

Supplementary Materials

Effect of Beetroot Powder Incorporation on Functional Properties and Shelf Life of Biscuits

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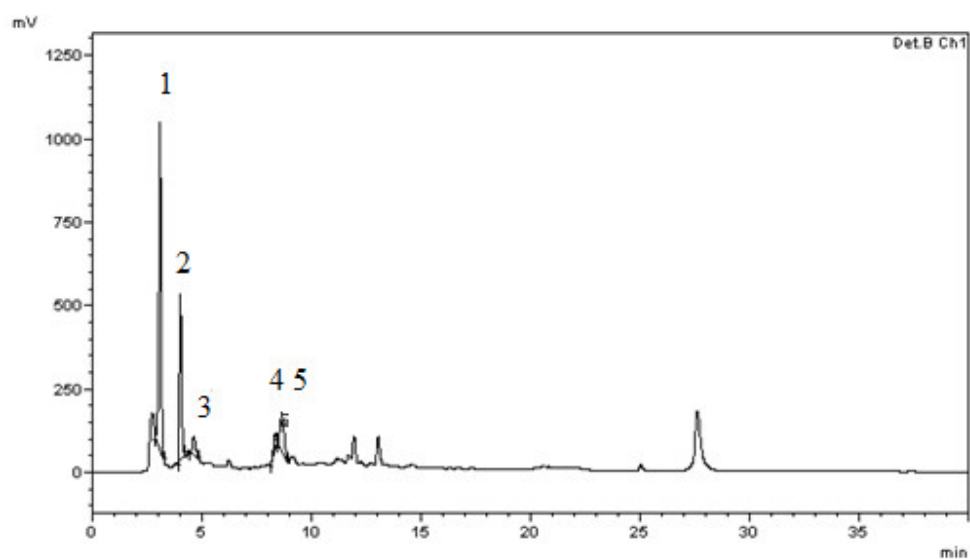


Figure S1. HPLC chromatograms of phenolics in beetroot power (start of storage) on 280 nm: 1 - gallic acid; 2 - protocatechuic acid; 3 - catechin; 4 - epicatechin; 5 - vanillic acid.

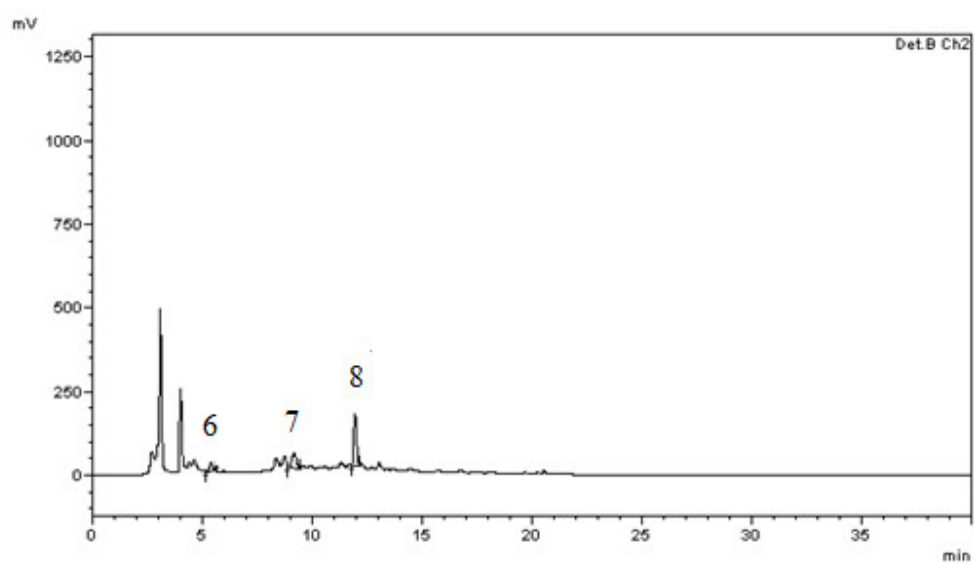


Figure S2. HPLC chromatograms of phenolics in beetroot power (start of storage) on 320 nm: 6 - chlorogenic acid; 7 - *p*-coumaric acid; 8 - caffeic acid.

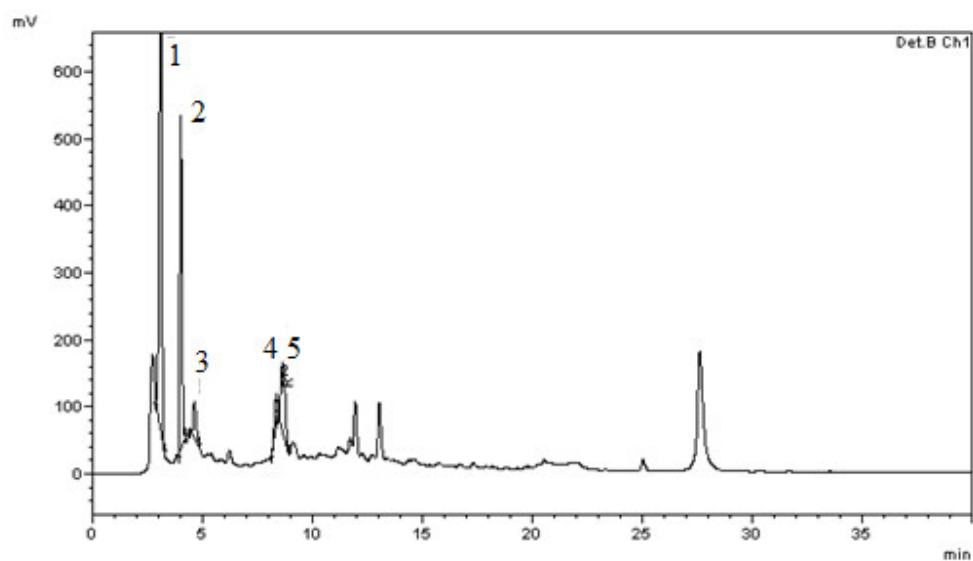


Figure S3. HPLC chromatograms of phenolics in spelt flour (start of storage) on 280 nm: 1 - gallic acid; 2 - protocatechuic acid; 3 - catechin; 4 - epicatechin; 5 - vanillic acid.

