

Table S1. Raw values of all the studied parameters on skimmed milk powders obtained by Pulse Spray Drying (PSD) and Spray Drying (SD). BI: browning index, Sr: solubility index, Hr: Hausner ratio; [α -La]: α -Lactalbumin, [β -Lg]: β -Lactoglobulin. *(n=2); +(n=4)

T (°C)	DT	[α -La] (g/Kg)	[β -Lg] (g/Kg)	Bulk density (g/mL)	Compressibility (Carr Index) (%)	H _r	BI	D ₁₀ (μ m)	D ₅₀ (μ m)	D ₉₀ (μ m)	Span	D _[3.2] (μ m)	D _[4.3] (μ m)	L*	a*	b*	Moisture (%)	Flowability (g/min)	Solubility Index (%)	Protein (%)
70	PSD	9.65*	40.04	0.51	35.71	1.56	15.49	13.90	48.00	147.00	2.77	30.60	69.30	58.67	-1.99	10.00	3.08	18.59	98.60	33.16
		12.23	54.49	0.53	34.74	1.53	16.53	12.05	39.75	104.15	2.26	26.05	50.73	58.50	-2.30	10.70	3.48	23.87	98.61	33.49
		10.94 ± 1.83*	47.27 ± 10.22	0.52 ± 0.01	35.23 ± 0.69	1.54 ± 0.02	16.01 ± 0.57	12.98 ± 1.31	43.88 ± 5.83	125.58 ± 30.30	2.52 ± 0.36	28.33 ± 3.22	60.01 ± 13.14	58.58 ± 0.08	-2.15 ± 0.16	10.35 ± 0.35	3.28 ± 0.28	21.23 ± 3.74	98.61 ± 0.01	33.32 ± 0.24
	SD	10.38	49.12	0.47	36.54	1.58	12.35	19.85	55.75	272.50	4.51	41.95	103.50	61.62	-2.07	8.79	4.02	11.02	99.53	34.35
		13.38	61.00	0.56	32.22	1.48	13.61	19.10	55.80	272.00	4.55	41.90	104.00	60.52	-2.57	9.66	2.28	8.80	99.72	34.08
		11.88 ± 2.12	55.06 ± 8.40	0.52 ± 0.06	34.38 ± 3.05	1.53 ± 0.07	12.98 ± 0.69	19.48 ± 0.53	55.78 ± 0.04	272.25 ± 0.35	4.53 ± 0.03	41.93 ± 0.04	103.75 ± 0.35	61.07 ± 0.55	-2.32 ± 0.25	9.23 ± 0.44	3.15 ± 1.23	9.91 ± 1.57	99.63 ± 0.14	34.22 ± 0.19
80	PSD	10.54	41.87	0.50	32.00	1.47	14.47	15.50	49.00	108.00	1.89	31.90	56.90	59.36	-2.07	9.63	2.77	35.95	98.51	35.37
		9.98	45.10	0.50	33.00	1.99	14.48	15.45	49.25	111.50	1.95	32.05	58.00	61.31	-2.09	9.92	4.11	27.59	98.13	35.46
		10.26 ± 0.39	43.48 ± 2.29	0.50 ± 0.01	32.50 ± 0.71	1.48 ± 0.02	14.48 ± 0.01	15.48 ± 0.04	49.13 ± 0.18	109.75 ± 2.48	1.92 ± 0.04	31.98 ± 0.12	57.45 ± 0.78	60.34 ± 0.98	-2.08 ± 0.01	9.78 ± 0.14	3.44 ± 0.95	31.77 ± 5.91	98.32 ± 0.27	35.42 ± 0.06
	SD	11.91	44.24	0.55	27.47	1.38	11.32	9.13	32.80	86.70	2.36	19.60	51.10	58.33	-2.02	7.82	2.15	17.24	99.45	34.64
		10.36	49.34	0.51	34.69	1.53	11.19	8.93	32.50	86.10	2.37	19.30	50.60	63.88	-2.30	8.55	4.66	4.82	99.68	34.34
		11.14 ± 1.09	46.79 ± 3.61	0.53 ± 0.03	31.08 ± 5.11	1.46 ± 0.11	11.25 ± 0.07	9.03 ± 0.14	32.65 ± 0.21	86.40 ± 0.42	2.37 ± 0.01	19.45 ± 0.21	50.85 ± 0.35	61.11 ± 2.78	-2.16 ± 0.14	8.19 ± 0.36	3.40 ± 1.77	11.03 ± 8.78	99.57 ± 0.16	34.49 ± 0.21
90	PSD	11.27	39.32	0.43	36.21	1.57	15.82	14.60	43.70	91.40	1.90	29.20	49.20	58.65	-2.00	10.17	2.34	16.87	98.38	34.06
		9.33	43.13	0.47	33.96	1.51	14.70	14.65	43.65	91.40	1.76	29.20	49.15	60.16	-2.06	9.86	1.59	19.17	98.16	34.10
		10.30 ± 1.38	41.23 ± 2.70	0.45 ± 0.03	35.08 ± 1.59	1.54 ± 0.04	15.26 ± 0.61	14.63 ± 0.04	43.68 ± 0.04	91.40 ± 0.01	1.83 ± 0.10	29.20 ± 0.01	49.18 ± 0.04	59.41 ± 075	-2.03 ± 0.03	10.01 ± 0.16	1.96 ± 0.53	18.02 ± 1.62	98.27 ± 0.16	34.08 ± 0.03
	SD	12.11	41.82	0.51	32.65	1.48	15.65	9.89	38.00	109.00	2.61	21.50	59.50	59.19	-2.55	10.52	3.12	10.70	99.36	35.86
		9.98	46.49	0.47	39.25	1.65	11.79	9.47	37.40	102.00	2.47	20.90	54.50	58.64	-2.00	8.08	2.32	13.65	99.19	35.58
		11.04 ± 1.50	44.15 ± 3.30	0.49 ± 0.03	35.95 ± 4.67	1.57 ± 0.11	13.71 ± 2.13	9.68 ± 0.30	37.70 ± 0.42	105.50 ± 4.95	2.54 ± 0.09	21.20 ± 0.42	57.00 ± 3.54	58.92 ± 0.28	-2.27 ± 0.27	9.30 ± 1.22	2.72 ± 0.57	12.18 ± 2.09	99.27 ± 0.13	35.72 ± 0.19
100	PSD	11.64	51.51	0.40	37.90	1.61	14.51	12.80	37.30	75.80	1.69	24.70	41.40	59.79	-1.81	9.54	1.00	9.39	98.59	36.20
		8.30	42.83	0.48	28.85	1.41	14.73	12.60	37.20	75.70	1.70	24.20	41.30	62.71	-2.06	10.23	0.63	5.01	98.20	35.79
		9.97 ± 2.36	47.11 ± 6.14	0.44 ± 0.05	33.37 ± 6.40	1.51 ± 0.15	14.62 ± 0.12	12.70 ± 0.14	37.25 ± 0.07	75.75 ± 0.07	1.69 ± 0.01	24.45 ± 0.35	41.35 ± 0.07	61.25 ± 1.46	-1.94 ± 0.13	9.89 ± 0.35	0.82 ± 0.26	7.20 ± 3.10	98.39 ± 0.28	35.99 ± 0.28
	SD	10.29	54.79	0.44	30.09	1.43	14.30	26.00	57.90	145.00	2.06	43.50	79.00	59.59	-2.38	9.78	2.57	16.11	99.66	35.86
		10.04	51.52	0.40	36.51	1.58	12.36	25.95	57.90	145.00	2.06	43.55	79.05	61.95	-2.22	8.94	2.53	3.08	99.50	35.06
		10.16 ± 0.18	53.15 ± 2.32	0.42 ± 0.03	33.30 ± 4.54	1.50 ± 0.10	13.33 ± 1.06	25.98 ± 0.04	57.90 ± 0.01	145.00 ± 0.01	2.06 ± 0.01	43.53 ± 0.04	79.03 ± 0.04	60.77 ± 1.18	-2.30 ± 0.08	9.36 ± 0.42	2.55 ± 0.03	9.60 ± 9.21	99.58 ± 0.11	35.46 ± 0.56

