

**Table S1.** Experimental design and results of central composite design for optimization of probiotic growth in sea buckthorn juice.

Run	Block	Std	Non coded levels			Probiotic Growth (log CFU/mL)
			Juice concentration (g/100 mL)	Inoculum Size (mL/100 mL)	Temperature (C°)	
1	Block 1	9	20	1	37	8.5
2	Block 1	8	30	1.5	42	6.8
3	Block 1	10	20	1	37	8.5
4	Block 1	11	20	1	37	8.5
5	Block 1	4	30	1.5	32	7.5
6	Block 1	7	10	1.5	42	6.5
7	Block 1	12	20	1	37	8.5
8	Block 1	1	10	0.5	32	6.2
9	Block 1	6	30	0.5	42	6.1
10	Block 1	2	30	0.5	32	7
11	Block 1	5	10	0.5	42	5.8
12	Block 1	3	10	1.5	32	7.2
13	Block 2	14	36.8179	1	37	8.65
14	Block 2	15	20	0.159104	37	7.4
15	Block 2	18	20	1	45.409	5.1
16	Block 2	16	20	1.8409	37	8.8
17	Block 2	13	3.18207	1	37	7.4
18	Block 2	19	20	1	37	8.5
19	Block 2	20	20	1	37	8.5
20	Block 2	17	20	1	28.591	6.2

**Table S2.** Experimental design and results of central composite design for optimization of probiotic growth in sea buckthorn juice.

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Block	0.4625	1	0.4625			
<b>Model</b>	23.72	9	2.64	60.89	<0.0001	<b>significant</b>
A- Juice concentration	1.06	1	1.06	24.45	0.0008	
B- Inoculum Size	2.02	1	2.02	46.70	<0.0001	
C-Temperature	1.52	1	1.52	35.02	0.0002	
AB	0.0313	1	0.0313	0.7219	0.4176	
AC	0.0313	1	0.0313	0.7219	0.4176	

BC	0.0012	1	0.0012	0.0289	0.8688
A <sup>2</sup>	1.20	1	1.20	27.81	<b>0.0005</b>
B <sup>2</sup>	0.9934	1	0.9934	22.95	<b>0.0010</b>
C <sup>2</sup>	18.35	1	18.35	423.89	<b>&lt;0.0001</b>
<b>Residual</b>	0.3896	9	0.0433		
Lack of Fit	0.3896	5	0.0779		
Pure Error	0.0000	4	0.0000		
<b>Cor Total</b>	24.58	19			

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