol/ poriferasterol	1.43	2242	129	$S_0$29:2	Δ5,22	1	68	
40_0	unknown_2242	1.43	2242	n/a	$S_0$28:3	n/a	4	1	
41_0	unknown_2243	1.43	2243	255	$S_0$29:2	Δ7,SC	4	1	
42_2	parkeol	1.43	2243	129	$S_2$30:2	Δ9(11),24(25)	2	2	
43_0	unknown_2244	1.43	2244	129	$S_0$29:0	0	4	0	in stigmasterol standard after hydrogenation
44_1	unknown_2251	1.43	2251	484	$S_1$29:2	n/a	4	6	4-methylsterol
45_1	unknown_2251b	1.43	2251	129	$S_1$29:2	n/a	4	3	14-methyl-4-methyl-sterol 1
46_0	unknown_2253	1.43	2253	129	$S_0$28:2	Δ5,SC	4	1	
47_0	stigmasta-22-enol	1.44	2256	486	$S_0$29:1	Δ22	2	23	in partly hydrogenated stigmasterol standard
48_1	lophenol	1.44	2258	472	$S_1$28:1	Δ7	2	4	
49_2	dihydrolanosterol	1.44	2261	129	$S_2$30:1	Δ8	2	5	
50_0	unknown_2261	1.44	2261	213	$S_0$28:2	Δ7,SC	4	2	
51_0	ergosta-5,7-dienol	1.44	2262	129	$S_0$28:2	Δ5,7	2	1	
52_0	unknown_2267	1.45	2267	255	$S_0$29:2	Δ7,SC	4	6	
53_t	unknown_2268	1.45	2268	129	S_t30:2	$\Delta13(18)\ ^6r_{17,18}$	4	0	only after SPE (amyrin 2)
54_t	unknown_2269	1.45	2269	129	S_t30:2	$\Delta5\ ^6r_{17,18}$	4	0	only after SPE (I. glutinol 1)
55_0	campesta-5,24(25)-dienol	1.45	2270	129	$S_0$28:2	Δ5,SC	2	46	
56_0	unknown_2270b	1.45	2270	213	$S_0$29:1	n/a	4	44	
57_0	ergosta-7,$24(24^1)$-dienol (episterol)	1.45	2271	213	$S_0$28:2	Δ7,SC	2	3	
58_0	unknown_2271	1.45	2271	129	$S_0$29:2	Δ5,SC	4	1	

