

Supplementary material Table S1: Individual phenolic compounds in blueberry fruit stored in regular atmosphere at 22 °C (control) at each storage duration.

Phenolic compound	Control; 0.03 % CO <sub>2</sub> , 22 °C				Significance
	Harvest	24 h	48 h	72 h	
Neochlorogenic acid	65.11 ± 8.74 b	67.92 ± 8.67 b	86.21 ± 3.14 a	70.35 ± 2.32 b	**
Feruloylquinic acid derivative	27.80 ± 2.13 b	23.92 ± 1.87 b	32.03 ± 1.88 a	32.94 ± 2.09 a	***
Ferulic acid hexoside derivative	25.40 ± 1.90 b	27.93 ± 1.85 b	39.76 ± 3.90 a	35.22 ± 2.13 a	***
Caffeic acid hexoside	23.72 ± 2.18 a	18.00 ± 1.72 b	26.97 ± 1.78 a	26.05 ± 1.28 a	***
Chlorogenic acid	1167 ± 74.04 ab	1250 ± 71.25 a	1095 ± 71.66 bc	980.2 ± 76.07 c	**
Ferulic acid hexoside	8.47 ± 0.54 d	10.94 ± 0.90 c	16.07 ± 0.68 a	13.88 ± 1.13 b	***
Cryptochlorogenic acid	20.72 ± 1.58 c	21.50 ± 1.37 c	29.05 ± 1.55 a	25.15 ± 1.75 b	***
5- <i>O</i> -caffeoylshikimic acid	9.90 ± 0.84 ab	8.82 ± 1.27 b	12.01 ± 0.96 a	10.26 ± 1.00 ab	**
5- <i>O</i> -feruloylquinic acid	13.04 ± 0.89 b	10.29 ± 0.87 c	17.90 ± 1.26 a	16.10 ± 0.93 a	***
Dicaffeoylquinic acid	8.36 ± 0.96 b	8.99 ± 1.34 b	12.82 ± 0.47 a	11.34 ± 0.87 a	***
Ellagic acid derivative	56.71 ± 3.34 c	48.14 ± 4.76 c	83.14 ± 4.59 a	67.30 ± 4.30 b	***
Total phenolic acids	1427 ± 93.31 ab	1497 ± 91.10 a	1451 ± 81.16 ab	1289 ± 90.61 b	*
Procyanidin dimer	166.6 ± 9.88 c	214.5 ± 18.95 b	245.3 ± 13.72 a	250.6 ± 12.80 a	***
Epicatechin	25.29 ± 1.70 c	30.97 ± 2.91 b	36.04 ± 1.80 a	35.46 ± 2.06 ab	***
Total flavan-3-ols	191.8 ± 10.90 c	245.5 ± 21.04 b	281.3 ± 15.20 a	286.1 ± 14.40 a	***
Myricetin-3- <i>O</i> -galactoside	15.94 ± 0.43 b	12.27 ± 0.70 c	20.82 ± 1.08 a	16.09 ± 0.89 b	***
Myricetin-3- <i>O</i> -glucoside	9.64 ± 1.21 b	8.39 ± 1.19 b	17.53 ± 1.30 a	15.77 ± 0.41 a	***
Quercetin-3- <i>O</i> -rutinoside	21.90 ± 1.45 b	19.49 ± 0.84 b	36.46 ± 1.71 a	35.73 ± 0.66 a	***
Quercetin-3- <i>O</i> -galactoside	12.16 ± 0.86 b	12.82 ± 1.03 b	20.40 ± 1.57 a	18.91 ± 1.19 a	***
Quercetin-3- <i>O</i> -rhamnoside	2.96 ± 0.29 b	2.90 ± 0.31 b	4.88 ± 0.70 a	4.47 ± 0.16 a	***
Kaempferol-3- <i>O</i> -rutinoside	1.51 ± 0.11 b	1.60 ± 0.31 b	2.73 ± 0.35 a	2.77 ± 0.22 a	***
Isorhamnetin-3- <i>O</i> -rutinoside	4.07 ± 0.35 b	4.32 ± 0.12 b	7.35 ± 0.38 a	6.96 ± 1.14 a	***
Isorhamnetin-3- <i>O</i> -hexoside	9.08 ± 0.70 c	6.01 ± 0.14 d	15.08 ± 1.50 a	11.74 ± 0.27 b	***
Quercetin-3- <i>O</i> -xyloside	10.90 ± 0.43 b	10.89 ± 0.90 b	19.62 ± 1.39 a	18.52 ± 0.93 a	***
Syringetin-3- <i>O</i> -glucoside	4.78 ± 0.46 b	3.78 ± 0.50 b	8.89 ± 0.58 a	7.85 ± 1.04 a	***
Quercetin-3- <i>O</i> -hexose malonate	9.42 ± 0.59 b	10.33 ± 0.50 b	18.06 ± 1.94 a	16.21 ± 0.97 a	***
Total flavonols	102.4 ± 5.61 c	92.81 ± 3.63 c	171.8 ± 10.95 a	155.0 ± 3.89 b	***
Delphinidin-3- <i>O</i> -galactoside	149.4 ± 10.44	164.2 ± 26.04	159.2 ± 12.64	159.8 ± 14.86	NS
Cyanidin-3- <i>O</i> -galactoside	39.02 ± 3.41	44.38 ± 3.61	44.45 ± 3.74	43.52 ± 2.78	NS
Delphinidin-3- <i>O</i> -arabinoside	118.1 ± 12.76	134.3 ± 16.75	134.5 ± 10.78	131.7 ± 7.77	NS
Petunidin-3- <i>O</i> -galactoside	93.85 ± 5.18 b	83.44 ± 6.74 b	112.2 ± 9.09 a	117.5 ± 7.79 a	***
Petunidin-3- <i>O</i> -glucoside	38.42 ± 2.43 b	40.12 ± 2.89 b	46.41 ± 2.83 a	48.69 ± 2.02 a	***

