

Supplementary document 1. Analysis variance for the experimental results of response surface quadratic model

	Yield				Total phenolic content			
	df	Coefficient estimate	F-value	Prob > F	df	Coefficient estimate	F-value	Prob > F
Model	14	-74.4	14.0	< 0.0001*	14	-20.3	18.4	< 0.0001*
X_1	1	1.04	1.52	0.238	1	0.44	18.1	0.0008*
X_2	1	1.22	10.0	0.007*	1	0.39	11.9	0.004*
X_3	1	1.20	4.86	0.045*	1	0.28	15.8	0.001*
X_4	1	2.53	57.1	< 0.0001*	1	1.01	103.7	< 0.0001*
$X_1 X_2$	1	-0.0047	5.45	0.035*	1	-0.0014	2.04	0.175
$X_1 X_3$	1	-0.0003	0.026	0.875	1	-0.00002	0.0006	0.981
$X_1 X_4$	1	-0.0024	0.349	0.564	1	0.0019	0.883	0.363
$X_2 X_3$	1	-0.0046	5.35	0.036*	1	-0.0013	1.81	0.200
$X_2 X_4$	1	-0.0050	1.54	0.235	1	-0.0030	2.25	0.156
$X_3 X_4$	1	-0.0050	1.52	0.238	1	-0.0003	0.031	0.863
X_1^2	1	-0.0079	25.2	0.0002*	1	-0.0037	22.4	0.0003*
X_2^2	1	-0.0078	24.3	0.0002*	1	-0.0025	10.6	0.006*
X_3^2	1	-0.0084	28.3	0.0001*	1	-0.0023	9.08	0.009*
X_4^2	1	-0.0567	80.9	< 0.0001*	1	-0.0295	90.7	< 0.0001*

*p < 0.05