59_0	Δ7-campesterol/ ergosta-7-enol (fungisterol)**	1.46	2278	255/472	$S_0$28:1	Δ7	2	57	
60_0	unknown_2279	1.46	2279	129	$S_0$29:2	Δ5,23	3	19	Δ5,23-stigmastadienol
61_0	unknown_2282	1.46	2282	486	$S_0$29:1	Δ8	4	22	
62_2	agnosterol	1.46	2285	496/253	$S_2$30:3	Δ7,9(11),24	2	1	
63_0	clerosterol	1.46	2285	129	$S_0$29:2	Δ5,25	2	66	
64_0	unknown_2285	1.46	2285	484	$S_0$29:2	Δ7,SC	4	1	
65_2	unknown_2292	1.46	2292	484	$S_2$30:2	n/a	4	1	I. lanosterol 1
66_2	lanosterol	1.48	2303	129	$S_2$30:2	Δ8(9),24	2	72	only after SPE distinguishable from obtusifoliol
67_1	obtusifoliol	1.48	2303	129	$S_1$30:2	$\Delta8(9),24(24^1)$	3	0	only after SPE distinguishable from lanosterol
68_0	β-sitosterol/ clionasterol	1.48	2303	129	$S_0$29:1	Δ5	1	67	
69_0	stigmasta-7,22,25-trienol	1.48	2303	255	$S_0$29:3	Δ7,22,25	2	3	
70_0	spinasterol	1.48	2303	255	$S_0$29:2	Δ7,22	2	6	
71_0	fucosterol	1.48	2303	129	$S_0$29:2	$\Delta5,24(24^1)$	2	1	
72_0	unknown_2309	1.49	2309	213	$S_0$29:2	Δ7,SC	4	3	
73_t	unknown_2312	1.49	2312	189	S_t30:2	$\Delta18\ {}^6r_{17,18}$	4	0	only after SPE (I. germanicol)
74_t	δ-amyrin	1.49	2315	189	S_t30:2	$\Delta13(18)\ {}^6r_{17,18}$	2	11	
75_1	unknown_2315	1.49	2316	129	$S_1$29:2	n/a	4	0	only after SPE (14-methyl-4-methyl-sterol 2)
76_0	sitostanol	1.49	2316	215	$S_0$29:0	0	2	68	
77_0	Δ5-avenasterol (isofucosterol)	1.49	2316	129	$S_0$29:2	Δ5,24	2	69	
78_0	stigmasta-7,24-dienol	1.49	2316	484	$S_0$29:2	$\Delta7,24(24^1)$	2	2	
79_2	unknown_2316	1.49	2316	129	$S_2$30:2	n/a	4	4	I. lanosterol 2
80_t	β-amyrin	1.50	2322	218	S_t30:2	$\Delta12\ {}^6r_{17,18}$	2	44	
81_0	Δ8-sitosterol	1.50	2322	486	$S_0$29:1	Δ8	3	45	
82_2	cycloartanol	1.51	2326	129	$S_2$30:1	$0\ {}^3r_{9,10}$	2	3	
83_t	unknown_2326	1.51	2326	129	S_t30:2	${}^6r_{17,18}$	4	1	amyrin
84_0	unknown_2327	1.51	2327	129	$S_0$29:2	Δ5,SC	4	1	
85_2	butyrospermol	1.51	2331	129	$S_2$30:2	Δ7,24	2	32	
86_0	stigmasta-5,24(25)-dienol	1.52	2337	129	$S_0$29:2	Δ5,24(25)	2	60	
87_0	unknown_2339	1.52	2339	213	$S_0$29:2	Δ7,SC	4	2	
88_t	unknown_2340	1.52	2340	129	S_t29:2	$\Delta18\ {}^6r_{17,18}$	4	2	germanicol derivative
89_2	unknown_2341	1.52	2341	129	$S_2$31:2	n/a	4	1	I. 24-methylene-24,25-dihydrolanosterol
90_1	unknown_2341b	1.52	2341	129	$S_1$29:2	n/a	4	0	only after SPE (I. gramisterol 1)
91_t	unknown_2342	1.52	2342	129	S_t30:2	n/a	4	0	only after SPE (I. glutinol 2)
92_t	unknown_2343	1.52	2343	129	S_t30:2	${}^6r_{17,18}$	4	1	amyrin
93_0	stigmasta-7,25-dienol	1.52	2344	255	$S_0$29:2	Δ7,25	2	6	
94_2	unknown_2344	1.52	2344	129	$S_2$30:2	n/a	4	17	I. lanosterol 3
95_2	unknown_2344b	1.52	2344	129	$S_2$30:2	n/a	4	0	only after SPE (I. lanosterol 4)
96_t	unknown_2348	1.53	2348	129	S_t30:2	n/a	4	5	amyrin
97	unknown_2349	1.53	2349	486	$S_7$30:1	n/a	4	7	
98_t	unknown_2351	1.53	2351	129	S_t30:2	n/a	4	3	amyrin
99_2	24-methylene-24,25-dihydrolanosterol	1.53	2352	129	$S_2$31:2	$\Delta8,24(24^1)$	2	43	
100_1	gramisterol	1.53	2352	129	$S_1$29:2	$\Delta7,24(24^1)$	2	50	
101_2	unknown_2357a	1.54	2357	129	$S_2$30:2	n/a	4	2	I. lanosterol
102_2	unknown_2357b	1.54	2357	129	$S_2$30:2	${}^6r_{17,18}$	4	7	I. cycloartenol
103_1	unknown_2359	1.54	2359	129	$S_1$30:2	n/a	4	0	only after SPE (14-methyl-4-methyl-sterol 3)
104_0	Δ7-sitosterol	1.54	2361	255	$S_0$29:1	Δ7	2	58	
105_2	unknown_2361	1.54	2361	129	$S_2$30:2	n/a	4	7	I. lanosterol
106_t	α-amyrin	1.54	2361	218	S_t30:2	$\Delta12\ {}^6r_{17,18}$	2	52	
107_1	cycloeucalenol	1.55	2367	129	$S_1$30:2	$\Delta24(24^1)\ {}^3r_{9,10}$	2	12	
108_2	tirucallol	1.55	2367	129	$S_2$30:2	Δ8(9),24(25)	4	12	
109_2	cycloartenol	1.55	2367	129	$S_2$30:2	$\Delta24(25)\ {}^3r_{9,10}$	2	66	
110_t	lupeol	1.55	2367	189	S_t30:2	$\Delta20\ {}^5r_{17,18}$	2	30	
111_0	Δ7-avenasterol	1.55	2373	253	$S_0$29:2	$\Delta7,24(24^1)$	2	56	
112_t	unknown_2374	1.55	2374	218	S_t30:2	${}^6r_{17,18}$	4	2	amyrin
113_1	unknown_2375	1.55	2375	129	$S_1$30:2	$\Delta8,24(24^1)$	3	1	obtusifoliol
114_2	unknown_2380	1.56	2380	129	$S_2$30:2	n/a	4	1	4,4-dimethylsterol
115_1	unknown_2381	1.56	2381	129	$S_1$30:1	n/a	4	1	4-methylsterol
116_2	unknown_2385	1.56	2385	129	$S_2$31:2	n/a	4	3	I. 24-methylene-24,25-dihydrolanosterol 2
117_t	unknown_2386	1.57	2386	129	S_t30:2	${}^6r_{17,18}$	4	4	amyrin
118_2	unknown_2395	1.57	2395	129	$S_2$31:2	${}^3r_{9,10}$	4	3	I. 24-methylenecycloartanol 1
119_2	unknown_2396	1.58	2396	129	$S_2$31:2	n/a	4	0	only after SPE (I. 24-methylene-24,25-dihydrolanosterol 3, 28-methylobtusifoliol)

120_1	unknown_2400	1.58	2400	129	$S_1$30:2	n/a	4	0	only after SPE (14-methyl-4-methyl-sterol 4)
121_2	unknown_2402	1.58	2402	129	$S_2$31:1	$^3r_{9,10}$	4	0	4,4-dimethylsterol, only after hydrogenation
122_2	unknown_2403	1.58	2403	129	$S_2$31:2	n/a	4	3	4,4-dimethylsterol
123_1	unknown_2405	1.59	2405	129	$S_1$30:1	n/a	4	1	4-methylsterol
124_2	unknown_2407a	1.59	2407	129	$S_2$31:2	$^3r_{9,10}$	4	3	I. 24-methylenecycloartanol 2
125_2	unknown_2407b	1.59	2407	129	$S_2$31:2	n/a	4	2	4,4-dimethylsterol
126_1	unknown_2409	1.59	2409	129	$S_1$29:2	n/a	4	1	4-methylsterol, I. gramisterol 2
127_2	unknown_2414	1.60	2414	129	$S_2$31:2	n/a	4	1	4,4-dimethylsterol
128_2	unknown_2417	1.6	2417	129	$S_2$31:2	Δ23 or Δ25 $^3r_{9,10}$	4	4	I. 24-methylenecycloartanol 3
129	unknown_2420	1.61	2420	129	$S_?$30:0	n/a	4	1	
130_2	24-methylenecycloartanol	1.61	2421	129	$S_2$31:2	Δ24 $^3r_{9,10}$	2	69	
131_1	unknown_2424	1.61	2424	129	$S_1$30:2	n/a	4	3	4-methylsterol 1
132_2	unknown_2424b	1.61	2424	129	$S_2$31:1	$^3r_{9,10}$	4	0	4,4-dimethylsterol, only after hydrogenation
133_2	unknown_2426	1.61	2426	129	$S_2$31:2	n/a	4	1	4,4-dimethylsterol
134_2	unknown_2431	1.62	2431	129	$S_2$30:2	n/a	4	1	4,4-dimethylsterol
135_2	24-methyllanosterol	1.62	2432	129	$S_2$31:2	Δ8,24	2	1	
136	unknown_2434	1.62	2434	129	$S_?$30:0	n/a	4	1	
137_1	unknown_2436	1.63	2436	129	$S_1$30:2	n/a	4	2	4-methylsterol
138_1	unknown_2439	1.63	2439	500	$S_1$30:1	n/a	4	13	4-methylsterol, 24α-ethyllophenol
139_t	unknown_2442	1.63	2442	129	S_t30:2	Δ20 $^6r_{17,18}$	4	12	I. taraxasterol
140_2	unknown_2444	1.63	2444	129	$S_2$30:2	n/a	4	2	I. 24-methylene-24,25-dihydrolanosterol 4
141_t	erythrodiol	1.64	2449	496	S_t30:2	Δ12	2	5	diol, (+ OH an C-28)
142_1	citrostadienol	1.65	2453	129	$S_1$30:2	Δ7,24	2	63	
143_t	unknown_2454	1.65	2454	129	S_t30:2	Δ20 $^6r_{17,18}$	4	0	I. taraxasterol
144_2	unknown_2456	1.66	2456	129	$S_2$31:2	n/a	4	5	4,4-dimethylsterol
145_2	unknown_2469	1.66	2469	129	$S_2$31:2	$^3r_{9,10}$	4	1	4,4-dimethylsterol
146_2	cyclobranol	1.68	2486	129	$S_2$31:2	Δ24(25) $^3r_{9,10}$	2	17	
147_t	uvaol	1.69	2489	129/496	S_t30:2	Δ12(13)	2	3	diol, (+ OH an C-28)
148_2	unknown_2495	1.70	2495	129	$S_2$32:2*	$^3r_{9,10}$	4	0	4,4-dimethylsterol, only after SPE (isomer 1)
149_2	unknown_2510	1.71	2510	129	$S_2$32:2*	$^3r_{9,10}$	4	2	4,4-dimethylsterol, isomer 2
150_2	unknown_2524	1.74	2524	129	$S_2$32:2*	$^3r_{9,10}$	4	2	4,4-dimethylsterol, isomer 3

