

Table S1.

Experimental data for osmotic dehydration mass transfer responses

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	DMC (%)	WL (g/g _{s.})	SG (g/g _{s.})	a _w
1	0.5	25	60	11.40± 0.32 ¹	0.1704± 0.0043 ¹	0.0024± 5.19 E-05 ^{1,2} 0.0034±	0.935± 0.001 ¹³
2	1	25	60	13.20± 0.30 ¹⁻³	0.2169± 0.0020 ^{2,3}	8.75 E-05 ¹⁻ 3	0.928± 0.007 ^{12,13}
3	1.5	25	60	15.32± 0.35 ³⁻⁶	0.3075± 0.0047 ^{5,6}	0.0100± 7.49 E-05 ⁶⁻ 8	0.922± 0.004 ¹⁰⁻¹³
4	2	25	60	17.87± 0.42 ⁸⁻¹²	0.3864± 0.0074 ⁸⁻¹⁰	0.0021± 3.42 E-05 ¹	0.915± 0.006 ⁹⁻¹³
5	3	25	60	18.69± 0.22 ¹⁰⁻¹⁴	0.4090± 0.0060 ⁹⁻¹¹	0.0349± 0.0014 ¹⁶	0.908± 0.008 ⁷⁻¹³
6	5	25	60	31.86± 0.60 ^{21,22}	0.5140± 0.0084 ⁶⁻¹⁷	0.0543± 0.0004 ²²	0.890± 0.007 ⁵⁻¹⁰
7	0.5	35	60	12.81± 0.17 ^{1,2}	0.2177± 0.0067 ^{2,3}	0.0026± 8.92 E-05 ^{1,2}	0.929± 0.010 ^{12,13}
8	1	35	60	15.41± 0.17 ⁴⁻⁷	0.2755± 0.0122 ^{4,5}	0.0080± 0.0002 ⁴⁻⁷	0.923± 0.005 ¹⁰⁻¹³
9	1.5	35	60	17.58± 0.35 ⁷⁻¹¹	0.3944± 0.0054 ^{9,10}	0.0189± 0.0002 ¹¹	0.920± 0.007 ⁹⁻¹³
10	2	35	60	19.01± 0.22 ¹¹⁻¹⁴	0.4099± 0.0094 ⁹⁻¹¹	0.0299± 0.0002 ^{13,14}	0.910± 0.015 ⁷⁻¹³
11	3	35	60	20.64± 0.94 ¹⁴⁻ 16	0.4507± 0.0113 ¹²⁻¹⁴	0.0416± 0.0009 ^{19,20}	0.901± 0.016 ⁶⁻¹³
12	5	35	60	38.51± 0.90 ²⁴	0.5864± 0.0114 ^{19,20}	0.0609± 0.0005 ²³	0.880± 0.006 ³⁻⁸
13	0.5	45	60	16.34± 0.37 ⁶⁻⁹	0.3230± 0.0081 ^{6,7}	0.0076± 7.15 E-05 ⁴⁻ 6	0.925± 0.009 ¹¹⁻¹³
14	1	45	60	21.85± 0.32 ¹⁵⁻ 17	0.4694± 0.0049 ¹³⁻¹⁵	0.0094± 0.0003 ⁶⁻⁸	0.919± 0.008 ⁹⁻¹³
15	1.5	45	60	26.71± 0.62 ^{19,20}	0.5367± 0.0217 ^{17,18}	0.0204± 0.0004 ¹¹	0.910± 0.003 ⁷⁻¹³
16	2	45	60	29.95± 0.45 ²¹	0.5561± 0.0063 ^{18,19}	0.0316± 0.0009 ^{14,15}	0.880± 0.011 ³⁻⁸
17	3	45	60	34.61± 0.66 ²³	0.5971± 0.0166 ^{20,21}	0.0546± 0.0014 ²²	0.865± 0.009 ²⁻⁵
18	5	45	60	46.26± 1.07 ²⁶	0.7103± 0.0178 ²⁴	0.0713± 0.0017 ²⁴	0.850± 0.014 ^{2,3}
19	0.5	25	70	11.83± 0.29 ^{1,2}	0.1706± 0.0013 ¹	0.0026± 3.92 E-05 ^{1,2}	0.934± 0.006 ^{12,13}
20	1	25	70	14.01± 0.17 ²⁻⁵	0.2507± 0.0059 ^{3,4}	0.0121± 0.00016 ⁸⁻¹⁰	0.926± 0.009 ¹¹⁻¹³