Cyanidin-3- <i>O</i> -arabinoside	20.89 ± 1.85 b	21.81 ± 1.17 b	25.24 ± 0.92 a	26.48 ± 0.26 a	***
Malvidin-3- <i>O</i> -galactoside	2763 ± 116.2 b	2352 ± 110.0 c	3387 ± 64.75 a	3533 ± 157.8 a	***
Malvidin-3- <i>O</i> -glucoside	1045 ± 225.0	853.1 ± 212.1	1016 ± 149.8	1076 ± 73.52	NS
Malvidin-3- <i>O</i> -arabinoside	2203 ± 70.66 c	1975 ± 23.86 d	2927 ± 40.89 a	2726 ± 153.2 b	***
Malvidin-3-(6''-acetyl) galactoside	220.7 ± 20.01 b	181.7 ± 6.20 c	238.9 ± 13.05 b	272.8 ± 14.29 a	***
Malvidin-3-(6''-acetyl) glucoside	284.7 ± 15.55 b	216.4 ± 18.19 c	292.7 ± 26.3 ab	332.3 ± 15.80 a	***
Total anthocyanins	6977 ± 376.0 b	6066 ± 316.8 c	8383 ± 195.7 ab	8468 ± 156.3 a	***
Total phenolics	8697 ± 483.3 b	7902 ± 423.9 c	10288 ± 256.1 a	10198 ± 242.1 a	***

Data are means with corresponding standard errors (4 replicates per storage duration). Different letters (a-d) indicate significant differences between storage durations (Tukey's test,  $\alpha < 0.05$ ; \*,  $p < 0.05$ ; \*\*,  $p < 0.01$ ; \*\*\*,  $p < 0.001$ ; NS, not significant).

Supplementary material Table S2: Individual phenolic compounds in blueberry fruit stored in regular atmosphere at 2 °C at each storage duration.