* proposed **24α- and 24β-isomers. The second isomer (24β-configuration) was securely detected only in truffles.

RRT – retention time relative to the internal standard 5α-cholestane, RI_{FAP} – FAP-retention index, cn – carbon number, DB – number of double bonds or double bond equivalents (in the case of a cyclopropane ring or pentacyclic backbone such as in cycloartenol and amyrins) with S_0 indicating 4-desmethylsterols and -stanols, S_1 indicating 4-methylsterols, S_2 indicating 4,4-dimethylsterols, and S_t indicating pentacyclic triterpenoids (e.g. amyrins) according to Schlag *et al*. (2023), Δ – location of double bond(s), n/a – not available, I – isomer, ^xr_y – ringsystem, x: number of carbon atoms in the ring, y: place in the sterol backbone where the ring is added. Assignment levels: 1) standard available, 2) major sterol, verified by GC/MS data, 3) tentative assignment, 4) unknown: GC/MS equivocal or of insufficient quality according to Schlag *et al*. (2022).

Table S3: Sterol distribution [%] of the detected silylated sterols in 70 analyzed matrices.

		(a) common edible oils													(b) nut oils			
Nr.	compound	a-1	a-2	a-3	a-4	a-5	a-6	a-7	a-8	a-9	a-10	a-11	a-12	a-13	b-14	b-15	b-16	b-17
2_0	cholesterol	E	F	F	F	D	F	E	F	F	F	F	E	E	F			F
4_0	unknown_2140					F												
5_0	Δ8-cholesterol					F												
9_0	brassicasterol				F	D				D			F	E				F
14_0	lathosterol				F	F												F
21_0	unknown_2204		F			F			F			F						F
23_0	24-methylenecholesterol	F	D	F	E	D	F	F	E	E	F	E	E	F	F			E
25_0	campesterol/ dihydrobrassicasterol	D	**B**	D	B	**A**	E	C	C	**A**	C	B	B	D	E	E	D	C
29_0	unknown_2227		D									E		E				
34_0	campestanol/ ergostanol	F		F	F	F		F	F	F	E	F	E	F	F	F	F	F
35_0	ergosta-7,22-dienol										F							
38_0	Δ8-campesterol/ ergost-8-enol					F				F	E			F				
39_0	stigmasterol/ poriferasterol	D	D	F	D	F	F	C	E	F	D	D	B	C	E	E	E	D
44_1	unknown_2251				E	E												F
47_0	stigmasta-22-enol	F									F		F			F		
55_0	campesta-5,24(25)-dienol	F, Z	E, Z	F, Z	E, Z	E, Z		F, Z	E, Z	Z	E, Z	F, Z	Z	Z				F, Z
56_0	unknown_2270b	Z	Z	Z	Z	Z		Z	Z	F, Z	Z	Z	F, Z	F, Z				Z
59_0	Δ7-campesterol/ ergosta-7-enol (fungisterol)	F	E	F	F	F	F	F	F	F	D, Z	F	F	E		F		E
60_0	unknown_2279			F	F	F	F	F	F		Z				F			
61_0	unknown_2282										Z			Z			Z	
63_0	clerosterol	E	E	E	F	E	F	E	E	F	E, Z	E	F	E, Z	E	F	E, Z	E
$66_2/67_1$	lanosterol/obtusifoliol	E	D	E	E	E	E	E	E	E	E	E	E	D	E	E	F	D
68_0	β-sitosterol/ clionasterol	**A**	**A**	**A**[a]	**A**	**A**	**A**	**A**[a]	**A**[a]	**A**	**A**	**A**[a]	**A**[b]	**A**[b]	**A**[a]	**A**	**A**[a]	**A**
74_t	δ-amyrin								D							E		
76_0	sitostanol	E	E	E	F, Z	F	E	E	E	F	D	E	E	E	E	D	E	E, Z
77_0	Δ5-avenasterol (isofucosterol)	D	D	D	C, Z	C	D	E	C	D	D	C	D	D	C	F	D	D, Z
79_2	unknown_2316				Z													Z
80_t	β-amyrin	E	E		F	F	E	E	E	F	D		D	E	F	B	F	E
81_0	Δ8-sitosterol	F	F							F	E			E		F	F	F
83_t	unknown_2326			E														
85_2	butyrospermol	E	E	D			D						E			E		F
86_0	stigmasta-5,24(25)-dienol	E	E	E	E	E	F	E	E	F	E	E	F	E	E	F	E	E
94_2	unknown_2344	E	E		E													E
96_t	unknown_2348															F		
97	unknown_2349												F, Z					
98_t	unknown_2351										D, Z							
99_2	24-methylene-24,25-dihydrolanosterol	Z	Z	Z	Z	Z	Z		Z	Z	Z			Z	Z			Z
100_1	gramisterol	E, Z	D, Z	F, Z	E, Z	F, Z	E, Z		E, Z	F, Z	Z	E, Z	Z	E, Z	F, Z			E, Z
102_2	unknown_2357b	F	Z		E													
104_0	Δ7-sitosterol	E	D, Z	F, Z	F	F	F		F	F	C	E, Z	E	C	F, Z	E	E	D
105_2	unknown_2361		Z	Z								Z			Z			
106_t	α-amyrin	F	E, Z			F	F		F	F	D		E	D	F, Z	**A**	F	E
108_2	tirucallol	**B**		E			D						D					
109_2	cycloartenol	**B**	**B**		**A**	E	D	E	E	E	D	E	E	D	E	D	E	B
110_t	lupeol			D					E		E		E	E			F	
111_0	Δ7-avenasterol	E	E	F	E	F			F	F	D	E	E	D	F		F	E
112_t	unknown_2374															E		
114_2	unknown_2380							E										
130_2	24-methylenecycloartanol	**B**	D	E	D	F	**A**	E	E	F	E	E	E	D	E	E	E	D
138_2	unknown_2439													E				
139_t	unknown_2442										E					E		F
142_1	citrostadienol	E	D	E	E	F	D		E	F	E	E	E	C	E	E	E	D
146_2	cyclobranol	E			E		D		E						E			E
	∑sterols detected	30	29	26	30	31	23	19	28	26	32	23	28	30	23	23	19	33
	main sterol [mg/100g oil]	140	140	480	160	370	120	33	91	390	150	400	110	24	86	38	93	210
	total content [mg/100g oil]	310	300	520	470	680	220	41	120	650	280	530	180	380	95	73	99	420
	total number of analyzed oils	1	2	1	1	1	1	1	2	8	2	1	1	1	1	1	1	1

