

Influence of flaxseed flour as a partial replacement for wheat flour
on the characteristics of Chinese steamed bread

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Supplementary Material

Supplementary figure and table caption

Table S1 Proximate composition of CSB prepared from blends of wheat flour and flaxseed flour

Table S2 Mixolab parameters of different flours

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Fig. S3 Thermo-mechanical curve from Mixolab analysis of dough

Table S1 Proximate composition of CSB prepared from blends of wheat flour and flaxseed flour

Samples	Moisture (g/100 g)	Protein content (g/100 g)	Fat content (g/100 g)	Crude fiber (g/100 g)	Ash content (g/100 g)
Control	40.17±0.02 ^a	12.69±0.00 ^f	2.20±0.06 ^e	0.22±0.00 ^c	0.50±0.01 ^e
(WF 94% + 6% FF)	38.80±0.08 ^b	13.48±0.02 ^e	3.56±0.21 ^d	0.66±0.01 ^b	0.67±0.01 ^d
(WF 92% + 8% FF)	37.27±0.03 ^c	13.66±0.02 ^d	3.62±0.02 ^e	0.91±0.00 ^b	0.73±0.03 ^c
(WF 90% + 10% FF)	36.75±0.05 ^d	13.72±0.01 ^c	4.14±0.10 ^b	1.09±0.03 ^b	0.76±0.01 ^b
(WF 88% + 12% FF)	36.53±0.02 ^e	13.78±0.01 ^b	4.26±0.31 ^b	1.37±0.47 ^{ab}	0.77±0.00 ^b
(WF 86% + 14% FF)	36.31±0.03 ^f	14.00±0.01 ^a	4.35±0.03 ^a	1.39±0.03 ^a	0.84±0.00 ^a

Values are expressed as mean ± SD (n=3). Values followed by letters in the same column are significantly different ($p < 0.05$). WF, Wheat flour; FF, Flaxseed flour

Table S2 Mixolab parameters of different flours

Samples	WA（%）	C1(Nm)	Cs(Nm)	C2(Nm)	C3(Nm)	C4(Nm)	C5(Nm)	C1-Cs（Nm）	Cs-C2（Nm）	C1-C2（Nm）	C3-C4（Nm）	C5-C4（Nm）	TC2(min)	C2 tem（℃）	Stability (min)	DT (min)	α	β	γ
Control	58.50±0.00 ^a	1.11±0.03 ^a	0.79±0.02 ^a	0.36±0.02 ^a	1.58±0.03 ^a	1.25±0.04 ^a	1.99±0.01 ^a	0.32±0.01 ^d	0.43±0.01 ^a	0.75±0.01 ^c	0.33±0.02 ^a	0.74±0.03 ^a	16.46±0.13 ^a	56.15±0.25 ^a	4.58±0.01 ^a	1.38±0.25 ^b	-0.05±0.00 ^a	0.43±0.00 ^c	-0.05±0.01 ^a
(WF 94% + 6% FF)	57.90±0.00 ^b	1.10±0.00 ^a	0.73±0.00 ^b	0.32±0.01 ^{ab}	1.39±0.00 ^b	1.10±0.01 ^{bc}	1.76±0.04 ^b	0.37±0.00 ^c	0.41±0.00 ^a	0.78±0.01 ^{bc}	0.29±0.01 ^b	0.66±0.05 ^{ab}	16.64±0.09 ^a	56.35±0.05 ^a	3.35±0.15 ^b	2.62±0.05 ^a	-0.06±0.02 ^a	0.50±0.00 ^a	-0.05±0.01 ^a
(WF 92% + 8% FF)	57.70±0.00 ^b	1.10±0.00 ^a	0.71±0.01 ^b	0.30±0.01 ^{ab}	1.36±0.01 ^{bc}	1.09±0.03 ^c	1.64±0.04 ^{bc}	0.39±0.01 ^{bc}	0.41±0.01 ^a	0.80±0.01 ^{abc}	0.27±0.02 ^b	0.55±0.01 ^b	16.35±0.18 ^a	55.05±1.15 ^a	3.10±0.10 ^{bcd}	2.58±0.17 ^a	-0.05±0.02 ^a	0.49±0.00 ^a	-0.03±0.01 ^a
(WF 90% + 10% FF)	56.90±0.00 ^c	1.12±0.01 ^a	0.73±0.01 ^b	0.32±0.01 ^{ab}	1.39±0.01 ^b	1.18±0.01 ^{ab}	1.92±0.06 ^a	0.39±0.00 ^{abc}	0.41±0.00 ^a	0.80±0.01 ^{ab}	0.21±0.01 ^c	0.75±0.07 ^a	16.39±0.26 ^a	56.30±0.80 ^a	3.15±0.05 ^{bc}	2.75±0.03 ^a	-0.03±0.00 ^a	0.47±0.01 ^{ab}	-0.03±0.02 ^a
(WF 88% + 12% FF)	57.40±0.00 ^d	1.12±0.01 ^a	0.70±0.01 ^b	0.28±0.00 ^b	1.33±0.01 ^c	1.03±0.02 ^c	1.69±0.02 ^{bc}	0.42±0.00 ^a	0.42±0.01 ^a	0.84±0.01 ^a	0.30±0.01 ^{ab}	0.66±0.04 ^{ab}	16.27±0.20 ^a	56.05±0.75 ^a	2.85±0.05 ^{cd}	2.46±0.02 ^a	-0.03±0.00 ^a	0.44±0.01 ^{bc}	-0.03±0.01 ^a
(WF 86% + 14% FF)	56.90±0.00 ^c	1.11±0.04 ^a	0.70±0.03 ^b	0.29±0.01 ^{ab}	1.32±0.01 ^c	1.02±0.02 ^c	1.58±0.05 ^c	0.41±0.02 ^{ab}	0.41±0.02 ^a	0.82±0.03 ^{ab}	0.30±0.02 ^{ab}	0.56±0.03 ^b	16.44±0.16 ^a	56.25±0.55 ^a	2.80±0.10 ^d	2.34±0.03 ^a	-0.04±0.00 ^a	0.50±0.02 ^a	-0.04±0.00 ^a

