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Table S1. Experimental design for determining the effect of thermoultrasound treatment on microbiological and physicochemical parameters of soursop nectar

Treatment	Pattern	Amplitude/%	t/min	Response variable									
				AM/ (log CFU/mL)	EB/(log CFU/ mL)	pH	TSS/°Brix	Titrateable acidity/%	BI	Viscosity/ (mPa·s)	Physical stability/%	Cloud index	PME/(U/mL)
Control				5.2±0.3	5.0±0.4	3.91±0.03	11±0.00	0.25±0.04	0.05±0.00	220.7±7.0	63.2±1.1	0.15±0.00	0.34±0.02
1	+-	90	5.00	3.78±0.02	3.74±0.05	3.85±0.03	11±0.00	0.27±0.00	0.06±0.00	341.3±9.0	60.2±1.8	0.22±0.01	0.29±0.02
2	a0	72	9.15	3.6±0.2	3.60±0.05	3.87±0.01	11±0.00	0.22±0.04	0.08±0.00	309.3±4.2	60.0±0.5	0.21±0.00	0.27±0.02
3	0a	82	3.15	3.82±0.02	3.88±0.01	3.79±0.02	11±0.00	0.27±0.00	0.06±0.00	350.7±8.1	62.7±1.1	0.21±0.00	0.33±0.00
4 [‡]	00	82	9.15	1.8±0.2	0.00±0.00	4.06±0.01	11±0.00	0.22±0.04	0.06±0.00	408±24	59.7±1.1	0.25±0.00	0.28±0.02
5 [‡]	00	82	9.15	3.57±0.02	3.38±0.05	3.78±0.01	11±0.00	0.13±0.00	0.05±0.00	329±31	61.8±0.2	0.23±0.01	0.29±0.02
6	0A	82	15.00	1.8±0.2	0.00±0.00	4.04±0.02	11±0.00	0.20±0.00	0.06±0.00	381±10.26	59.3±0.4	0.22±0.00	0.22±0.01
7	++	90	13.30	2.8±0.2	2.65±0.05	3.71±0.01	11±0.00	0.16±0.04	0.06±0.00	364±11	56.7±0.9	0.23±0.03	0.29±0.02
8	--	75	5.00	2.2±0.2	1.8±0.6	3.75±0.01	11±0.00	0.20±0.00	0.02±0.00	433±19	53.7±1.4	0.19±0.00	0.28±0.02
9 [‡]	00	82	9.15	2.6±0.1	1.70±0.00	3.72±0.01	11±0.00	0.16±0.04	0.11±0.01	398±35	56.4±0.5	0.20±0.02	0.22±0.02
10	A0	93	9.15	2.4±0.1	0.00±0.00	4.37±0.01	11±0.00	0.18±0.04	0.07±0.01	325±18	60.4±1.1	0.22±0.00	0.23±0.01
11 [‡]	00	82	9.15	1.8±0.2	0.00±0.00	4.36±0.01	11±0.00	0.18±0.04	0.03±0.00	342.7±9.9	55.5±2.6	0.25±0.01	0.24±0.01
12 [‡]	00	82	9.15	1.9±0.3	0.00±0.00	4.31±0.01	11±0.00	0.16±0.04	0.04±0.00	365.3±9.9	56.5±0.5	0.23±0.01	0.27±0.02
13	-+	75	13.30	1.70±0.00	0.00±0.00	4.27±0.01	11±0.00	0.18±0.04	0.03±0.00	381±33	44.0±6.4	0.16±0.01	0.25±0.01

Results are presented as mean value±standard deviation (N=3). [‡]Central points. AM=aerobic mesophilic bacteria, EB=*Enterobacteriaceae*, TSS=total soluble solids, BI=browning index, PME=pectin methylesterase activity

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Table S2. Experimental design of thermosonicated soursop nectar on colour, total phenolic content (TPC) and antioxidant activity

Treatment	Amplitude/%	t/min	Response variable								
			<i>L</i> *	<i>a</i> *	<i>b</i> *	<i>C</i> *	<i>h</i> °	TPC as γ (GAE)/ (mg/100 mL)	ABTS as <i>c</i> (TE)/ (μ mol/100 mL)	DPPH as <i>c</i> (TE)/ (μ mol/100 mL)	FRAP as <i>c</i> (Fe(III))/ (μ mol/100 mL)
Control			40.4±0.5	-0.57±0.01	3.83±0.04	3.87±0.04	-81.59±0.07	25.9±0.1	33.4±0.3	90.0±0.8	1.83±0.03
1	90	5.00	46.7±0.3	-0.78±0.04	2.63±0.06	2.75±0.06	-73.4±0.5	30.1±1.1	36.4±1.8	42.9±2.2	2.19±0.03
2	72	9.15	47.1±0.1	-0.53±0.03	2.79±0.07	2.84±0.06	-79.2±0.7	31.2±3.6	29.0±0.2	103.0±5.0	2.54±0.03
3	82	3.15	50.7±0.2	-0.38±0.02	2.86±0.04	2.89±0.03	-82.4±0.5	30.5±0.5	30.5±2.3	31.4±1.2	2.13±0.00
4 [‡]	82	9.15	44.5±0.1	-0.99±0.00	3.32±0.33	3.5±0.3	-73.3±1.6	39.3±1.7	32.3±0.4	121.2±6.1	3.10±0.02
5 [‡]	82	9.15	45.3±0.2	-0.75±0.02	3.4±0.3	3.4±0.3	-77.4±1.2	39.5±1.4	30.4±0.1	127.0±6.1	3.12±0.06
6	82	15.00	50.21±0.08	-1.03±0.01	3.2±0.2	3.3±0.1	-71.9±0.8	43.4±1.9	38.1±0.7	43.8±1.9	3.43±0.07
7	90	13.30	50.6±0.2	-0.33±0.02	4.0±0.2	4.0±0.2	-85.3±0.3	38.7±1.7	38.8±0.8	94.4±9.3	3.59±0.06
8	75	5.00	49.84±0.07	-0.22±0.01	2.97±0.03	2.98±0.03	-85.8±0.2	32.3±2.2	24.6±2.0	113.6±2.4	2.74±0.02
9 [‡]	82	9.15	45.7±0.6	-0.07±0.01	3.8±0.1	3.8±0.1	-88.9±0.2	38.0±0.3	31.9±0.4	141.5±0.8	3.30±0.05
10	93	9.15	47.6±0.2	-0.66±0.02	3.60±0.04	3.66±0.04	-79.6±0.2	30.7±1.9	41.7±2.3	103.4±5.0	2.6±0.1
11 [‡]	82	9.15	46.5±0.1	-0.54±0.01	3.63±0.03	3.67±0.03	-81.5±0.1	36.0±0.8	28.8±1.2	124.7±6.2	2.8±0.1
12 [‡]	82	9.15	45.5±1.4	-0.73±0.02	3.7±0.2	3.8±0.2	-78.8±0.3	39.2±1.4	32.9±0.4	106.7±8.7	3.05±0.04
13	75	13.30	48.18±0.20	-0.83±0.04	2.4±0.1	2.5±0.1	-70.8±1.2	37.8±4.2	34.9±1.8	79.7±1.7	2.92±0.04

Results are presented as mean value±standard deviation (*N*=3). [‡]Central points. *C**=chroma, *L**=lightness, *a**=red/green, *b**=blue/yellow, *h*°=hue, GAE=gallic acid equivalents, TE= Trolox equivalents