

Supplementary material

Table S 1 Graphical and numerical optimization of composite flour

	Graphical optimization	Numerical optimization
Proteins(g/100gDM)	15,1969	15,1971
Lipids(g/100gDM)	6,83004	6,83052
Carbohydrats(g/100gDM)	64,5233	64,5229
Fe(ppm)	57,6145	57,6143
Zn(ppm)	45,4751	45,4758
P(ppm)	4575,32	4418,82
Polyphenols(µgGAE/gDM)	563,016	563,012
Scavenging activity(%)	17,0955	17,0957
Yellow index	19,6008	19,6
Zeleny number(ml)	10,0983	10,0783

Design-Expert® Software
Component Coding: Actual

Desirability
0 1

X1 = A: Soft wheat flour
X2 = B: chickpea flour
X3 = C: milk powder

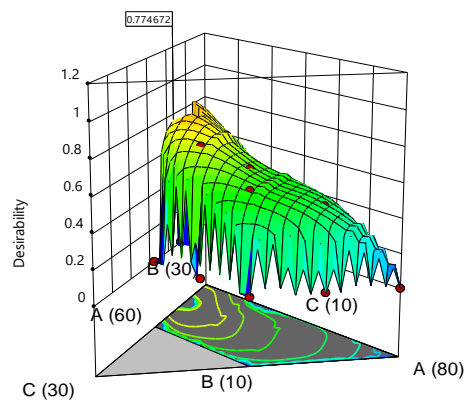


Figure S1: Response surface mixture optimization of composite flour

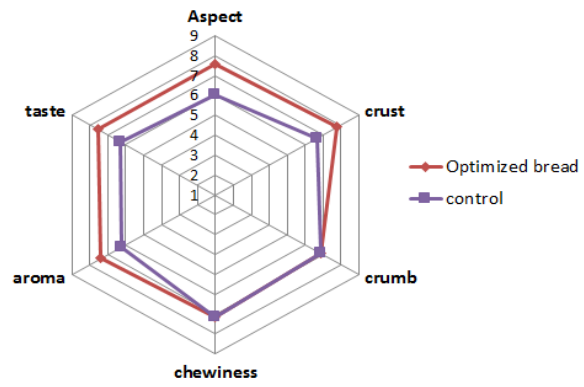


Figure S2: Average acceptance for optimized and control breads



Photo S1: Formulated breads: from left a)-optimized bread, b)-bread wheat bread (control)