The sterols in the oils were classified according to their relative percentage to the total peak area [%]. Sterol abundance: A) >25%, B) 10-25%, C) 5-10%, D) 1-5%, E) 0.1-1%, F) >0.1%, X) no correction factors available, Z) coelution. A further distinction was made for β-sitosterol: A^a) >70%, A^b) 60-70%). a-1) black cumin oil, a-2) borage oil, a-3) evening primrose oil, a-4) linseed oil, a-5) mustard oil, a-6) olive oil, a-7) palm oil, a-8) poppy seed oil, a-9) rapeseed oil, a-10) safflower oil, a-11) sesame oil, a-12) soybean oil, a-13) sunflower oil, b-14) almond oil, b-15) brazil nut, b-16) hazelnut oil, b-17) kukui nut oil.

		(b) nut oils				(c) grain oils						(d) fruit oils				
Nr.	compound	b-18	b-19	b-20	b-21	c-22	c-23	c-24	c-25	c-26	c-27	d-28	d-29	d-30	d-31	d-32
2_0	cholesterol	F	F	F	F	F	F	F	F	F	F	F	F		F	F
9_0	brassicasterol		F	F						F	F					
14_0	lathosterol								F	F	F					
21_0	unknown_2204									F		F				
23_0	24-methylenecholesterol	F	F				F	F	F	F	F	F	E		F	F
25_0	campesterol/ dihydrobrassicasterol	D	C	D	E	D	C	B	C	**B**	B	E	D	E	D	E
30_0	unknown_2228	F														
34_0	campestanol/ ergostanol	F	F	F		F	F	E	F	D	E	F		F	F	F
38_0	Δ8-campesterol/ ergost-8-enol								F		F					
39_0	stigmasterol/ poriferasterol	D	C	E	F	F	D	D	E	C	E	F	F		D	F
47_0	stigmasta-22-enol		F					F		F	F				F	
50_0	unknown_2261									F						
55_0	campesta-5,24(25)-dienol	F, Z	Z				F, Z	Z	F, Z	E	F, Z	Z	F, Z		Z	
56_0	unknown_2270b	Z	F, Z				Z	F, Z	Z		Z	F, Z	Z		F, Z	
59_0	Δ7-campesterol/ ergosta-7-enol (fungisterol)	E	E, Z	F		F	F	F	F	D, Z	E	F		F	F	F
60_0	unknown_2279		Z			F	F			Z		F	F			
61_0	unknown_2282	Z		Z						Z				Z		Z
63_0	clerosterol	E, Z	E	E, Z	F	E	F	E	E	E, Z	E	E	E,	F, Z	E	F, Z
$66_2/67_1$	lanosterol/obtusifoliol	D	E	E	E	E	E	E	E	E	E	F	E	E	E	E
68_0	β-sitosterol/ clionasterol	**A**[a]	**A**[a]	**A**[a]	**A**[a]	**A**[a]	**A**[a]	**A**[a]	**A**[a]	**A**	**A**[a]	**A**[a]	**A**[a]	**A**[a]	**A**[a]	**A**[a]
76_0	sitostanol	E	E	E	E	E	D	D	E	D	D	D	E	D	D	D
77_0	Δ5-avenasterol (isofucosterol)	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D
80_t	β-amyrin	E	E	E		E	E	E	E	F	E			F	D	F
81_0	Δ8-sitosterol	E	F	F			F		F	F	F			F	F	F
85_2	butyrospermol								E						E	
86_0	stigmasta-5,24(25)-dienol	E	E	E	E	E	E	E	E	E	E	E	E	E		F
89_2	unknown_2341									E						
94_2	unknown_2344									E						
97	unknown_2349		Z													
99_2	24-methylene-24,25-dihydrolanosterol		Z	Z			Z	Z	Z	Z	Z	Z		F, Z	E, Z	E, Z
100_1	gramisterol	E	F, Z	E, Z			D, Z	F, Z	E, Z	D, Z	E, Z	E, Z	E,	Z	Z	Z
104_0	Δ7-sitosterol	D	E	E		F, Z	F	F	E	D	E	F	F, Z	E	E	E
105_2	unknown_2361					Z							Z			
106_t	α-amyrin	E	E	E		F, Z	E	F	E	E	E			F	E	F
107_1	cycloeucalenol								E			E				F
108_2	tirucallol					E										
109_2	cycloartenol	D	D	D	B	E	D	E	D	C	E	F	D	E	C	E
110_t	lupeol	E	E	D							F				E	F
111_0	Δ7-avenasterol	E	E	F			E	F	E	E	E	F		E	E	E
116_2	unknown_2385									E						
118_2	unknown_2395									D						
122_2	unknown_2403															E
124_2	unknown_2407a									D						
128_2	unknown_2417							E		C						
130_2	24-methylenecycloartanol	E	E	D	E	E	E	E	E	C	E	E	D	D	D	C
131_1	unknown_2424a									E						
137_1	unknown_2436															
138_2	unknown_2439	F								E		F				F
141_t	erythrodiol														X	
142_1	citrostadienol	D	E	E	E	E	E	E	E	E	E	D	D	E	E	E
144_2	unknown_2456									D						
146_2	cyclobranol			E			E			C						F
149_2	unknown_2510															X
150_2	unknown_2524															X
	∑sterols detected	27	29	25	12	20	26	25	28	40	29	25	19	20	27	30
	main sterol [mg/100g oil]	160	160	140	110	180	250	740	290	700	1070	150	400	370	190	270
	total content [mg/100g oil]	200	210	160	130	200	320	1000	370	2010	1410	170	450	410	270	310
	total number of analyzed oils	2	1	1	1	1	1	1	1	2	1	2	2	2	2	1