Phenolic compound		0.03 % CO <sub>2</sub> , 2 °C			
	Harvest	24 h	48 h	72 h	Significance
Neochlorogenic acid	65.11 ± 8.74 a	66.03 ± 6.15 a	50.25 ± 2.66 b	40.70 ± 1.68 b	***
Feruloylquinic acid derivative	27.80 ± 2.13 a	20.83 ± 1.46 bc	21.39 ± 0.86 b	18.02 ± 0.92 c	***
Ferulic acid hexoside derivative	25.40 ± 1.90 a	18.46 ± 1.58 c	21.90 ± 0.98 b	21.02 ± 1.55 bc	***
Caffeic acid hexoside	23.72 ± 2.18 a	17.74 ± 1.06 b	17.78 ± 1.68 b	14.72 ± 1.32 b	***
Chlorogenic acid	1167 ± 74.04 a	1135 ± 66.65 a	867.2 ± 49.74 b	819.2 ± 63.88 b	***
Ferulic acid hexoside	8.47 ± 0.54	8.60 ± 0.51	8.69 ± 0.98	8.38 ± 0.34	NS
Cryptochlorogenic acid	20.72 ± 1.58	22.43 ± 2.36	20.12 ± 1.87	18.59 ± 1.36	NS
5- <i>O</i> -caffeoylshikimic acid	9.90 ± 0.84	9.36 ± 0.56	9.24 ± 0.33	8.90 ± 0.75	NS
5- <i>O</i> -feruloylquinic acid	13.04 ± 0.89 a	9.83 ± 0.90 b	11.75 ± 1.20 ab	11.22 ± 1.16 ab	**
Dicaffeoylquinic acid	8.36 ± 0.96 a	7.80 ± 0.62 ab	8.06 ± 0.71 a	6.35 ± 0.36 b	**
Ellagic acid derivative	56.71 ± 3.34 a	52.33 ± 4.22 ab	48.25 ± 3.56 b	40.31 ± 3.07 c	***
Total phenolic acids	1427 ± 93.31 a	1368 ± 80.09 a	1085 ± 52.09 b	1007 ± 67.07 b	***
Procyanidin dimer	166.6 ± 9.88 b	207.2 ± 23.21 a	160.6 ± 8.26 b	141.9 ± 7.47 b	***
Epicatechin	25.29 ± 1.70 ab	27.91 ± 2.34 a	23.80 ± 1.45 b	22.46 ± 1.92 b	**
Total flavan-3-ols	191.9 ± 10.90 b	235.1 ± 25.45 a	184.4 ± 9.13 b	164.3 ± 9.09 b	***
Myricetin-3- <i>O</i> -galactoside	15.94 ± 0.43 ab	12.70 ± 0.84 c	15.00 ± 0.52 b	16.36 ± 0.70 a	***
Myricetin-3- <i>O</i> -glucoside	9.64 ± 1.21 ab	8.18 ± 0.83 b	10.73 ± 0.47 a	10.20 ± 1.03 a	*
Quercetin-3- <i>O</i> -rutinoside	21.90 ± 1.45 ab	19.09 ± 0.61 b	23.55 ± 2.15 a	19.26 ± 1.79 b	**
Quercetin-3- <i>O</i> -galactoside	12.16 ± 0.86 a	11.92 ± 1.13 a	11.68 ± 1.05 a	7.17 ± 0.58 b	***
Quercetin-3- <i>O</i> -rhamnoside	2.96 ± 0.29 ab	2.99 ± 0.23 ab	3.21 ± 0.35 a	2.45 ± 0.39 b	*
Kaempferol-3- <i>O</i> -rutinoside	1.51 ± 0.11	1.46 ± 0.27	1.82 ± 0.24	1.60 ± 0.21	NS
Isorhamnetin-3- <i>O</i> -rutinoside	4.07 ± 0.35 b	9.93 ± 0.34 b	4.91 ± 0.29 a	4.30 ± 0.26	**
Isorhamnetin-3- <i>O</i> -hexoside	9.08 ± 0.70 a	5.06 ± 0.46 c	7.36 ± 0.29 b	8.54 ± 0.62 a	***
Quercetin-3- <i>O</i> -xyloside	10.90 ± 0.43 a	10.00 ± 0.84 ab	11.16 ± 1.59 a	8.60 ± 0.50 b	*
Syringetin-3- <i>O</i> -glucoside	4.78 ± 0.46 b	3.99 ± 0.15 c	4.50 ± 0.52 b	6.82 ± 0.60 a	***
Quercetin-3- <i>O</i> -hexose malonate	9.42 ± 0.59 a	10.31 ± 1.84 a	10.87 ± 0.68 a	6.25 ± 0.13 b	***
Total flavonols	102.4 ± 5.61 ab	89.67 ± 6.70 c	104.8 ± 5.46 a	91.56 ± 5.59 bc	**
Delphinidin-3- <i>O</i> -galactoside	149.5 ± 10.44 a	165.9 ± 18.84 a	99.93 ± 2.76 b	68.94 ± 3.91 c	***
Cyanidin-3- <i>O</i> -galactoside	39.02 ± 3.41 a	44.06 ± 4.11 a	28.22 ± 2.66 b	18.59 ± 1.26 c	***
Delphinidin-3- <i>O</i> -arabinoside	118.1 ± 12.76 a	133.3 ± 11.69 a	85.40 ± 4.92 b	56.26 ± 3.21 c	***
Petunidin-3- <i>O</i> -galactoside	93.85 ± 5.18 a	83.44 ± 3.52 b	70.98 ± 4.77 c	53.26 ± 3.60 d	***
Petunidin-3- <i>O</i> -glucoside	38.42 ± 2.43 a	42.02 ± 3.48 a	32.75 ± 2.04 b	22.72 ± 2.05 c	***
Cyanidin-3- <i>O</i> -arabinoside	20.89 ± 1.85 a	22.85 ± 1.64 a	17.81 ± 1.16 b	12.35 ± 0.90 c	***
Malvidin-3- <i>O</i> -galactoside	2763 ± 116.2 a	1992 ± 79.11 b	1957 ± 72.29 b	1502 ± 60.61 c	***