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	DMC (%)	WL (g/g _{i.s.})	SG (g/g _{i.s.})	a _w
21	1.5	25	70	15.86± 0.33 ⁵⁻⁸	0.3499± 0.0109 ^{7,8}	0.0193± 0.0004 ¹¹	0.920± 0.002 ⁹⁻¹³
22	2	25	70	18.06± 0.28 ⁹⁻¹³	0.3755± 0.0126 ^{8,9}	0.0276± 0.0005 ^{12,13}	0.910± 0.011 ⁷⁻¹³
23	3	25	70	19.84± 0.26 ¹²⁻¹⁵	0.4156± 0.0109 ¹⁰⁻¹²	0.0354± 0.0008 ^{16,17}	0.900± 0.012 ⁶⁻¹²
24	5	25	70	33.46± 1.60 ^{22,23}	0.5768± 0.0134 ^{19,20}	0.0610± 0.0015 ²³	0.876± 0.006 ³⁻⁷
25	0.5	35	70	12.93± 0.29 ^{1,2}	0.1877± 0.0053 ^{1,2}	0.0062± 0.0001 ³⁻⁵	0.929± 0.019 ^{12,13}
26	1	35	70	15.48± 0.06 ⁴⁻⁷	0.3159± 0.0023 ^{6,7}	0.0111± 0.0002 ⁷⁻⁹	0.920± 0.013 ⁹⁻¹³
27	1.5	35	70	18.91± 0.30 ¹⁰⁻¹⁴	0.3879± 0.0090 ^{9,10}	0.0199± 7.73 E-05 ¹¹	0.915± 0.013 ⁹⁻¹³
28	2	35	70	20.02± 0.51 ¹²⁻¹⁵	0.4106± 0.0101 ⁹⁻¹¹	0.0306± 0.0006 ¹³⁻¹⁵	0.904± 0.017 ⁶⁻¹³
29	3	35	70	22.47± 0.55 ^{16,17}	0.4741± 0.0134 ¹³⁻¹⁵	0.0446± 0.0008 ²⁰	0.886± 0.007 ⁴⁻⁹
30	5	35	70	41.97± 0.22 ²⁵	0.6264± 0.0209 ²¹⁻²³	0.0800± 0.0015 ²⁶	0.863± 0.018 ²⁻⁵
31	0.5	45	70	16.72± 0.66 ⁶⁻¹⁰	0.3315± 0.0038 ^{6,7}	0.0054± 9.28 E-05 ²⁻⁵	0.925± 0.015 ¹¹⁻¹³
32	1	45	70	25.00± 0.71 ^{18,19}	0.4847± 0.0141 ¹⁴⁻¹⁶	0.0111± 0.0002 ⁷⁻⁹	0.916± 0.005 ⁹⁻¹³
33	1.5	45	70	27.60± 0.68 ²⁰	0.5755± 0.0093 ^{19,20}	0.0295± 0.0011 ^{13,14}	0.905± 0.012 ⁶⁻¹³
34	2	45	70	31.48± 1.09 ^{21,22}	0.6084± 0.0143 ²⁰⁻²²	0.0495± 0.0013 ²¹	0.871± 0.009 ³⁻⁶
35	3	45	70	37.42± 0.96 ²⁴	0.6413± 0.0106 ^{22,23}	0.0703± 0.0017 ²⁴	0.861± 0.011 ²⁻⁵
36	5	45	70	50.08± 1.13 ²⁷	0.7506± 0.0103 ²⁵	0.0879± 0.0021 ²⁷	0.831± 0.007 ^{1,2}
37	0.5	25	80	12.46± 0.24 ^{1,2}	0.1666± 0.0015 ¹	0.0052± 0.0001 ²⁻⁴	0.929± 0.007 ^{12,13}
38	1	25	80	15.37± 0.01 ³⁻⁶	0.2785± 0.0104 ^{4,5}	0.0133± 0.0002 ^{9,10}	0.918± 0.012 ⁹⁻¹³
39	1.5	25	80	19.68± 0.48 ¹¹⁻¹⁵	0.3872± 0.0172 ^{9,10}	0.0261± 0.0003 ¹²	0.911± 0.009 ⁸⁻¹³
40	2	25	80	20.22± 0.73 ¹³⁻¹⁵	0.4076± 0.0173 ⁹⁻¹¹	0.0334± 0.0008 ^{15,16}	0.892± 0.004 ⁵⁻¹¹
41	3	25	80	21.51±	0.4525±	0.0400±	0.890±

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	DMC (%)	WL (g/g _{i.s.})	SG (g/g _{i.s.})	a _w
				0.98 _{15,16}	0.0047 ^{13,14}	0.0009 ^{18,19}	0.011 ⁵⁻¹⁰
42	5	25	80	37.46± 0.78 ²⁴	0.6609± 0.0151 ²³	0.0747± 0.0005 ²⁵	0.859± 0.005 ²⁻⁵
43	0.5	35	80	13.52± 0.20 ¹⁻⁴	0.2090± 0.0079 ²	0.0085± 0.0002 ⁵⁻⁷	0.923± 0.020 ¹⁰⁻¹³
44	1	35	80	15.66± 0.44 ⁴⁻⁷	0.3042± 0.0049 ^{5,6}	0.0142± 0.0003 ¹⁰	0.916± 0.013 ⁹⁻¹³
45	1.5	35	80	20.11± 0.27 ¹³⁻¹⁵	0.3876± 0.0033 ^{9,10}	0.0295± 0.0008 ^{13,14}	0.909± 0.009 ⁷⁻¹³
46	2	35	80	23.74± 0.21 ^{17,18}	0.4440± 0.0021 ¹¹⁻¹³	0.0500± 0.0021 ²¹	0.889± 0.007 ⁵⁻¹⁰
47	3	35	80	26.07± 0.74 ^{19,20}	0.5136± 0.0126 ^{16,17}	0.0550± 0.00090 ²²	0.871± 0.009 ³⁻⁶
48	5	35	80	44.96± 1.31 ²⁶	0.7077± 0.0128 ²⁴	0.0964± 0.0030 ²⁸	0.849± 0.009 ^{2,3}
49	0.5	45	80	15.30± 0.39 ³⁻⁶	0.3190± 0.0071 ^{6,7}	0.0084± 4.48 E-05 ⁵⁻⁷	0.920± 0.004
50	1	45	80	25.42± 0.37 ¹⁸⁻²⁰	0.5034± 0.0053 ¹⁵⁻¹⁷	0.0257± 0.0006 ¹²	0.905± 0.004 ⁶⁻¹³
51	1.5	45	80	31.57± 0.62 ^{21,22}	0.6014± 0.0157 ^{20,21}	0.0383± 0.0008 ^{17,18}	0.901± 0.004 ⁶⁻¹³
52	2	45	80	34.94± 0.73 ²³	0.6268± 0.0252 ²¹⁻²³	0.0610± 0.0012 ²³	0.865± 0.005 ²⁻⁵
53	3	45	80	42.0± 0.82 ²⁵	0.7037± 0.0205 ²⁴	0.0818± 0.0021 ²⁶	0.852± 0.008 ²⁻⁴
54	5	45	80	58.33± 1.11 ²⁸	0.7953± 0.0158 ²⁶	0.1009± 0.0016 ²⁹	0.811± 0.008 ¹

¹⁻²⁹ Number in the superscript indicate on statistically significant difference between values at the significance level of $p < 0.05$ (Post hoc Tukey HSD test)

Table S2.