The sterols in the oils were classified according to their relative percentage to the total peak area [%]. Sterol abundance: A) >25%, B) 10-25%, C) 5-10%, D) 1-5%, E) 0.1-1%, F) >0.1%, X) no correction factors available, Z) coelution. A further distinction was made for β-sitosterol: A[a]) >70%, A[b]) 60-70%). b-18) macadamia nut oil, b-19) peanut oil, b-20) pistachio oil, b-21) walnut oil, c-22) beechnut oil, c-23) chia oil, c-24) corn oil, c-25) hemp oil, c-26) rice bran oil, c-27) wheat germ oil, d-28) apricot kernel oil, d-29) avocado oil, d-30) (sour) cherry seed oil, d-31) grape seed oil, d-32) mahaleb cherry seed oil.

		(d) fruit oils								(e) residual oils								
Nr.	compound	d-33	d-34	d-35	d-36	d-37	d-38	d-39	d-40	e-41	e-42	e-43	e-44	e-45	e-46	e-47	e-48	e-49
2_0	cholesterol	F	F	F	F	E	F	F	E	E	F	F	F	F	E	E	F	F
9_0	brassicasterol	E							E			C				F		
14_0	lathosterol					F												
23_0	24-methylenecholesterol	F	F	F		F	F	F	E		F	E	F	F	F	F		F
25_0	campesterol/ dihydrobrassicasterol	D	D	E	D	D	D	C	C	C	D	**B**	D, Z	D	D	D	D	C
28_t	unknown_2224												Z					
29_0	unknown_2227		E											E				E
34_0	campestanol/ ergostanol	E	F	F	F	F	F	F	F		F	F	F	F	F	F	F	E
38_0	Δ8-campesterol/ ergost-8-enol		F									F						
39_0	stigmasterol/ poriferasterol	**B**	D	E	E	E	E	E	D	E	E	F	D	D	E	D	E	D
44_1	unknown_2251				F			F										
45_1	unknown_2251b					F												
47_0	stigmasta-22-enol	E	F	F		F			F					F				F
52_0	unknown_2267												F					
55_0	campesta-5,24(25)-dienol	Z	F, Z		F, Z	F, Z	F, Z	F, Z	Z	Z		Z	F, Z	F, Z	Z	Z		F, Z
56_0	unknown_2270b	F, Z	Z		Z	Z	Z	Z	F, Z	F, Z		F, Z	Z	Z	F, Z	F, Z		Z
59_0	Δ7-campesterol/ ergosta-7-enol (fungisterol)	E	E		F	F	E	F	F	F	F	F	E	E	F	F	F	E
61_0	unknown_2282		Z		Z								Z	Z			Z	Z
63_0	clerosterol	E	E, Z	E	E, Z	E	E	E	E	E	E	F	E, Z	E, Z	E	E	F, Z	E, Z
$66_2/67_1$	lanosterol/obtusifoliol	E	D	E	E	D	E	E	E	F	F	E	D	D	F	E	E	E
68_0	β-sitosterol/ clionasterol	**A**	**A^b**	**A^a**	**A^a**	**A^a**	**A^a**	**A^a**	**A^a**	**A^b**	**A^a**	**A^b**	**A**	**A^a**	**A^a**	**A^a**	**A^a**	**A^b**
74_t	δ-amyrin						E						D					
76_0	sitostanol	E	E	E	E	E	E	E	E	F	E	F	F	E	E	E	E	E
77_0	Δ5-avenasterol (isofucosterol)	D	E	D	D	D	D	D	D	D	D	E	E	E	D	C	D	E
80_t	β-amyrin	D	E	F	F	E	E	E	E		E	F	**B**	E	E	D	F	F
81_0	Δ8-sitosterol	F	E		F	F	F	F	F	F	F	F	E	E			F	F
85_2	butyrospermol	**B**	F		E		E	E	F				**B**			E	D	F
86_0	stigmasta-5,24(25)-dienol	E	E	E	F	E	E	E	E	F	F	F	F	F		E	E	E
94_2	unknown_2344		E					F		E			E	F				E
97	unknown_2349								X, Z		X							
98_t	unknown_2351												Z					
99_2	24-methylene-24,25-dihydrolanosterol		Z	Z	Z	Z	Z	Z					Z	Z		Z		Z
100_1	gramisterol	E	D, Z	E, Z	E, Z	E, Z	E, Z	E, Z	E, Z			F	E, Z	E, Z		E, Z		D, Z
101_2	unknown_2357a			Z														
102_2	unknown_2357b									E								
104_0	Δ7-sitosterol	D	C	F, Z	E, Z	E	D	E	E	E	E	F	C	D	F	E	E	D
105_2	unknown_2361				Z													
106_t	α-amyrin	E	D		E, Z	E	D	E	E		E	F	D	D	E	E	F	E
107_1	cycloeucalenol	E			E						E						E	
108_2	tirucallol						E						**A**					
109_2	cycloartenol	D	C	E	D	D	D	C	E	B	F	E		D	E	D	F	D
110_t	lupeol	E	E	F	D		D		E						E	E		
111_0	Δ7-avenasterol	D	D		E	E	E	E	E		F		D	D	F	E	E	E
116_2	unknown_2385																	E
117_1	unknown_2386												D					
118_2	unknown_2395																	D
122_2	unknown_2403				F													
124_2	unknown_2407a																	E
128_2	unknown_2417																	D
130_2	24-methylenecycloartanol	E	D	E	E	E	E	E	E	E	F	F	E	D	E	E	F	D
131_2	unknown_2424a																	E
138_2	unknown_2439		E	F	F	F								E				E
139_t	unknown_2442						E						D			D		
140_2	unknown_2444		E			F												
141_t	erythrodiol														X			
142_1	citrostadienol	D	C	E	D	D	E	E	E	F	F		D	D	E	E	E	D
144_2	unknown_2456																	E
146_2	cyclobranol		E															D
	∑sterols detected	28	34	22	31	29	29	27	28	19	22	23	33	29	22	27	22	37
	main sterol [mg/100g oil]	190	140	170	280	350	320	220	190	140	340	350	150	230	390	180	280	350
	total content [mg/100g oil]	460	240	180	320	420	430	280	230	210	370	500	550	320	420	230	310	550
	total number of analyzed oils	1	1	1	2	1	2	2	1	1	2	1	3		1	1	1	3

