

Table 2. Volatile aldehydes detected along the heat treatment for the seven analyzed oils. Results are expressed in area counts  $\times 10^5 \times g$  for each compound; between brackets it is indicated the ion used for quantification. (VL, virgin linseed oil; AO, algae oil; SF, sunflower oil; HOSF, high-oleic sunflower oil; EVO, extra virgin olive oil; RO, refined olive oil).

COMPOUND	hours	VL	AO	SF	HOSF	EVO 1	EVO 2	RO
Pentanal (44)	0	-	-	-	-	-	-	-
	2	-	-	34.6 ± 5.36	7.79 ± 0.06	-	20.2 ± 0.97	17.5 ± 2.15
	4	-	-	57.4 ± 4.86	16.6 ± 1.20	-	22.7 ± 0.16	28.8 ± 1.20
Hexanal (56)	0	-	-	-	-	1.07 ± 0.11	-	0.57 ± 0.02
	2	5.78 ± 0.79	-	82.3 ± 8.87	12.8 ± 1.06	35.4 ± 5.23	46.5 ± 7.48	39.5 ± 0.30
	4	14.5 ± 4.22	-	170 ± 0.53	41.6 ± 0.66	93.3 ± 4.55	61.1 ± 2.25	35.2 ± 2.34
Heptanal (70)	0	-	-	-	-	-	-	-
	2	1.14 ± 0.00	1.02 ± 0.14	5.19 ± 0.63	4.26 ± 0.06	15.1 ± 0.09	21.1 ± 3.06	18.8 ± 3.93
	4	2.61 ± 0.31	2.50 ± 0.06	12.2 ± 0.51	12.0 ± 0.22	43.1 ± 4.33	30.7 ± 1.30	28.0 ± 2.80
Octanal (43)	0	-	-	-	-	-	-	-
	2	1.53 ± 0.35	-	5.83 ± 0.58	5.69 ± 0.09	72.2 ± 3.05	30.3 ± 0.80	35.5 ± 7.28
	4	-	-	15.3 ± 2.77	23.5 ± 0.22	88.4 ± 1.45	49.0 ± 0.80	58.1 ± 1.48
Nonanal (57)	0	-	-	-	-	2.56 ± 0.15	1.41 ± 0.28	1.60 ± 0.56
	2	8.26 ± 0.55	3.00 ± 0.31	17.1 ± 1.44	32.1 ± 2.16	144 ± 5.78	46.5 ± 1.42	71.7 ± 2.45
	4	12.0 ± 1.40	5.28 ± 0.24	36.9 ± 2.84	50.3 ± 0.08	223 ± 25.0	92.1 ± 7.35	96.2 ± 1.94
<i>(E)</i> -2-propenal (56)	0	-	-	-	-	-	-	-
	2	45.8 ± 4.26	57.3 ± 9.40	26.1 ± 4.53	7.65 ± 0.70	10.6 ± 0.75	10.9 ± 0.79	10.5 ± 1.77
	4	54.5 ± 3.73	79.6 ± 3.56	27.0 ± 0.52	9.36 ± 1.22	8.60 ± 0.98	11.1 ± 1.85	14.4 ± 1.47
<i>(E)</i> -2-butenal (70)	0	-	-	-	-	-	-	-
	2	36.4 ± 1.86	12.5 ± 2.17	-	-	9.06 ± 0.24	5.32 ± 0.53	8.53 ± 0.15
	4	62.0 ± 4.31	20.8 ± 1.64	-	0.92 ± 0.07	8.26 ± 0.24	6.01 ± 0.93	7.73 ± 1.17
<i>(E)</i> -2-pentenal (55)	0	-	-	-	-	-	-	-
	2	14.61 ± 2.15	16.4 ± 2.35	-	-	4.10 ± 0.12	3.88 ± 0.31	3.88 ± 0.18
	4	26.20 ± 3.22	32.2 ± 0.75	-	-	5.09 ± 0.27	31.5 ± 0.02	4.15 ± 0.30
<i>(E)</i> -2-hexenal (55)	0	-	-	-	-	-	3.93 ± 0.71	-
	2	2.25 ± 0.49	-	17.3 ± 3.20	2.60 ± 0.04	6.64 ± 0.24	6.27 ± 0.09	5.61 ± 0.28
	4	4.43 ± 0.43	1.57 ± 0.47	26.3 ± 2.92	5.10 ± 0.48	10.4 ± 1.42	8.07 ± 1.26	5.79 ± 0.34
<i>(E)</i> -2-heptenal (83)	0	-	-	-	-	2.10 ± 0.21	-	-
	2	6.58 ± 0.12	-	122 ± 12.3	16.3 ± 1.03	42.4 ± 1.37	35.0 ± 1.88	27.5 ± 0.55
	4	10.8 ± 1.11	-	193 ± 14.5	30.5 ± 5.63	64.2 ± 3.39	57.8 ± 1.87	25.8 ± 1.61
<i>(E)</i> -2-octenal (70)	0	-	-	-	-	-	-	-
	2	-	-	18.5 ± 1.46	3.02 ± 0.18	13.3 ± 3.97	10.3 ± 0.72	9.47 ± 0.69
	4	-	-	43.8 ± 2.73	6.87 ± 0.50	27.3 ± 2.00	17.9 ± 2.48	11.9 ± 0.18
<i>(E)</i> -2-nonenal (70)	0	-	-	-	-	-	-	-