Experimental data for microbiological responses

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	TPC (log ₁₀ (CFU/g))	Enterobacteriaceae (log ₁₀ (CFU/g))	TYMC (log ₁₀ (CFU/g))
0	Fresh mushroom sample			5.54± 1.33e-2 ²²	3.36± 1.67e-2 ²	4.64± 1.11e-2 ²³
1	0.5	25	60	5.40± 9.83e-3 ^{21,22}	<1.00± 0.00 ¹	4.54± 1.24e-2 ^{22,23}
2	1	25	60	5.25± 1.43e-2 ¹⁹⁻²¹	<1.00± 0.00 ¹	4.40± 1.74e-2 ¹⁸⁻²¹
3	1.5	25	60	5.10± 2.01e-2 ¹⁷⁻²⁰	<1.00± 0.00 ¹	4.30± 2.17e-2 ¹⁴⁻¹⁹
4	2	25	60	4.98± 2.26e-3 ¹⁵⁻¹⁹	<1.00± 0.00 ¹	4.25± 2.42e-2 ¹³⁻¹⁷
5	3	25	60	4.68± 5.28e-3 ⁷⁻¹³	<1.00± 0.00 ¹	3.90± 5.46e-2 ⁹
6	5	25	60	4.59± 6.51e-3 ⁵⁻¹²	<1.00± 0.00 ¹	3.74± 7.90e-3 ⁶⁻⁸
7	0.5	35	60	5.29± 1.29e-2 ²⁰⁻²²	<1.00± 0.00 ¹	4.48± 1.45e-2 ^{21,22}
8	1	35	60	5.01± 2.39e-2 ¹⁶⁻¹⁹	<1.00± 0.00 ¹	4.38± 1.81e-2 ¹⁷⁻²¹
9	1.5	35	60	4.84± 3.61e-3 ¹²⁻¹⁷	<1.00± 0.00 ¹	4.28± 2.29e-2 ¹⁴⁻¹⁸
10	2	35	60	4.72± 4.78e-3 ⁹⁻¹⁵	<1.00± 0.00 ¹	4.17± 2.90e-2 ¹¹⁻¹⁴
11	3	35	60	4.54± 7.27e-3 ²⁻¹¹	<1.00± 0.00 ¹	3.84 ±6.25e-2 ^{8,9}
12	5	35	60	4.32± 0.00 ¹⁻⁵	<1.00± 0.00 ¹	3.63± 1.01e-2 ⁴⁻⁶
13	0.5	45	60	5.25± 1.43e-2 ¹⁹⁻²¹	<1.00± 0.00 ¹	4.45± 1.55e-2 ²⁰⁻²²
14	1	45	60	5.01± 2.39e-2 ¹⁶⁻¹⁹	<1.00± 0.00 ¹	4.34± 1.98e-2 ¹⁶⁻²⁰
15	1.5	45	60	4.77± 4.21e-3 ¹⁰⁻¹⁶	<1.00± 0.00 ¹	4.23± 2.56e-2 ¹²⁻¹⁶
16	2	45	60	4.70± 4.97e-3 ⁸⁻¹⁴	<1.00± 0.00 ¹	4.11± 3.35e-2 ¹⁰⁻¹²
17	3	45	60	4.44± 9.12e-3 ¹⁻⁸	<1.00± 0.00 ¹	3.77± 7.31e-2 ⁷⁻⁹
18	5	45	60	4.30± 0.00 ¹⁻³	<1.00± 0.00 ¹	3.58± 1.14e-2 ^{4,5}
19	0.5	25	70	5.40± 0.00 ^{21,22}	<1.00± 0.00 ¹	4.48± 1.45e-2 ^{21,22}
20	1	25	70	5.19± 1.62e-2 ¹⁸⁻²¹	<1.00± 0.00 ¹	4.38± 1.81e-2 ¹⁷⁻²¹
21	1.5	25	70	4.99± 2.55e-3 ¹⁶⁻¹⁹	<1.00± 0.00 ¹	4.32± 2.07e-2 ¹⁵⁻²⁰
22	2	25	70	4.85± 0.00 ¹²⁻¹⁷	<1.00± 0.00 ¹	4.20± 2.72e-2 ¹¹⁻¹⁵

