

Supplementary Information

Table S1

Proximate composition of walnut samples.

	Whole commercial walnut	Whole defective walnut	Walnut kernel	Walnut shell	Green walnut
Moisture and volatiles	5.71	5.34	4.40	8.62	73.94
Total protein	9.28	8.16	20.19	1.43	1.58
Total fat	23.74	24.52	63.37	1.00	0.80
Total fibre	64.26	57.25	14.42	87.99	20.03
Soluble fibre	1.05	0.20	1.57	0.90	0.33
Insoluble fibre	63.21	75.05	12.84	87.10	19.70
Ashes	1.52	1.58	1.87	1.07	1.12
Total carbohydrates	< 1.00	3.15	< 1.00	< 1.00	2.53
Total sugars	1.20	1.26	0.94	0.75	1.14

The results are expressed in g/100 g of sample (% w/w).

Table S2

Fatty acid profile of walnut samples.

	Whole commercial walnut	Whole defective walnut	Walnut kernel	Walnut shell	Green walnut
Σ Saturated fatty acids	24.25	14.76	15.06	17.01	16.29
Σ Monounsaturated fatty acids	27.38	17.69	17.32	56.24	12.59
Σ Polyunsaturated fatty acids	48.37	67.55	67.63	26.75	71.12
Σ Omega-3 fatty acids	5.98	11.73	10.74	3.35	11.00
Σ Omega-6 fatty acids	42.00	55.63	56.70	22.74	59.94
C(4:0) Butyric acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C(6:0) Caproic acid	0.53	0.10	0.08	< 0.01	< 0.01
C(8:0) Caprylic acid	0.14	0.03	0.03	< 0.01	< 0.01
C(10:0) Capric acid	0.02	0.01	< 0.01	< 0.01	< 0.01
C(12:0) Lauric acid	0.04	0.05	0.02	< 0.01	0.32

C(12:1) Lauroleic acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C(14:0) Myristic acid	0.11	0.08	0.04	0.33	0.40
C(14:1) Myristoleic acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C(15:0) Pentadecanoic acid	0.04	0.03	0.03	< 0.01	< 0.01
C(15:1) Pentadecenoic acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C(16:0) Palmitic acid	13.70	9.24	9.00	10.60	10.83
C(16:1) Palmitoleic acid	1.38	0.48	0.38	0.33	1.13
C(17:0) Margaric acid	0.15	0.10	0.08	0.23	0.16
C(17:1) Margaroleic acid	0.06	0.14	0.04	< 0.01	< 0.01
C(18:0) Stearic acid	4.74	3.46	3.76	4.42	3.50
C(18:1) trans-Oleic acid	0.10	0.07	0.04	0.60	0.58
C(18:1) cis-Oleic acid	25.30	16.71	16.58	54.90	10.53
C(18:2) trans-Linoleic acid	0.04	0.11	0.10	0.17	0.18
C(18:2) cis-Linoleic acid	42.00	55.63	56.67	22.70	59.94
C(18:3) trans-Linolenic acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C(18:3) α -Linolenic acid	5.62	11.52	10.50	3.35	11.00
C(20:0) Arachidic acid	0.27	0.19	0.20	0.43	0.28
C(20:1) Gadoleic acid	0.48	0.26	0.26	0.44	0.36
C(20:2) Eicosadienoic acid	0.31	0.09	0.09	0.22	< 0.01
C(20:3) Eicosatrienoic acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C(20:4) Arachidonic acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C(20:5) Eicosapentaenoic acid	0.27	0.11	0.19	< 0.01	< 0.01
C(21:0) Heneicosanoic acid	0.34	0.10	0.08	0.24	< 0.01
C(22:0) Behenic acid	0.38	0.19	0.17	0.48	0.47
C(22:1) Erucic acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C(22:5) Docosapentaenoic acid	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

C(22:6) Docosahexaenoic acid	0.09	0.10	0.05	< 0.01	< 0.01
C(24:0) Lignoceric acid	3.79	1.18	1.56	0.29	0.38
C(24:1) Nervonic acid	0.06	0.03	< 0.01	< 0.01	< 0.01

Values are expressed in g/100 g of fat.

Figure S1

Alluvial diagram of the bioactive compounds identified and quantified in walnut samples.