Values are expressed as mean ± SD (n=3). Values followed by letters in the same column are significantly different (p < 0.05). WF, Wheat flour; FF, Flaxseed flour; WA, Water absorption; DT, Development time

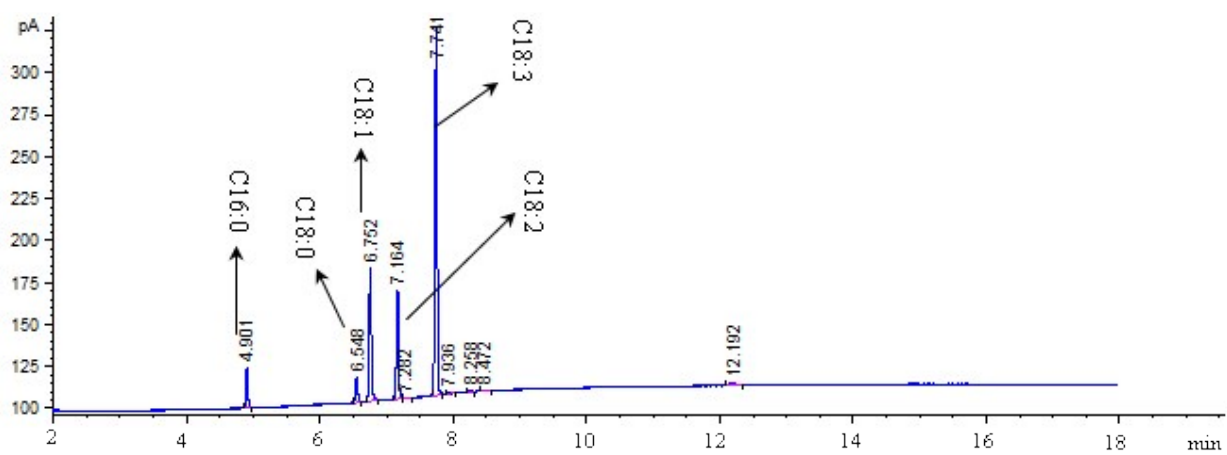


