

Effect of ultrasound-assisted extraction parameters on total polyphenols and its antioxidant activity from mango residues (*Mangifera indica* L. var. *Manililla*)

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Table S1. Analysis of variance (ANOVA) for total polyphenols content.

TOTAL POLYPHENOLS															
Source	PEEL					ENDOCARP					KERNEL				
	DF	SS	MS	F	p	DF	SS	MS	F	p	DF	SS	MS	F	p
		Adj.	Adj.	Value	Value		Adj.	Adj.	Value	Value		Adj.	Adj.	Value	Value
Model	8	6050699	756337	43.73	0.000	8	345052	43131	45.79	0.000	8	283049	35381	6.03	0.002
Linear	3	637319	212440	12.28	0.000	3	19037	6346	6.74	0.006	3	8461	2820	0.48	0.702
X ₁	1	488601	488601	28.25	0.000	1	7470	7470	7.93	0.015	1	4342	4342	0.74	0.405
X ₂	1	9216	9216	0.53	0.478	1	467	467	0.50	0.494	1	1529	1529	0.26	0.618
X ₃	1	139502	139502	8.07	0.014	1	11100	11100	11.78	0.004	1	2590	2590	0.44	0.518
Interaccions of 2 terms	3	21866	7289	0.42	0.741	3	15890	5297	5.62	0.011	3	8343	2781	0.47	0.706
X ₁ *X ₂	1	2025	2025	0.12	0.738	1	8327	8327	8.84	0.011	1	6201	6201	1.06	0.323
X ₁ *X ₃	1	19460	19460	1.13	0.308	1	6006	6006	6.38	0.025	1	1791	1791	0.30	0.590
X ₂ *X ₃	1	380	380	0.02	0.884	1	1557	1557	1.65	0.221	1	351	351	0.06	0.811
Interaccions of 3 terms	1	12656	12656	0.73	0.408	1	2172	2172	2.31	0.153	1	7074	7074	1.20	0.292
X ₁ *X ₂ *X ₃	1	12656	12656	0.73	0.408	1	2172	2172	2.31	0.153	1	7074	7074	1.20	0.292
Curvature	1	5378858	5378858	310.99	0.000	1	307952	307952	326.93	0.000	1	259171	259171	44.14	0.000
Error	13	224845	17296			13	12245	942			13	76334	5872		
Total	21	6275545				21	357297				21	359383			

X₁: Solvent relation, X₂: Amplitude, X₃: Sonication time.

Table S2. Analysis of variance (ANOVA) for flavonoids content.

FLAVONOIDS															
	PEEL					ENDOCARP					KERNEL				
Source	D F	SS Adj.	MS Adj.	F Value	P Value	DF	SS Adj.	MS Adj.	F Value	P Value	DF	SS Adj.	MS Adj.	F Value	P Value
Model	8	2186947	273368	11.74	0.000	8	167902	20987.8	5.63	0.003	8	424777	53097	76.32	0.000
Linear	3	439125	146375	6.29	0.007	3	10777	3592.5	0.96	0.439	3	108880	36293	52.16	0.000
X ₁	1	393850	393850	16.92	0.001	1	156	156.2	0.04	0.841	1	21470	21470	30.86	0.000
X ₂	1	3791	3791	0.16	0.693	1	3906	3906.2	1.05	0.325	1	36470	36470	52.42	0.000
X ₃	1	41484	41484	1.78	0.205	1	6715	6715.0	1.80	0.203	1	50940	50940	73.22	0.000
Interaccions of 2 terms	3	30462	10154	0.44	0.731	3	111117	37038.9	9.93	0.001	3	145856	48619	69.88	0.000
X ₁ *X ₂	1	1708	1708	0.07	0.791	1	39447	39446.5	10.58	0.006	1	133930	133930	192.49	0.000
X ₁ *X ₃	1	20758	20758	0.89	0.362	1	31113	31112.9	8.35	0.013	1	3650	3650	5.25	0.039
X ₂ *X ₃	1	7997	7997	0.34	0.568	1	40557	40557.3	10.88	0.006	1	8276	8276	11.89	0.004
Interaccions of 3 terms	1	51	51	0.00	0.963	1	30141	30140.8	8.08	0.014	1	34896	34896	50.16	0.000
X ₁ *X ₂ *X ₃	1	51	51	0.00	0.963	1	30141	30140.8	8.08	0.014	1	34896	34896	50.16	0.000
Curvature	1	1717308	1717308	73.76	0.000	1	15867	15867.1	4.26	0.060	1	135145	135145	194.24	0.000
Error	13	302658	23281			13	48467	3728.2			13	9045	696		
Total	21	2489605				21	216369				21	433821			

X₁: Solvent relation, X₂: Amplitude, X₃: Sonication time.