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	TPC (log ₁₀ (CFU/g))	Enterobacteriaceae (log ₁₀ (CFU/g))	TYMC (log ₁₀ (CFU/g))
23	3	25	70	4.62± 6.04e-3 ⁶⁻¹²	<1.00± 0.00 ¹	3.84± 6.25e-2 ^{8,9}
24	5	25	70	4.53± 7.49e-3 ²⁻¹¹	<1.00± 0.00 ¹	3.55± 1.87e-2 ⁴
25	0.5	35	70	5.25± 1.43e-2 ¹⁹⁻²¹	<1.00± 0.00 ¹	4.43± 1.61e-2 ¹⁹⁻²²
26	1	35	70	5.00± 0.00 ¹⁶⁻¹⁹	<1.00± 0.00 ¹	4.34± 1.98e-2 ¹⁶⁻²⁰
27	1.5	35	70	4.79± 7.01e-3 ¹¹⁻¹⁶	<1.00± 0.00 ¹	4.25± 2.42e-2 ¹³⁻¹⁷
28	2	35	70	4.68± 5.28e-3 ⁷⁻¹³	<1.00± 0.00 ¹	4.15± 3.11e-2 ¹¹⁻¹⁴
29	3	35	70	4.52± 2.64e-2 ²⁻¹⁰	<1.00± 0.00 ¹	3.78± 3.63e-2 ⁷⁻⁹
30	5	35	70	4.32± 1.22e-2 ¹⁻⁴	<1.00± 0.00 ¹	3.39± 8.82e-2 ³
31	0.5	45	70	5.25± 1.43e-2 ¹⁹⁻²¹	<1.00± 0.00 ¹	4.40± 9.83e-3 ¹⁸⁻²¹
32	1	45	70	5.00± 2.52e-2 ¹⁶⁻¹⁹	<1.00± 0.00 ¹	4.30± 2.17e-2 ¹⁴⁻¹⁹
33	1.5	45	70	4.77± 4.29e-3 ¹⁰⁻¹⁶	<1.00± 0.00 ¹	4.20± 2.72e-2 ¹¹⁻¹⁵
34	2	45	70	4.69± 5.07e-3 ⁸⁻¹⁴	<1.00± 0.00 ¹	4.08± 3.63e-2 ^{10,11}
35	3	45	70	4.42± 9.46e-3 ¹⁻⁷	<1.00± 0.00 ¹	3.70± 4.36e-2 ⁵⁻⁷
36	5	45	70	4.29± 1.29e-2 ^{1,2}	<1.00± 0.00 ¹	3.31± 3.23e-2 ³
37	0.5	25	80	5.37± 1.07e-2 ^{21,22}	<1.00± 0.00 ¹	4.44± 2.41e-2 ²⁰⁻²²
38	1	25	80	5.10± 2.01e-2 ¹⁷⁻²⁰	<1.00± 0.00 ¹	4.36± 1.89e-2 ¹⁶⁻²¹
39	1.5	25	80	4.94± 4.99e-3 ¹³⁻¹⁸	<1.00± 0.00 ¹	4.28± 2.29e-2 ¹⁴⁻¹⁸
40	2	25	80	4.78± 0.00 ¹⁰⁻¹⁶	<1.00± 0.00 ¹	4.15± 3.11e-2 ¹⁰⁻¹³
41	3	25	80	4.58± 1.14e-2 ⁴⁻¹²	<1.00± 0.00 ¹	3.77± 7.31e-2 ⁷⁻⁹
42	5	25	80	4.46± 1.50e-2 ¹⁻⁹	<1.00± 0.00 ¹	3.39± 8.82e-2 ³
43	0.5	35	80	5.24± 1.43e-2 ¹⁹⁻²¹	<1.00± 0.00 ¹	4.40± 1.74e-2 ¹⁸⁻²¹
44	1	35	80	4.96± 2.74e-3 ¹⁴⁻¹⁸	<1.00± 0.00 ¹	4.32± 2.07e-2 ¹⁵⁻²⁰
45	1.5	35	80	5.10± 5.77e-1 ¹⁷⁻²⁰	<1.00± 0.00 ¹	4.23± 2.56e-2 ¹²⁻¹⁶
46	2	35	80	4.64± 9.87e-3 ⁷⁻¹²	<1.00± 0.00 ¹	4.11± 3.35e-2 ¹⁰⁻¹²

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	TPC (log ₁₀ (CFU/g))	Enterobacteriaceae (log ₁₀ (CFU/g))	TYMC (log ₁₀ (CFU/g))
47	3	35	80	4.52± 2.64e-2 ²⁻¹⁰	<1.00± 0.00 ¹	3.69± 8.82e-2 ⁵⁻⁷
48	5	35	80	4.28± 0.00 ^{1,2}	<1.00± 0.00 ¹	3.16± 4.62e-2 ²
49	0.5	45	80	5.09± 2.01e-2 ¹⁷⁻²⁰	<1.00± 0.00 ¹	4.34± 1.98e-2 ¹⁶⁻²⁰
50	1	45	80	4.93± 2.97e-3 ¹³⁻¹⁸	<1.00± 0.00 ¹	4.25± 2.42e-2 ¹³⁻¹⁷
51	1.5	45	80	4.72± 0.00 ⁹⁻¹⁵	<1.00± 0.00 ¹	4.18± 2.90e-2 ¹¹⁻¹⁴
52	2	45	80	4.56± 6.87e-3 ³⁻¹¹	<1.00± 0.00 ¹	4.04± 3.96e-2 ¹⁰
53	3	45	80	4.36± 1.11e-2 ¹⁻⁶	<1.00± 0.00 ¹	3.61± 3.77e-2 ⁴⁻⁶
54	5	45	80	4.25± 1.43e-2 ¹	<1.00± 0.00 ¹	2.99± 8.82e-2 ¹

¹⁻²³ Number in the superscript indicate on statistically significant difference between values at the significance level of $p < 0.05$ (Post hoc Tukey HSD test)

Table S3.