The sterols in the oils were classified according to their relative percentage to the total peak area [%]. Sterol abundance: A) >25%, B) 10-25%, C) 5-10%, D) 1-5%, E) 0.1-1%, F) >0.1%, X) no correction factors available, Z) coelution. A further distinction was made for β-sitosterol: A^a) >70%, A^b) 60-70%). d-33) passion fruit oil, d-34) peach seed oil, d-35) plum seed oil, d-36) pomegranate seed oil, d-37) prickly pear seed oil, d-38) raspberry

seed oil, d-39) rose hip seed oil, d-40) St. John‘s wort oil, e-41) acrocomia oil, e-42) baobab oil, e-43) broccoli seed oil, e-44) tea seed oil (*camellia sinensis* oil), e-45) tea seed oil (*camellia oleifera* oil), e-46) cottonseed oil, e-47) marigold oil, e-48) mongongo oil, 49) moringa oil.

		(e) residual oils					(f) solanaceae			(g) fats				
Nr.	compound	e-50	e-51	e-52	e-53	e-54	f-55	f-56	f-57	g-58	g-59	g-60	g-61	g-62
2_0	cholesterol	E	F	F	F	C	E	D	E	E	E	E		**A**
3_0	cholestanol (5α)						F	E	F					E
4_0	unknown_2140						F	F		F				
5_0	Δ8-cholesterol						F	F	F					F
6_0	unknown_2150													F
7_0	desmosterol													E
9_0	brassicasterol				E							F		
11_0	unknown_2176						F	F	F					
14_0	lathosterol					F	F	E	F	F		F		E
17_1	unknown_2188								F					
20_1	I. 4α-methyl-24(25)-dihydrozymosterol					F	E	E	F					
21_0	unknown_2204													
22_1	31-nor-24(25)-dihydrolanosterol					F	E	E	E					
23_0	24-methylenecholesterol	E	F		F	Z	Z		Z	F		F		
25_0	campesterol/ dihydrobrassicasterol	D	D	E	C	D	D	D	D	D	D	D		
34_0	campestanol/ ergostanol		F		F	F	F	F	F	F		F		
35_0	ergosta-7,22-dienol					F								
37_2	dihydroagnosterol													E
38_0	Δ8-campesterol/ ergost-8-enol			F		E								
39_0	stigmasterol/ poriferasterol	C	B	F	C	D	D	D	D	B	C	D		
43_2	parkeol												E	
44_1	unknown_2251							E						
45_1	unknown_2251b						E		E					
47_0	stigmasta-22-enol		F		F					F		F		
48_1	lophenol					F, Z	E	D	E					
49_2	dihydrolanosterol					Z	**B**	C	D					**B**
55_0	campesta-5,24(25)-dienol	F, Z			Z		E, Z	F, Z	F, Z			Z		
56_0	unknown_2270b	Z			F, Z		Z	Z	Z			F, Z		
57_0	ergosta-7,24(24[1])-dienol (episterol)					E								
58_0	unknown_2271			F										
59_0	Δ7-campesterol/ ergosta-7-enol (fungisterol)	F		F	E	D						F		
60_0	unknown_2279						F	F						
61_0	unknown_2282					Z	Z	Z	Z					
62_2	agnosterol													E
63_0	clerosterol	E	E	E	E	F, Z	F, Z	F, Z	F, Z	F	E	E		
65_2	unknown_2292													D
$66_2/67_1$	lanosterol/obtusifoliol	E	F	D	E	E	C	E	E	F		E	F	**A**
68_0	β-sitosterol/ clionasterol	**A**[b]	**A**[a]	**A**	**A**[a]	**A**	**A**	**A**	**A**	**A**[a]	**A**	**A**[a]	F	
74_t	δ-amyrin			E				E					D	
76_0	sitostanol	E	E	E	E	E	F	E	F	E	E	E		
77_0	Δ5-avenasterol (isofucosterol)	D	D	E	E	E	D	D	D	E	**B**	D		
79_2	unknown_2316												E	
80_t	β-amyrin	D	F	D	E	D	D	D	E	Z		E	C	
81_0	Δ8-sitosterol			F	F	E	F		Z			F		
82_2	cycloartanol						C	**A**	**B**, Z					
85_2	butyrospermol	C		E		E	E						**B**	
86_0	stigmasta-5,24(25)-dienol	E	F	F	F	E	E	E	F		E	F		
92_t	unknown_2343	E												
93_0	stigmasta-7,25-dienol					F								
94_2	unknown_2344			F			F	F					D	
97	unknown_2349		Z							F				
99_2	24-methylene-24,25-dihydrolanosterol	E, Z		E, Z	Z	Z	E, Z		Z			F		
100_1	gramisterol	Z	F, Z	Z	F, Z	F, Z	Z	F	E, Z					
102_2	unknown_2357b						E	E						
104_0	Δ7-sitosterol	E	F	E	E	**B**			D	F		F	E	
106_t	α-amyrin	E	F	D	F	D		F	F	Z		F	**A**	
107_1	cycloeucalenol		F	D										
108_2	tirucallol	E												
109_2	cycloartenol	E	F	E	E	D	**A**	C	C	E	**B**	E		
110_t	lupeol			E		E	D					F	**B**	
111_0	Δ7-avenasterol	E	F	E	E	D				F		F		