Table S3. Analysis of variance (ANOVA) for antioxidant activity ABTS.

ABTS ANTIOXIDANT ACTIVITY															
Source	PEEL					ENDOCARP					KERNEL				
	DF	SS Adj.	MS Adj.	F Value	P Value	DF	SS Adj.	MS Adj.	F Value	P Value	DF	SS Adj.	MS Adj.	F Value	P Value
Model	8	3458.66	432.33	3.46	0.023	8	62.937	7.8672	18.32	0.000	8	1515.65	189.456	105.17	0.000
Linear	3	3111.60	1037.2	8.31	0.002	3	5.5905	1.8635	4.34	0.025	3	587.03	195.677	108.62	0.000
X ₁	1	2224.07	2224.0	17.82	0.001	1	5.4406	5.4406	12.67	0.003	1	38.35	38.347	21.29	0.000
X ₂	1	280.90	280.90	2.25	0.157	1	0.0014	0.0014	0.00	0.956	1	108.84	108.837	60.42	0.000
X ₃	1	606.64	606.64	4.86	0.046	1	0.1486	0.1486	0.35	0.566	1	439.85	439.846	244.16	0.000
Interactions of 2 terms	3	187.01	62.34	0.50	0.689	3	4.6174	1.5391	3.59	0.044	3	874.55	291.515	161.82	0.000
X ₁ *X ₂	1	147.50	147.50	1.18	0.297	1	4.5412	4.5412	10.58	0.006	1	633.91	633.907	351.88	0.000
X ₁ *X ₃	1	2.61	2.61	0.02	0.887	1	0.0274	0.0274	0.06	0.805	1	137.77	137.769	76.48	0.000
X ₂ *X ₃	1	36.91	36.91	0.30	0.596	1	0.0488	0.0488	0.11	0.741	1	102.87	102.870	57.10	0.000
Interactions of 3 terms	1	2.02	2.02	0.02	0.901	1	1.5600	1.5600	3.63	0.079	1	5.97	5.966	3.31	0.092
X ₁ *X ₂ *X ₃	1	2.02	2.02	0.02	0.901	1	1.5600	1.5600	3.63	0.079	1	5.97	5.966	3.31	0.092
Curvature	1	158.03	158.03	1.27	0.281	1	51.169	51.169	119.19	0.000	1	48.10	48.104	26.70	0.000
Error	13	1622.33	124.79			13	5.5811	0.4293			13	23.42	1.801		
Total	21	5080.99				21	68.518				21	1539.06			

X₁: Solvent relation, X₂: Amplitude, X₃: Sonication time.

Table S4. Analysis of variance (ANOVA) for antioxidant activity DPPH.

DPPH ANTIOXIDANT ACTIVITY															
Source	PEEL					ENDOCARP					KERNEL				
	DF	SS Adj.	MS Adj.	F Value	P Value	DF	SS Adj.	MS Adj.	F Value	P Value	DF	SS Adj.	MS Adj.	F Value	P Value
Model	8	11840.6	1480.08	16.95	0.000	8	2.34267	0.29283	0.65	0.723	8	5085.90	635.74	358.98	0.000
Linear	3	4182.5	1394.17	15.97	0.000	3	1.57996	0.52665	1.17	0.358	3	442.87	147.62	83.36	0.000
X ₁	1	3806.6	3806.58	43.60	0.000	1	0.24059	0.24059	0.54	0.477	1	92.40	92.40	52.18	0.000
X ₂	1	3.7	3.73	0.04	0.839	1	0.15563	0.15563	0.35	0.566	1	34.08	34.08	19.24	0.001
X ₃	1	372.2	372.20	4.26	0.059	1	1.18374	1.18374	2.64	0.128	1	316.40	316.40	178.66	0.000
Interaccions of 2 terms	3	62.5	20.84	0.24	0.868	3	0.38288	0.12763	0.28	0.836	3	294.91	98.30	55.51	0.000
X ₁ *X ₂	1	29.7	29.68	0.34	0.570	1	0.37946	0.37946	0.85	0.375	1	151.60	151.60	85.60	0.000
X ₁ *X ₃	1	11.5	11.48	0.13	0.723	1	0.00308	0.00308	0.01	0.935	1	94.14	94.14	53.16	0.000
X ₂ *X ₃	1	21.4	21.37	0.24	0.629	1	0.00034	0.00034	0.00	0.978	1	49.18	49.18	27.77	0.000
Interaccions of 3 terms	1	40.7	40.67	0.47	0.507	1	0.36120	0.36120	0.80	0.386	1	14.23	14.23	8.04	0.014
X ₁ *X ₂ *X ₃	1	40.7	40.67	0.47	0.507	1	0.36120	0.36120	0.80	0.386	1	14.23	14.23	8.04	0.014
Curvature	1	7554.9	7554.94	86.54	0.000	1	0.01863	0.01863	0.04	0.842	1	4333.89	4333.89	2447.22	0.000
Error	13	1134.9	87.30			13	5.83453	0.44881			13	23.02	1.77		
Total	21	12975.5				21	8.17720				21	5108.92			

X₁: Solvent relation, X₂: Amplitude, X₃: Sonication time.