Experimental data for responses related to mineral composition

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	K (mg/kg _{d.m.})	Mg (mg/kg _{d.m.})	Fe (mg/kg _{d.m.})	Ca (mg/kg _{d.m.})
0	Fresh mushroom sample			3312.53± 79.64 ¹	90.43± 5.46 ¹	23.53± 0.22 ^{1,2}	185.36± 5.76 ¹
1	0.5	25	60	3583.89± 68.81 ^{1,2}	145.32± 4.50 ²	23.10± 0.36 ¹	230.08± 2.72 ²
2	1	25	60	3694.57± 63.68 ^{2,3}	168.09± 2.31 ^{2,3}	24.03± 0.03 ¹⁻³	246.30± 4.32 ^{2,3}
3	1.5	25	60	4787.83± 27.79 ^{10,11}	392.91± 6.35 ¹¹	26.061± 0.30 ^{5,6}	426.26± 5.23 ¹²
4	2	25	60	5375.90± 22.35 ^{13,14}	514.85± 7.51 ^{13,14}	27.85± 0.12 ⁷⁻⁹	525.06± 4.17 ^{14,15}
5	3	25	60	6175.93± 49.95 ¹⁷⁻¹⁹	678.37± 9.90 ¹⁹	29.05± 0.45 ⁹⁻¹¹	654.75± 1.90 ²¹
6	5	25	60	7250.71± 133.15 ^{22,23}	900.10± 20.21 ^{23,24}	31.18± 0.98 ¹²⁻¹⁵	831.67± 11.73 ^{25,26}
7	0.5	35	60	3591.51± 102.18 ^{1,2}	146.89± 2.14 ²	24.01± 0.33 ¹⁻³	229.34± 2.09 ²
8	1	35	60	4100.46± 50.27 ⁴⁻⁶	251.56± 3.54 ^{5,6}	25.02± 0.21 ²⁻⁵	310.11± 3.46 ⁵⁻⁷
9	1.5	35	60	5026.51± 55.57 ^{11,12}	441.99± 9.50 ¹²	27.01± 0.58 ^{6,7}	465.55± 12.78 ¹³
10	2	35	60	5848.19± 93.21 ¹⁵⁻¹⁷	610.98± 9.53 ^{16,17}	28.08± 0.27 ⁷⁻⁹	600.81± 9.02 ¹⁷⁻¹⁹
11	3	35	60	6638.59± 78.23 ²⁰	772.52± 12.29 ²¹	30.15± 0.12 ¹⁰⁻¹³	730.91± 15.85 ^{23,24}
12	5	35	60	7567.15± 88.40 ²³	963.48± 3.18 ²⁵	32.14± 0.19 ¹⁵⁻¹⁷	885.76± 19.72 ²⁴
13	0.5	45	60	4106.75± 69.50 ⁴⁻⁶	250.85± 2.88 ^{5,6}	25.02± 0.59 ²⁻⁵	314.15± 2.75 ^{6,7}
14	1	45	60	4268.25± 89.27 ⁵⁻⁸	288.06± 3.73 ⁶⁻⁸	25.25± 0.34 ³⁻⁵	340.73± 3.04 ⁷⁻⁹
15	1.5	45	60	5201.78± 84.58 ^{12,13}	478.04± 8.31 ^{12,13}	27.15± 0.47 ⁶⁻⁸	494.40± 5.88 ^{13,14}
16	2	45	60	6066.80± 93.75 ^{17,18}	655.93± 5.67 ^{18,19}	29.29± 0.46 ⁹⁻¹¹	634.79± 8.29 ¹⁹⁻²¹
17	3	45	60	7256.97± 33.83 ^{22,23}	902.69± 27.76 ²⁴	31.28± 0.37 ¹²⁻¹⁵	838.70± 19.24 ²⁶
18	5	45	60	7987.03± 90.26 ²⁴	1050.83± 14.30 ²⁶	33.13± 0.38 ¹⁶⁻¹⁸	953.87± 15.82 ²⁸
19	0.5	25	70	3592.90± 79.21 ^{1,2}	149.18± 1.25 ²	24.12± 0.26 ¹⁻³	230.56± 3.50 ²
20	1	25	70	4452.34± 48.64 ⁷⁻⁹	323.92± 4.78 ^{8,9}	25.79± 0.17 ⁴⁻⁶	370.03± 11.83 ⁹⁻¹¹
21	1.5	25	70	5113.20± 79.45 ¹¹⁻¹³	460.08± 5.12 ¹²	27.13± 0.53 ⁶⁻⁸	480.82± 3.13 ¹³
22	2	25	70	5701.85± 100.05 ¹⁴⁻¹⁶	581.09± 11.14 ^{15,16}	28.25± 0.51 ⁷⁻⁹	576.71± 10.14 ^{17,18}
23	3	25	70	6218.78± 138.76 ^{18,19}	687.19± 5.68 ¹⁹	29.16± 0.29 ⁹⁻¹¹	660.80± 11.74 ^{21,22}
24	5	25	70	7563.17± 241.98 ²³	963.66± 7.03 ²⁵	32.14± 0.71 ¹⁵⁻¹⁷	884.10± 12.32 ²⁷
25	0.5	35	70	3963.72±	223.44±	24.59±	292.60±