	2	-	-	2.63 ± 0.58	2.41 ± 0.57	11.5 ± 1.58	9.38 ± 0.54	12.3 ± 0.08
	4	-	2.20 ± 0.28	7.55 ± 0.57	7.32 ± 1.82	35.9 ± 8.65	26.2 ± 8.08	13.4 ± 0.37
<i>(E)</i> -2-decenal (70)	0	-	-	-	-	-	-	-
	2	3.31 ± 0.08	-	13.9 ± 1.82	15.5 ± 0.28	94.7 ± 6.28	186 ± 3.25	92.6 ± 0.08
	4	12.5 ± 3.77	5.39 ± 0.95	73.3 ± 3.48	64.9 ± 8.32	374 ± 18.1	366 ± 6.19	103 ± 13.0
<i>(E)</i> -2-undecenal (70)	0	-	-	-	-	1.35 ± 0.34	-	-
	2	2.72 ± 0.59	-	6.77 ± 1.42	5.33 ± 0.09	68.8 ± 5.20	100 ± 1.73	77.0 ± 2.54
	4	8.45 ± 0.69	4.89 ± 0.68	52.8 ± 0.64	51.1 ± 2.27	357 ± 1.51	232 ± 1.04	113 ± 0.41
<i>(E,E)</i> -2,4-Hexadienal (81)	0	-	-	-	-	-	-	-
	2	1.00 ± 0.23	3.39 ± 0.54	-	-	-	-	-
	4	1.93 ± 0.08	7.02 ± 0.08	-	-	0.59 ± 0.01	-	-
<i>(Z,E)</i> -2,4-Heptadienal (81)	0	0.41 ± 0.06	-	-	-	1.31 ± 0.14	-	-
	2	44.0 ± 1.53	18.5 ± 3.89	2.31 ± 0.25	-	6.38 ± 0.50	4.84 ± 0.00	3.60 ± 0.15
	4	68.0 ± 6.01	29.2 ± 1.87	5.34 ± 0.30	-	6.42 ± 1.03	5.02 ± 1.13	4.45 ± 0.33
<i>(E,E)</i> -2,4-Heptadienal (81)	0	0.47 ± 0.05	-	-	-	-	-	-
	2	166 ± 7.49	59.2 ± 3.75	2.46 ± 0.22	2.33 ± 0.18	27.3 ± 2.22	19.5 ± 2.26	14.3 ± 1.14
	4	267 ± 12.1	93.5 ± 5.61	1.97 ± 0.65	1.60 ± 0.07	21.4 ± 0.87	21.6 ± 2.11	16.9 ± 1.85
<i>(Z,E)</i> -2,4-Nonadienal (81)	0	-	-	-	-	-	-	-
	2	-	-	0.88 ± 0.02	-	-	-	-
	4	-	-	2.45 ± 0.14	-	-	-	-
<i>(E,E)</i> -2,4-Nonadienal (81)	0	-	-	-	-	-	-	-
	2	-	-	3.66 ± 0.42	-	-	-	-
	4	-	-	11.9 ± 0.13	-	4.28 ± 0.19	-	-
<i>(Z,E)</i> -2,4-Decadienal (81)	0	-	-	-	-	-	-	-
	2	3.67 ± 0.66	-	35.6 ± 1.84	5.19 ± 0.33	33.0 ± 0.28	17.6 ± 0.35	11.4 ± 2.32
	4	9.47 ± 0.71	-	163 ± 3.44	8.67 ± 0.71	33.9 ± 1.56	31.4 ± 6.11	19.5 ± 0.27
<i>(E,E)</i> -2,4-Decadienal (81)	0	-	-	-	-	-	-	-
	2	23.5 ± 3.66	-	204 ± 7.34	28.1 ± 0.84	179 ± 5.13	132 ± 4.10	32.9 ± 1.13
	4	73.5 ± 5.65	-	1173 ± 22	60.5 ± 7.55	215 ± 14.9	223 ± 1.45	62.0 ± 5.80
<b>ALKANALS</b>	0	-	-	-	-	3.65 ± 0.05	1.42 ± 0.28	2.18 ± 0.60
	2	16.72 ± 1.06	3.86 ± 0.01	145 ± 16.0	62.7 ± 1.74	267 ± 5.44	165 ± 12.5	183 ± 15.5
	4	29.2 ± 5.10	7.79 ± 0.20	292 ± 4.68	144 ± 2.96	462 ± 10.9	256 ± 4.43	246 ± 4.47
<b>ALKENALS</b>	0	-	-	-	-	3.45 ± 0.48	3.94 ± 0.72	-
	2	111 ± 2.20	86.2 ± 13.8	207 ± 21.1	52.8 ± 2.25	261 ± 8.26	369 ± 7.77	248 ± 0.80
	4	178 ± 7.30	146 ± 4.17	427 ± 20.2	176 ± 20.3	892 ± 23.7	757 ± 16.7	300 ± 12.0
<b>ALKADIENALS</b>	0	0.88 ± 0.12	-	-	-	1.30 ± 0.14	-	-
	2	238 ± 5.45	75.2 ± 15.37	239 ± 14.6	35.6 ± 1.36	246 ± 6.50	175 ± 4.25	62.4 ± 4.76
	4	415 ± 21.3	130 ± 7.53	1357 ± 25.8	65.8 ± 15.4	282 ± 14.6	281 ± 7.90	103 ± 5.05
<b>TOTAL ALDEHYDES</b>	0	0.88 ± 0.12	-	-	-	8.39 ± 0.57	5.35 ± 0.98	2.18 ± 0.60
	2	367 ± 7.31	181 ± 5.77	592 ± 32.0	151 ± 5.14	775 ± 15.1	708 ± 22.9	493 ± 11.6
	4	623 ± 32.65	284 ± 11.5	2077 ± 50.6	386 ± 1.95	1636 ± 2.52	1294 ± 13.2	650 ± 17.4