112_t	unknown_2374	Z												
115_1	unknown_2381								D					
116_2	unknown_2385													
117_t	unknown_2386												E	
118_2	unknown_2395													
122_2	unknown_2403			D										
123_1	unknown_2405								E					
124_2	unknown_2407a													
125_2	unknown_2407b												E	
127_2	unknown_2414													
128_2	unknown_2417													
129	unknown_2420									Z				
130_2	24-methylenecycloartanol	D	E	**A**	E	D	E	F	D		C	E	E	
131_1	unknown_2424a								E					
133_2	unknown_2426			E										
134_2	unknown_2431	Z												
136	unknown_2434									Z				
138_2	unknown_2439			E					**B**					
139_t	unknown_2442					F							D	
141_t	erythrodiol			X										
142_1	citrostadienol	F	E	D	E	E	F	E	C		E	E		
144_2	unknown_2456												E	
145_2	unknown_2469			E										
146_2	cyclobranol			E					E		D			
147_t	uvaol			Z										
149_2	unknown_2510			X										
150_2	unknown_2524			X										
	∑sterols detected	27	22	36	26	35	37	34	39	21	12	27	16	11
	main sterol [mg/100g oil]	450	160	740	260	220	420	120	610	160	26	210	860	8380
	total content [mg/100g oil]	650	220	1490	7340	400	1340	310	1590	220	61	240	1510	17500
	total number of analyzed oils	3	1	4	1	1	1	1	1	1	1	1	3	1

The sterols in the oils were classified according to their relative percentage to the total peak area [%]. Sterol abundance: A) >25%, B) 10-25%, C) 5-10%, D) 1-5%, E) 0.1-1%, F) >0.1%, X) no correction factors available, Z) coelution. A further distinction was made for β-sitosterol: A^a) >70%, A^b) 60-70%). e-50) neem oil, e-51) sacha inci oil, e-52) sea buckthorn pulp oil, e-53) tiger nut oil, e-54) milk thistle oil, f-55) chili seed oil, f-56) tomato seed oil, f-57) eggplant, g-58) cocoa butter, g-59) coconut oil, g-60) cupuacu butter, g-61) shea butter, g-62) lanolin.

		(h) seasoning		(i) spinasterol containing oils				(j) extra	
Nr.	compound	h-63	h-64	i-65	i-66	i-67	i-68	j-69	j-70
2_0	cholesterol	E	F	F	F	F	F		F
7_0	desmosterol								F
8_0	unknown_2153								F
9_0	brassicasterol			F					**A**
12_0	unknown_2176b								E
13_0	ergosta-7,14,22-trienol								E
15_0	zymosterol								F
16_0	24-methylene-ergosta-5,22,24-trienol								E
19_0	ergosterol								**A**
21_0	unknown_2204					F		E	
23_0	24-methylenecholesterol	E				F		C	E
24_0	stellasterol			F					
25_0	campesterol/ dihydrobrassicasterol	D	D	D	F	E	E		D
29_0	unknown_2227			F		E			
31_t	unknown_2229								
32_0	24(24[1])-dehydroergosterol								E
33_0	ergosta-8,24(24[1])-dienol (fecosterol)								F
34_0	campestanol/ ergostanol	F	F	F	F	F	F		
35_0	ergosta-7,22-dienol			E					E
36_0	5-dehydroepisterol								F
38_0	Δ8-campesterol/ ergost-8-enol			D		F			E
39_0	stigmasterol/ poriferasterol	D	E	D	E	E	E		E
40_0	unknown_2242								F
41_0	unknown_2243								
46_0	unknown_2253							F	
47_0	stigmasta-22-enol			E	F				
50_0	unknown_2261			E					
51_0	ergosta-5,7-dienol								E

52_0	unknown_2267			D	E	F	F		
55_0	campesta-5,24(25)-dienol	F, Z						D	
56_0	unknown_2270b	Z							
57_0	ergosta-7,24(24[1])-dienol (episterol)			D					E
59_0	Δ7-campesterol/ ergosta-7-enol (fungisterol)			**B**	E	E, Z	E		E
60_0	unknown_2279					Z		F	
61_0	unknown_2282			Z	F		E		
63_0	clerosterol	E	E	F, Z		D		E	
64_0	unknown_2285								
$66_2/67_1$	lanosterol/obtusifoliol	E	E	E	E	E		F	F
68_0	β-sitosterol/ clionasterol	**A**	**A**				**B**		F
69_0	stigmasta-7,22,25-trienol					Z			
70_0	spinasterol			**A**	**A**	**A**, Z	C		
71_0	fucosterol							**A**	
72_0	unknown_2309					D			
74_t	δ-amyrin	D	D		D				
76_0	sitostanol	E	E	E, Z	E, Z	E	D		
77_0	Δ5-avenasterol (isofucosterol)	D	D	F, Z	Z	E	E	E	
78_0	stigmasta-7,24-dienol			Z					F
80_t	β-amyrin	D	**B**	E	C	D	E		
81_0	Δ8-sitosterol	F	F	D	D	E	D		
84_0	unknown_2327							F	
85_2	butyrospermol	D	D	E	C		D		
86_0	stigmasta-5,24(25)-dienol			E				D	
87_0	unknown_2339				E	E			
88_t	unknown_2340	E	E						
93_0	stigmasta-7,25-dienol			E	E	**A**			
96_t	unknown_2348					D			
97	unknown_2349	E							
98_t	unknown_2351		E						
99_2	24-methylene-24,25-dihydrolanosterol	Z							F
100_1	gramisterol			D					
101_2	unknown_2357a					E			
104_0	Δ7-sitosterol	D	E	D	**B**	D	**A**		
106_t	α-amyrin	**B**	**B**		D	E			
107_1	cycloeucalenol			E					
108_2	tirucallol	C	C	E	**B**				
109_2	cycloartenol	E		E		D	**B**	F	
110_t	lupeol				E	F			
111_0	Δ7-avenasterol	E	E	**B**	D	**B**	C		
113_1	unknown_2375								E
117_1	unknown_2386						E		
126_1	unknown_2409			E					
130_2	24-methylenecycloartanol	E	E	D	E	E	D		
131_1	unknown_2424a								
135_2	24-methyllanosterol								F
137_1	unknown_2436			F					
139_t	unknown_2442	D	D		E				
141_t	erythrodiol	X	X						
142_1	citrostadienol	D	D	D	E		E		
146_2	cyclobranol			E					
147_t	uvaol	X	X						
	∑sterols detected	29	24	37	26	30	20	12	27
	main sterol [mg/100g oil]	1240	1190	1060	110	140	4290	2400	8650
	total content [mg/100g oil]	2320	2190	2170	2890	340	9280	270	13100
	total number of analyzed oils	1	1	2	5	2	2	1	1