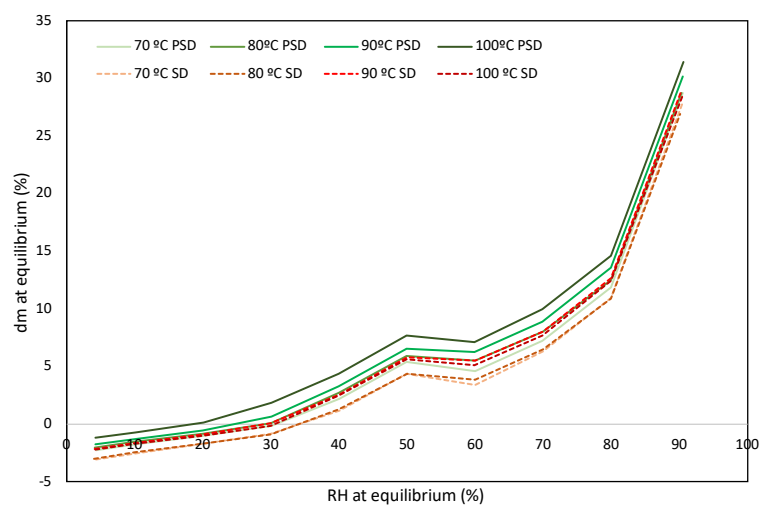


Figure S1. Mass increment (%) versus the relative humidity of SMP obtained by Spray Drying (SD) and pulse Spray Drying (PSD) at different outlet temperatures (70, 80, 90 and 100 °C).