Fig. S1 Gas chromatogram of fatty acid of flaxseed

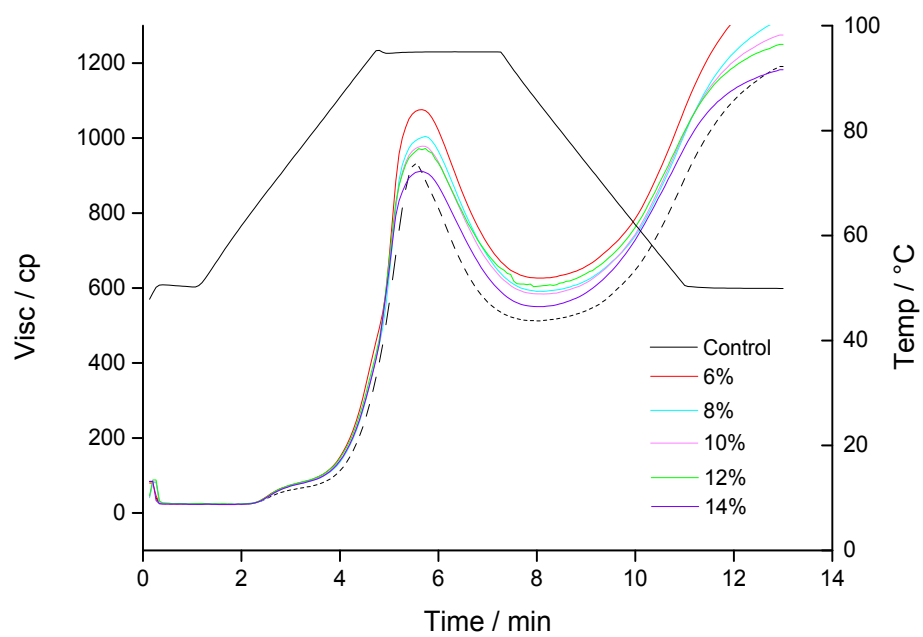


Fig. S2 RVA profiles of wheat flour blends and flaxseed flour

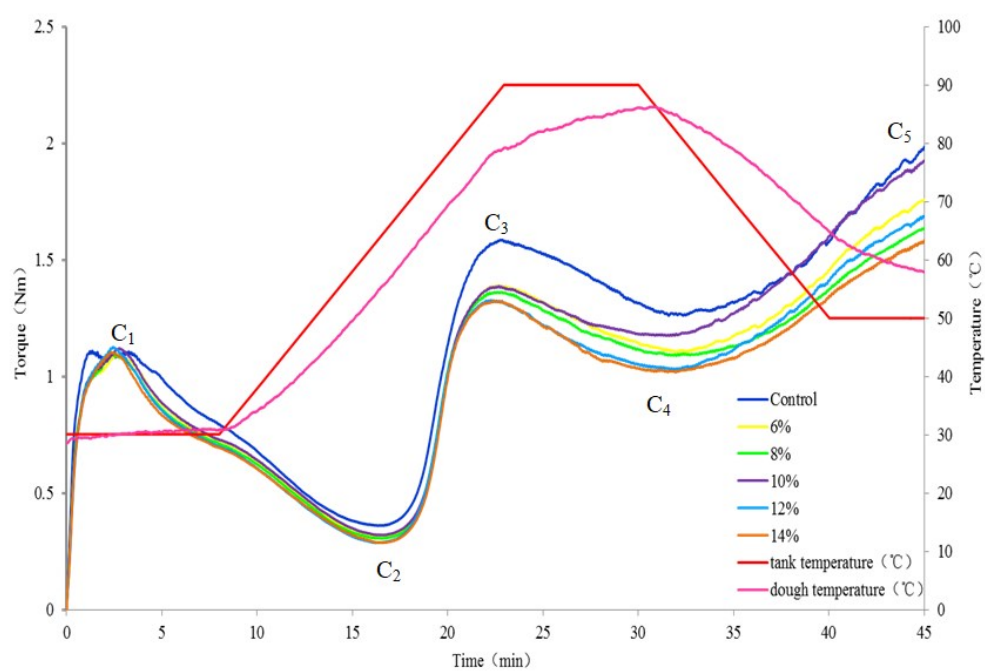


Fig. S3 Thermo-mechanical curve from Mixolab analysis of dough