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	K (mg/kg _{d.m.})	Mg (mg/kg _{d.m.})	Fe (mg/kg _{d.m.})	Ca (mg/kg _{d.m.})
				83.60 ³⁻⁵	4.04 ^{4.5}	0.47 ¹⁻⁵	3.61 ⁴⁻⁶
26	1	35	70	4349.82± 32.68 ⁶⁻⁹	301.84± 0.82 ^{7.8}	25.37± 0.41 ³⁻⁵	355.16± 7.13 ⁸⁻¹⁰
27	1.5	35	70	5118.26± 135.91 ¹¹⁻¹³	460.87± 5.68 ¹²	27.13± 0.30 ⁶⁻⁸	481.65± 8.47 ¹³
28	2	35	70	5928.64± 71.99 ¹⁶⁻¹⁸	627.52± 9.33 ^{17,18}	29.00± 0.30 ^{9,10}	610.04± 10.31 ¹⁸⁻²⁰
29	3	35	70	6742.33± 125.09 ^{20,21}	796.85± 10.97 ²¹	30.57± 0.23 ¹¹⁻¹⁴	749.99± 14.06 ²⁴
30	5	35	70	8345.59± 126.77 ^{25,26}	1120.56± 18.68 ²⁷	34.05± 1.02 ¹⁸⁻²⁰	1010.89± 15.43 ²⁹
31	0.5	45	70	3874.04± 63.32 ²⁻⁴	203.99± 2.20 ^{3,4}	24.17± 0.66 ¹⁻³	275.84± 5.14 ³⁻⁵
32	1	45	70	4349.82± 119.37 ⁶⁻⁹	302.84± 5.85 ^{7.8}	25.27± 0.40 ³⁻⁵	354.16± 3.96 ⁸⁻¹⁰
33	1.5	45	70	5853.43± 97.41 ¹⁵⁻¹⁷	610.05± 12.17 ^{16,17}	28.68± 0.56 ⁸⁻¹⁰	600.66± 10.78 ¹⁷⁻¹⁹
34	2	45	70	7033.42± 108.04 ^{21,22}	850.72± 4.65 ²²	31.43± 0.55 ¹⁷⁻¹⁵	795.90± 13.04 ²⁵
35	3	45	70	7976.47± 50.61 ²⁴	1040.65± 5.48 ²⁶	33.13± 0.50 ¹⁶⁻¹⁸	953.13± 16.82 ²⁸
36	5	45	70	8581.18± 153.36 ^{26,27}	1170.01± 20.42 ²⁸	34.45± 0.35 ¹⁸⁻²⁰	1050.67± 16.16 ³⁰
37	0.5	25	80	3851.88± 64.46 ²⁻⁴	200.44± 5.21 ^{3,4}	24.47± 0.20 ¹⁻⁴	271.19± 3.10 ^{3,4}
38	1	25	80	4553.92± 50.76 ⁸⁻¹⁰	344.81± 7.09 ^{9,10}	26.01± 0.47 ⁴⁻⁶	389.76± 7.85 ¹⁰⁻¹²
39	1.5	25	80	5619.86± 140.16 ¹⁴⁻¹⁶	563.02± 9.35 ¹⁵	28.14± 0.23 ⁷⁻⁹	564.22± 6.26 ^{16,17}
40	2	25	80	6078.48± 87.26 ^{17,18}	657.33± 5.34 ^{18,19}	29.13± 0.78 ⁹⁻¹¹	640.71± 13.97 ^{20,21}
41	3	25	80	6429.86± 42.44 ^{19,20}	730.59± 8.62 ²⁰	30.00± 0.29 ¹⁰⁻¹²	696.55± 12.00 ^{22,23}
42	5	25	80	8108.76± 48.15 ^{24,25}	1074.86± 14.74 ²⁶	33.46± 0.54 ¹⁷⁻¹⁹	974.91± 17.08 ^{28,29}
43	0.5	35	80	4182.68± 68.88 ⁴⁻⁷	267.46± 4.56 ^{6,7}	25.24± 0.21 ³⁻⁵	324.64± 3.16 ⁶⁻⁸
44	1	35	80	4650.52± 82.97 ^{9,10}	364.67± 10.34 ^{10,11}	26.13± 0.17 ^{5,6}	401.65± 5.74 ^{11,12}
45	1.5	35	80	5853.43± 97.86 ¹⁵⁻¹⁷	612.05± 11.09 ^{16,17}	28.68± 0.44 ⁸⁻¹⁰	601.66± 11.34 ^{18,19}
46	2	35	80	7087.17± 162.58 ²²	864.77± 15.04 ^{22,23}	31.24± 0.83 ¹²⁻¹⁵	805.74± 8.37 ^{25,26}
47	3	35	80	7306.88± 75.74 ^{22,23}	910.95± 26.87 ²⁴	31.69± 0.53 ¹³⁻¹⁶	841.91± 18.25 ²⁶
48	5	35	80	8848.75± 180.58 ^{27,28}	1227.04± 20.58 ²⁹	35.01± 0.34 ^{19,20}	1094.72± 16.81 ³¹
49	0.5	45	80	4182.68± 43.00 ⁴⁻⁷	267.47± 7.12 ^{6,7}	25.24± 0.39 ³⁻⁵	327.65± 4.45 ⁶⁻⁸
50	1	45	80	5544.74± 13.69 ^{14,15}	547.57± 8.41 ^{14,15}	28.02± 0.02 ⁷⁻⁹	551.85± 14.64 ^{15,16}
51	1.5	45	80	6419.62± 112.72 ^{19,20}	728.49± 12.93 ²⁰	30.03± 0.36 ¹⁰⁻¹²	694.87± 12.47 ^{22,23}

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	K (mg/kg _{d.m.})	Mg (mg/kg _{d.m.})	Fe (mg/kg _{d.m.})	Ca (mg/kg _{d.m.})
52	2	45	80	7541.00±	960.10±	32.04±	880.45±
				109.06 ²³	22.73 ²⁵	0.47 ¹⁴⁻¹⁷	8.19 ²⁷
53	3	45	80	8345.55±	1124.56±	34.05±	1010.89±
				245.11 ^{25,26}	11.65 ²⁷	0.37 ¹⁸⁻²⁰	13.415 ²⁹
54	5	45	80	8917.78±	1241.23±	35.02±	1105.08±
				152.90 ²⁸	4.06 ²⁹	0.73 ²⁰	13.182 ³¹

¹⁻³¹ Number in the superscript indicate on statistically significant difference between values at the significance level of $p < 0.05$ (Post hoc Tukey HSD test)

Table S4.