The sterols in the oils were classified according to their relative percentage to the total peak area [%]. Sterol abundance: A) >25%, B) 10-25%, C) 5-10%, D) 1-5%, E) 0.1-1%, F) >0.1%, X) no correction factors available, Z) coelution. A further distinction was made for β-sitosterol: A^a) >70%, A^b) 60-70%). h-63) marjoram, h-64) thymus, i-65) amaranth oil, i-66) argan oil, i-67) pumpkin seed oil, i-68) quinoa, j-69) wakame, j-70) truffle.

Table S4: Additional samples not being definitely authentic.

		(k) authenticity not secured			(l) not authentic	
Nr.	compound	k-46	k-71	k-72	l-73	l-74
2_0	cholesterol	F			F	F
9_0	brassicasterol					F
21_0	unknown_2204					F
23_0	24-methylenecholesterol					F
25_0	campesterol/ dihydrobrassicasterol	A				C
31_t	unknown_2229		A	A		
34_0	campestanol/ ergostanol	B				E
39_0	stigmasterol/ poriferasterol	F		Z		B
41_0	unknown_2243			E, Z		
43_2	parkeol				E	
42_0	unknown_2244					
47_0	stigmasta-22-enol					F
49_2	dihydrolanosterol	F				
52_0	unknown_2267			E		
55_0	campesta-5,24(25)-dienol	Z				E, Z
56_0	unknown_2270b	Z				Z
59_0	Δ7-campesterol/ ergosta-7-enol (fungisterol)	F	F	E		E, Z
60_0	unknown_2279					Z
61_0	unknown_2282					Z
63_0	clerosterol					E, Z
64_0	unknown_2285			E		
$66_2/67_1$	lanosterol/obtusifoliol		E	E	E	E
68_0	β-sitosterol/ clionasterol	A			E	A
69_0	stigmasta-7,22,25-trienol		Z	Z		
70_0	spinasterol		B, Z	B, Z		
72_0	unknown_2309		E	E		
74_t	δ-amyrin		F		D	
76_0	sitostanol	B		F		E
77_0	Δ5-avenasterol (isofucosterol)			E		D
79_2	unknown_2316				E	
80_t	β-amyrin	F	E	F	D	E
81_0	Δ8-sitosterol	E				F
82_2	cycloartanol					
85_2	butyrospermol			E	B	F
86_0	stigmasta-5,24(25)-dienol	F				E
92_0	stigmasta-7,25-dienol		D	B		
94_2	unknown_2344				D	E
96_t	unknown_2348		E			
$97_?$	unknown_2349	F				
99_2	24-methylene-24,25-dihydrolanosterol					Z
100_1	gramisterol					F, Z
102_2	unknown_2357b					Z
104_0	Δ7-sitosterol	F	E	E	E	E, Z
106_t	α-amyrin	F	E	E	A	E, Z
107_1	cycloeucalenol		D	F		
109_2	cycloartenol		E	E		C
110_t	lupeol		E		B	
111_0	Δ7-avenasterol		E	E		E
116_2	unknown_2385					E
117_t	unknown_2386				E	
118_2	unknown_2395					D
120_2	unknown_2402	F				
123_2	unknown_2407a					D
124_2	unknown_2407b				Z	
126_2	unknown_2414				E	
127_2	unknown_2417					D
130_2	24-methylenecycloartanol		E		E	D
132_1	unknown_2424a		E			E
133_2	unknown_2424b	E				
139_1	unknown_2439	F				E
140_t	unknown_2442				C	
142_1	citrostadienol					D
143_t	unknown_2454					
144_2	unknown_2456				E	D
146_2	cyclobranol					C

	∑sterols detected	19	18	20	18	40
	main sterol [mg/100g oil]	280	88	79	170	150
	total content [mg/100g oil]	620	120	130	340	360
	total number of analyzed oils	2	1	2	1	1

The sterols in the oils were classified according to their relative percentage to the total peak area [%]. Sterol abundance: A) >25%, B) 10-25%, C) 5-10%, D) 1-5%, E) 0.1-1%, F) >0.1%, X) no correction factors available, Z) coelution. A further distinction was made for β-sitosterol: A^a) >70%, A^b) 60-70%). k-46) hydrogenated cottonseed oil, k-71) nara oil, k-72) watermelon oil, l-73) mangobutter, l-74) tamanu oil.

References

Schlag, S., Bräckle, Y., Jelečević, M., & Vetter, W. (2023). Gas chromatography with mass spectrometry analysis of 4,4-dimethylsterols and 4-methylsterols in edible oils after their enrichment by means of solid phase extraction. *J Chromatogr A, 1705*, 464166.

Schlag, S., Huang, Y., & Vetter, W. (2022). GC/EI-MS method for the determination of phytosterols in vegetable oils. *Anal Bioanal Chem, 414(2)*, 1061–1071.