Supplementary Materials

Spray-Drying Performance and Thermal Stability of L-Ascorbic Acid Microencapsulated with Sodium Alginate and Gum Arabic

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Table 1. ANOVA analysis for the response variables: Encapsulation efficiency (%), mean particle size (μm) and encapsulation yield (%) involved in the AA encapsulation using Alginic acid and arabic gum as wall polymers.

	Factor	DOF (f)	Sum of squares	F-ratio (F)	p-Value
AA:ALG-based	**i) Encapsulation Efficiency (%)**				
	AA:ALG ratio	2	127.46	10.94	0.002
	Dispersed solids (g/L)	2	29.63	2.54	0.117
	Error	13	75.72		
	Total	17	232.81		
	ii) Mean particle size (μm)				
	AA:ALG ratio	2	19.1	1.83	0.199
	Dispersed solids (g/L)	2	34.3	3.29	0.070
	Error	13	67.71		
	Total	17	121.11		
	iii) Encapsulation Yield (%)				
	AA:ALG Ratio	2	69.6	3.99	0.044
	Dispersed solids (g/L)	2	3508.6	201.52	1.64E-10
	Error	13	113.17		
	Total	17	3691.37		
AA:GA-based	**i) Encapsulation Efficiency (%)**				
	AA:GA ratio	2	30.77	0.73	0.500
	Dispersed solids (g/L)	2	280.32	6.56	0.010
	Error	13	273.69		
	Total	17	584.78		
	ii) Mean particle size (μm)				
	AA:GA ratio	2	84.14	34.27	6.55E-06
	Dispersed solids (g/L)	2	12.12	4.94	0.025
	Error	13	15.96		
	Total	17	112.22		

iii) Encapsulation Yield (%)				
AA:GA ratio	2	894.8	24.28	4.10E-05
Dispersed solids (g/L)	2	14.9	0.40	0.68
Error	13	239.55		
Total	17	1149.22		

Table 2. Water Activity for the AA microparticles obtained using ALG and GA as wall polymers.

	AA:ALG	Water Activity (a_w)	T (°C)
AA:ALG-based	AA:ALG-5	0.27 ± 0.01	24.8
	AA:ALG-12.5	0.38 ± 0.06	25.0
	AA:ALG-20	0.34 ± 0.01	24.9
	AA:2ALG-5	0.35 ± 0.01	24.9
	AA:2ALG-12.5	0.35 ± 0.02	24.8
	AA:2ALG-20	0.36 ± 0.02	24.8
	AA:4ALG-5	0.35 ± 0.01	25.1
	AA:4ALG-12.5	0.32 ± 0.01	25.1
	AA:4ALG-20	0.37 ± 0.01	25.7
	AA:ALG-5	0.30 ± 0.01	25.9
AA:GA-based	AA:GA-5	0.39 ± 0.03	25.0
	AA:GA-12.5	0.26 ± 0.01	24.9
	AA:GA-20	0.23 ± 0.02	24.6
	AA:2GA-5	0.23 ± 0.01	24.6
	AA:2GA-12.5	0.32 ± 0.01	24.9
	AA:2GA-20	0.20 ± 0.01	24.6
	AA:4GA-5	0.21 ± 0.02	24.7
	AA:4GA-12.5	0.23 ± 0.01	24.9
	AA:4GA-20	0.23 ± 0.01	24.9