Experimental data of chemical composition responses

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	Proteins (% _{d.m.})	Sugars (% _{d.m.})	Ash (% _{d.m.})
0	Fresh mushroom sample			24.43± 0.57 ²⁷	26.22± 0.35 ¹	9.17± 0.18 ¹
1	0.5	25	60	24.04± 0.37 ^{26,27}	26.81± 0.26 ^{1,2}	9.23± 0.13 ^{1,2}
2	1	25	60	23.88± 0.35 ²⁵⁻²⁷	27.06± 0.40 ¹⁻³	9.25± 0.23 ^{1,2}
3	1.5	25	60	22.36± 0.37 ¹⁹⁻²³	29.36± 0.43 ⁵⁻⁹	9.48± 0.10 ²⁻⁹
4	2	25	60	21.38± 0.17 ¹⁷⁻²⁰	30.85± 0.48 ⁹⁻¹¹	9.63± 0.18 ²⁻¹¹
5	3	25	60	20.44± 0.61 ¹²⁻¹⁷	32.28± 0.42 ¹¹⁻¹⁶	9.77± 0.14 ²⁻¹⁴
6	5	25	60	18.90± 0.32 ⁷⁻¹⁰	34.63± 0.45 ¹⁸⁻²¹	10.00± 0.16 ⁸⁻¹⁵
7	0.5	35	60	24.02± 0.38 ^{26,27}	26.84± 0.37 ^{1,2}	9.23± 0.14 ^{1,2}
8	1	35	60	23.29± 0.34 ²³⁻²⁶	27.96± 0.42 ¹⁻⁵	9.34± 0.21 ¹⁻⁴
9	1.5	35	60	21.88± 0.33 ¹⁸⁻²²	30.10± 0.33 ⁶⁻¹⁰	9.55± 0.10 ²⁻¹⁰
10	2	35	60	20.96± 0.28 ¹⁴⁻¹⁸	31.49± 0.32 ¹⁰⁻¹⁴	9.69± 0.25 ²⁻¹³
11	3	35	60	19.72± 0.46 ⁹⁻¹³	33.38± 0.30 ¹⁵⁻¹⁹	9.88± 0.27 ⁴⁻¹⁵
12	5	35	60	18.19± 0.29 ³⁻⁷	35.69± 0.87 ²¹⁻²⁵	10.11± 0.17 ¹⁰⁻¹⁵
13	0.5	45	60	23.27± 0.28 ²³⁻²⁶	27.98± 0.51 ¹⁻⁵	9.34± 0.14 ¹⁻⁵
14	1	45	60	23.03± 0.71 ²³⁻²⁶	28.35± 0.23 ²⁻⁶	9.38± 0.22 ¹⁻⁵
15	1.5	45	60	21.23± 0.47 ¹⁶⁻¹⁹	31.08± 0.43 ⁹⁻¹²	9.65± 0.06 ²⁻¹²
16	2	45	60	20.46± 0.38 ¹²⁻¹⁷	32.25± 0.33 ¹¹⁻¹⁶	9.77± 0.12 ²⁻¹⁴
17	3	45	60	18.67± 0.12 ⁶⁻⁹	34.97± 0.65 ¹⁹⁻²²	10.04± 0.21 ⁹⁻¹⁵
18	5	45	60	17.64± 0.18 ²⁻⁶	36.53± 0.85 ²²⁻²⁶	10.19± 0.18 ¹¹⁻¹⁵
19	0.5	25	70	24.02± 0.41 ^{26,27}	26.84± 0.58 ^{1,2}	9.23± 0.03 ^{1,2}
20	1	25	70	22.67± 0.30 ²¹⁻²⁴	28.90± 0.48 ⁴⁻⁸	9.44± 0.27 ²⁻⁸
21	1.5	25	70	21.79± 0.16 ¹⁸⁻²²	30.22± 0.69 ⁷⁻¹⁰	9.57± 0.14 ²⁻¹⁰
22	2	25	70	21.11± 0.56 ¹⁵⁻¹⁸	31.27± 0.41 ¹⁰⁻¹³	9.67± 0.10 ²⁻¹²

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	Proteins (% _{d.m.})	Sugars (% _{d.m.})	Ash (% _{d.m.})
23	3	25	70	20.16± 0.37 ¹¹⁻¹⁶	32.70± 0.40 ¹²⁻¹⁷	9.81± 0.18 ²⁻¹⁵
24	5	25	70	18.31± 0.32 ⁴⁻⁸	35.52± 0.56 ²⁰⁻²⁴	10.09± 0.19 ¹⁰⁻¹⁵
25	0.5	35	70	23.49± 0.26 ²³⁻²⁷	27.65± 0.42 ¹⁻⁵	9.31± 0.16 ¹⁻⁴
26	1	35	70	22.81± 0.16 ²¹⁻²⁵	28.69± 0.51 ³⁻⁸	9.41± 0.10 ¹⁻⁷
27	1.5	35	70	21.72± 0.27 ¹⁸⁻²¹	30.33± 0.51 ⁸⁻¹⁰	9.58± 0.10 ²⁻¹⁰
28	2	35	70	20.51± 0.30 ¹²⁻¹⁷	32.17± 0.35 ¹¹⁻¹⁶	9.76± 0.08 ²⁻¹⁴
29	3	35	70	19.40± 0.16 ⁸⁻¹²	33.86± 0.77 ¹⁶⁻²⁰	9.93± 0.27 ⁵⁻¹⁵
30	5	35	70	17.18± 0.16 ¹⁻⁴	37.23± 0.46 ²⁴⁻²⁷	10.26± 0.12 ¹³⁻¹⁵
31	0.5	45	70	23.63± 0.20 ²⁴⁻²⁷	27.43± 0.51 ¹⁻⁴	9.29± 0.07 ¹⁻³
32	1	45	70	22.93± 0.29 ²²⁻²⁶	28.49± 0.45 ²⁻⁷	9.40± 0.16 ¹⁻⁵
33	1.5	45	70	20.78± 0.25 ¹³⁻¹⁸	31.76± 0.28 ¹⁰⁻¹⁵	9.72± 0.10 ²⁻¹³
34	2	45	70	19.13± 0.38 ⁷⁻¹¹	34.28± 0.95 ¹⁷⁻²¹	9.97± 0.16 ⁶⁻¹⁵
35	3	45	70	17.66± 0.32 ²⁻⁶	36.51± 0.52 ²²⁻²⁶	10.19± 0.12 ¹¹⁻¹⁵
36	5	45	70	16.87± 0.31 ^{1,2}	37.71± 0.70 ^{26,27}	10.31± 0.10 ^{14,15}
37	0.5	25	80	23.64± 0.39 ²⁴⁻²⁷	27.42± 0.21 ¹⁻⁴	9.29± 0.16 ¹⁻³
38	1	25	80	22.68± 0.38 ²¹⁻²⁴	28.88± 0.22 ⁴⁻⁸	9.43± 0.04 ²⁻⁸
39	1.5	25	80	21.12± 0.36 ¹⁵⁻¹⁸	31.25± 0.32 ¹⁰⁻¹³	9.67± 0.19 ²⁻¹²
40	2	25	80	20.46± 0.43 ¹²⁻¹⁷	32.25± 0.27 ¹¹⁻¹⁶	9.77± 0.20 ²⁻¹⁴
41	3	25	80	19.99± 0.35 ¹⁰⁻¹⁵	32.97± 0.48 ¹³⁻¹⁸	9.84± 0.08 ³⁻¹⁵
42	5	25	80	17.45± 0.12 ¹⁻⁵	36.82± 1.14 ²³⁻²⁷	10.22± 0.05 ¹²⁻¹⁵
43	0.5	35	80	23.17± 0.40 ²³⁻²⁶	28.13± 0.40 ²⁻⁵	9.36± 0.14 ¹⁻⁵
44	1	35	80	22.40± 0.40 ²⁰⁻²³	29.30± 0.62 ⁵⁻⁹	9.48± 0.08 ²⁻⁹
45	1.5	35	80	20.92± 0.09 ¹⁴⁻¹⁸	31.56± 0.52 ¹⁰⁻¹⁴	9.70± 0.29 ²⁻¹³
46	2	35	80	18.99± 0.11 ⁷⁻¹⁰	34.48± 0.34 ¹⁷⁻²¹	9.99± 0.16 ⁷⁻¹⁵

