

Tables

Table 1. The surface tension of pure Balangu seed gum and various Oil/Water emulsions.

Treatment	Sample	Surface tension (mN/m)
Pure gum	0.25% Balangu gum	68.24±0.05 ^a
	0.5% Balangu gum	60.77±0.04 ^b
PVA free	0.25% BG+0.06% T-20+EO	39.36±0.6 ^a
	0.25% BG+0.08% T-20+EO	38.21±0.07 ^b
	0.25% BG+0.1% T-20+EO	38.18±0.3 ^b
	0.5% BG+0.06% T-20+EO	35.02±0.02 ^c
	0.5% BG+0.08% T-20+EO	33.45±0.05 ^d
	0.5% BG+0.1% T-20+EO	31.70±0.04 ^e
Constant gum	0.25% BG+0.5% PVA+0.08% T-20+EO	39.89±0.04 ^a
	0.25% BG+1% PVA+0.08% T-20+EO	37.05±0.06 ^c
	0.25% BG+2% PVA+0.08% T-20+EO	35.19±0.02 ^e
	0.5% BG+0.5% PVA+0.08% T-20+EO	38.77±0.05 ^b
	0.5% BG+1% PVA+0.08% T-20+EO	36.53±0.03 ^d
	0.5% BG+2% PVA+0.08% T-20+EO	33.88±0.02 ^f

Different letters within the same column indicate significant differences ($p < 0.05$).

Table 2. Rheological parameters of pure Balangu seed gum and various Oil/Water emulsions in the power law model.

#	Sample	K (Pa.s ⁿ)	n	R ²	R ² -Adj
0.25	0.25% Balangu gum	1.340±0.002 ^b	0.413±0.001 ^b	0.993	0.992
0.5	0.5% Balangu gum	3.920±0.005 ^a	0.576±0.003 ^a	0.959	0.957
1	0.25% BG+0.06%T-20+EO	1.164±0.004 ^f	0.410±0.002 ^f	0.993	0.992
2	0.25% BG+0.08%T-20+EO	1.392±0.003 ^e	0.456±0.003 ^e	0.9927	0.9924
3	0.25% BG+0.1%T-20+EO	1.568±0.004 ^d	0.488±0.004 ^c	0.994	0.993
4	0.5% BG+0.06%T-20+EO	3.221±0.005 ^c	0.473±0.005 ^d	0.958	0.956
5	0.5% BG+0.08%T-20+EO	4.165±0.004 ^b	0.525±0.002 ^b	0.997	0.996
6	0.5% BG+0.1%T-20+EO	4.257±0.006 ^a	0.544±0.002 ^a	0.993	0.992
7	0.25%BG+0.5%PVA+0.08%T-20+EO	1.460±0.005 ^f	0.567±0.002 ^c	0.996	0.995
8	0.25%BG+1%PVA+0.08%T-20+EO	1.624±0.002 ^e	0.584±0.002 ^b	0.997	0.996
9	0.25%BG+2%PVA+0.08%T-20+EO	1.745±0.001 ^d	0.502±0.003 ^d	0.997	0.996
10	0.5%BG+0.5%PVA+0.08%T-20+EO	4.587±0.007 ^c	0.608±0.001 ^a	0.984	0.983
11	0.5%BG+1%PVA+0.08%T-20+EO	5.018±0.005 ^b	0.560±0.004 ^c	0.985	0.984
12	0.5%BG+2%PVA+0.08%T-20+EO	5.480±0.003 ^a	0.589±0.003 ^b	0.977	0.976

Different letters within the same column indicate significant differences ($p < 0.05$).

Table 3. Encapsulation efficiency and loading capacity of different electrosprayed Balangu seed gum/PVA nanocapsules

Sample	Loading Capacity (LC %)	Encapsulation Efficiency (E %)
0.25% Balangu+0.5% PVA	77.56±0.53 ^b	81.54±0.51 ^b
0.25% Balangu+1% PVA	84.68 ±0.47 ^a	87.82±0.68 ^a

Different letters within the same column indicate significant differences ($p<0.05$).

Table 4. Kinetics constant of the *Mentha longifolia* L. essential oil release profile in different food models

Food Model	First order		Kopcha model			Korsmeyer–Peppas			Peppas-Sahlin			
	k	R ²	A	B	R ²	k	n	R ²	K ₁	K ₂	m	R ²
distillated water	0.201	0.90	15.6	-	0.90	53.1	0.099	0.97	36.74	-	0.23	0.995
	8	23	02	0.792 5	12	3	39	59	82	2.627 0	85	8
10% ethanol	0.091	0.85	9.28	-	0.87	46.7	0.110	0.98	33.68	-	0.23	0.993
	3	48	1	0.345 2	56	2	6	24	12	1.723 0	9	9
50% ethanol	0.044	0.81	7.95	-	0.88	43.6	0.110	0.97	30.32	-	0.23	0.996
	1	23	0	0.311 6	36	8	4	01	41	0.923 4	07	2
3% acetic acid	0.020	0.61	3.78	-	0.79	40.1	0.116	0.95	11.28	-	0.24	0.994
	3	73	7	0.090 3	65	0	3	92	55	0.187 2	34	5