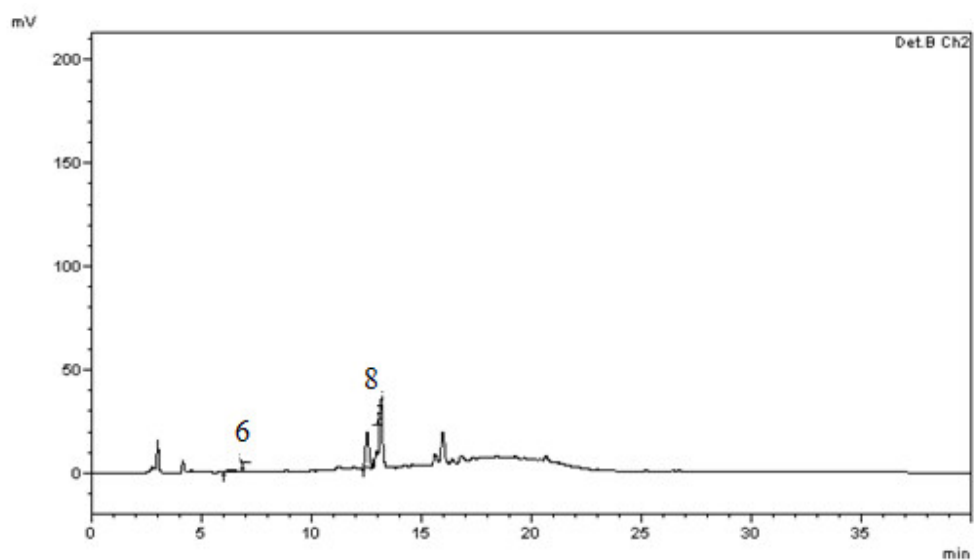


Figure S4. HPLC chromatograms of phenolics in spelt flour (start of storage) on 320 nm: 6 - chlorogeni acid; 7 - *p*-coumaric acid; 8 - caffeic acid.

Table S1. Yeast and mold content in biscuit samples

Sample	Sampling plan		Test results (n)- start of storage					Test results (n)- 3. Months					Test results (n)- 6. Months				
	<i>n</i>	<i>c</i>	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
A1	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
A2	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10	< 10	20	10	< 10	< 10	< 10	20
B1	5	1	< 10	< 10	< 10	< 10	< 10	< 10	10	< 10	10	< 10	< 10	10	< 10	10	< 10
B2	5	1	< 10	< 10	< 10	< 10	< 10	1600	800	400	< 10	400	600	1800	900	< 10	500
C1	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
C2	5	1	80	< 10	< 10	< 10	< 10	160	< 10	80	< 10	80	100	< 10	< 10	< 10	80
D1	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
D2	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10

Table S2. Yeast and mold content in spelt flour

Sampling plan		Test results (n)- start of storage					Test results (n)- 3. Months					Test results (n)- 6. Months				
<i>n</i>	<i>c</i>	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
5	2	50	< 10	< 10	< 10	< 10	1900	1000	800	600	700	600	800	1200	600	700

Limit values: *m* – 10 cfu/g; *M* - 10 cfu/gTable S3. Content of *enterobacteria* in biscuit samples

Sample	Sampling plan		Test results (n)- start of storage					Test results (n)- 3. Months					Test results (n)- 6. Months				
	<i>n</i>	<i>c</i>	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
A1	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
A2	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
B1	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
B2	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
C1	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
C2	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
D1	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
D2	5	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10

Limit values: *m* – 10 cfu/g; *M* - 10 cfu/g

Table S4. Content of aerobic mesophilic bacteria in tea biscuits

Sample	Sampling plan		Test results (n)- start of storage	Test results (n)- 3. Months	Test results (n)- 6. Months
	<i>n</i>	<i>c</i>	<i>n</i> (1-5)	<i>n</i> (1-5)	<i>n</i> (1-5)
A1	5	5	25	50 (<i>Bacillus species</i> 10)	50 (<i>Bacillus species</i> 10)
A2	5	5	60	100	10
B1	5	5	15	20 (<i>Bacillus cereus</i> 5)	30
B2	5	5	10	40	40
C1	5	5	15 (<i>Bacillus cereus</i> 10)	20 (<i>Bacillus cereus</i> 10)	20
C2	5	5	10 (<i>Bacillus megaterium</i> 10)	20 (<i>Bacillus megaterium</i> 10)	20
D1	5	5	30 (<i>Bacillus megaterium</i> 20, <i>Bacillus simplex</i> 10)	250 (<i>Bacillus species</i> 40)	350 (<i>Bacillus species</i> 250)
D2	5	5	10 (<i>Bacillus megaterium</i> 10)	110 (<i>Bacillus megaterium</i> 30)	350 (<i>Bacillus species</i> 40)