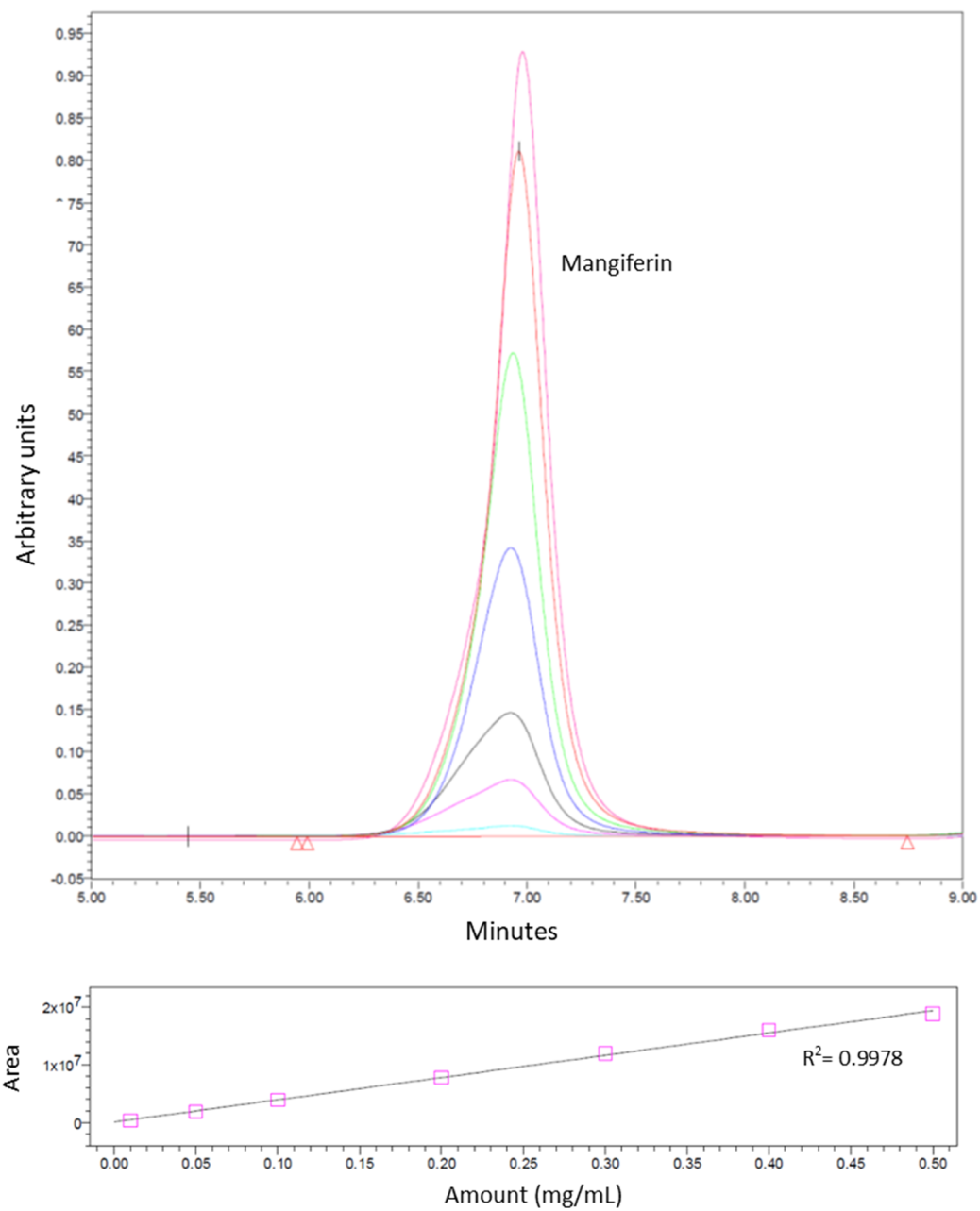


Figure S1. Chromatograms and calibration curve of mangiferin.