Run no.	Time (h)	Temperature (°C)	Concentration (% _{d.m.})	Proteins (% _{d.m.})	Sugars (% _{d.m.})	Ash (% _{d.m.})
47	3	35	80	18.64± 0.21 ⁶⁻⁹	35.02± 0.04 ¹⁹⁻²²	10.04± 0.20 ⁹⁻¹⁵
48	5	35	80	16.53± 0.30 ^{1,2}	38.23± 0.91 ^{26,27}	10.36± 0.10 ¹⁵
49	0.5	45	80	23.17± 0.36 ²³⁻²⁶	28.13± 0.10 ²⁻⁵	9.36± 0.12 ¹⁻⁵
50	1	45	80	21.09± 0.23 ¹⁵⁻¹⁸	31.29± 0.40 ¹⁰⁻¹⁴	9.67± 0.08 ²⁻¹²
51	1.5	45	80	19.91± 0.33 ¹⁰⁻¹⁴	33.08± 0.82 ¹⁴⁻¹⁸	9.85± 0.16 ³⁻¹⁵
52	2	45	80	18.38± 0.33 ⁵⁻⁸	35.42± 0.61 ²⁰⁻²³	10.08± 0.24 ¹⁰⁻¹⁵
53	3	45	80	17.08± 0.28 ¹⁻³	37.38± 0.85 ²⁵⁻²⁷	10.28± 0.23 ¹³⁻¹⁵
54	5	45	80	16.35± 0.19 ¹	38.49± 0.34 ²⁷	10.39± 0.18 ¹⁵

¹⁻²⁷ Number in the superscript indicate on statistically significant difference between values at the significance level of $p < 0.05$ (Post hoc Tukey HSD test)

Table S5.

Regression coefficients of SOP models for osmotic dehydration process and microbiological responses

	Osmotic dehydration process responses				Microbiological responses	
	Y1/DMC	Y2/WL	Y3/SG	Y4/ a_w	Y5/TPC	Y6/TYMC
β_0	78.42752*	0.636485	0.021941	0.818513*	6.818764*	4.147521*
β_1	-5.30558*	0.097718*	-0.001841	0.011627*	-0.470874*	0.105852
β_{11}	0.21300	-0.015691*	-0.001275*	0.001586*	0.052161*	0.006467
β_2	-2.39601*	-0.028964*	-0.000874	0.003452*	-0.045832*	0.005180
β_{22}	0.03336*	0.000561*	0.000002	-0.000055*	0.000435*	0.000026
β_3	-0.95358	-0.005117	-0.000899	0.002253	-0.006793	0.009616
β_{33}	0.00557	0.000036	0.000005	-0.000018	0.000004	-0.000021
β_{12}	0.13276*	-0.000216	0.000256*	-0.000439*	-0.000399	-0.002058*
β_{13}	0.07917*	0.001185*	0.000230*	-0.000303*	-0.000024	-0.004396*
β_{23}	0.00563	0.000003	0.000015	0.000002	0.000073	-0.000132

* Statistically significant at significance level of $p < 0.05$

Table S6.

Regression coefficients of SOP models for minerals and chemical responses

	Mineral composition responses				Chemical composition responses		
	Y7/K	Y8/Mg	Y9/Fe	Y10/Ca	Y11/Proteins	Y12/Sugars	Y13/Ash
β_0	5769.818	638.9275	23.45341*	597.3860	22.39525*	29.31142*	9.476896*
β_1	1461.633*	301.1547*	3.00567*	241.7217*	-2.06593*	3.13880*	0.311600*
β_{11}	-187.959*	-38.6908*	-0.39906	-30.9832*	0.27160*	-0.41265*	-0.040965*
β_2	-66.155	-13.6478	-0.06844	-11.1607	0.07403	-0.11248	-0.011166
β_{22}	0.378	0.0775	0.00041	0.0683	-0.00054	0.00082	0.000082
β_3	-98.959	-21.5739	-0.10779	-16.4553	0.10863	-0.16504	-0.016384
β_{33}	0.704	0.1533	0.00097	0.1178	-0.00083	0.00126	0.000125
β_{12}	7.180*	1.4701*	0.01634*	1.1853*	-0.01058*	0.01607*	0.001595*
β_{13}	3.995	0.8166	0.00902	0.6451	-0.00618	0.00938	0.000931
β_{23}	0.954	0.1965	0.00139	0.1546	-0.00111	0.00168	0.000167

* Statistically significant at significance level of $p < 0.05$