Malvidin-3- <i>O</i> -glucoside	1045 ± 225.0 a	915.7 ± 134.2 a	736.6 ± 95.7 ab	534.2 ± 144.3 b	**
Malvidin-3- <i>O</i> -arabinoside	2203 ± 70.66 a	1599 ± 97.70 b	1599 ± 90.74 b	1388 ± 65.52 c	***
Malvidin-3-(6''-acetyl) galactoside	220.7 ± 20.01 a	200.1 ± 19.70 ab	167.2 ± 11.34 bc	134.6 ± 11.76 c	***
Malvidin-3-(6''-acetyl) glucoside	284.7 ± 15.55 a	227.4 ± 15.99 b	206.4 ± 13.63 bc	185.3 ± 2.75 c	***
Total anthocyanins	6977 ± 376.0 a	5427 ± 314.9 b	5001 ± 257.5 b	3976 ± 237.2 c	***
Total phenolics	8697 ± 483.3 a	7120 ± 307.7 b	6375 ± 275.3 c	5240 ± 279.2 d	***

Data are means with corresponding standard errors (4 replicates per storage duration). Different letters (a-d) indicate significant differences between storage durations (Tukey's test,  $\alpha < 0.05$ ; \*,  $p < 0.05$ ; \*\*,  $p < 0.01$ ; \*\*\*,  $p < 0.001$ ; NS, not significant).

Supplementary material Table S3: Individual phenolic compounds in blueberry fruit stored in modified atmosphere with 10 % CO<sub>2</sub> at 2 °C at each storage duration.

Phenolic compound	10 % CO <sub>2</sub> , 2 °C				
	Harvest	24 h	48 h	72 h	Significance
Neochlorogenic acid	65.11 ± 8.74 a	72.89 ± 5.43 a	45.98 ± 5.32 b	61.40 ± 6.73 a	***
Feruloylquinic acid derivative	27.80 ± 2.13 a	23.57 ± 1.10 b	22.49 ± 1.23 b	28.29 ± 1.66 a	***
Ferulic acid hexoside derivative	25.40 ± 1.90 ab	28.75 ± 2.31 a	18.54 ± 2.47 c	23.84 ± 0.95 b	***
Caffeic acid hexoside	23.72 ± 2.18 a	18.09 ± 2.22 b	20.86 ± 0.63 ab	23.82 ± 2.24 a	**
Chlorogenic acid	1167 ± 74.04 a	1186 ± 43.17 a	741.4 ± 42.02 c	1045 ± 33.68 b	***
Ferulic acid hexoside	8.47 ± 0.54 b	11.35 ± 0.86 a	7.17 ± 0.68 c	9.22 ± 0.16 b	***
Cryptochlorogenic acid	20.72 ± 1.58 bc	22.91 ± 1.98 ab	19.13 ± 1.74 c	24.84 ± 1.45 a	**
5- <i>O</i> -caffeoylshikimic acid	9.90 ± 0.84 b	9.03 ± 0.73 b	9.54 ± 1.03 b	12.24 ± 0.72 a	***
5- <i>O</i> -feruloylquinic acid	13.04 ± 0.89 b	11.39 ± 1.00 b	12.38 ± 1.27 b	15.72 ± 0.86 a	***
Dicafeoylquinic acid	8.36 ± 0.96 b	9.04 ± 0.92 ab	8.67 ± 0.43 ab	10.17 ± 0.88 a	*
Ellagic acid derivative	56.71 ± 3.34 ab	51.28 ± 4.12 b	41.08 ± 3.81 c	61.89 ± 2.93 a	***
Total phenolic acids	1427 ± 93.31 a	1445 ± 47.27 a	947.2 ± 56.51 b	1316 ± 50.32 a	***
Procyanidin dimer	166.6 ± 9.88 c	195.0 ± 13.18 b	160.5 ± 10.34 c	224.9 ± 9.98 a	***
Epicatechin	25.29 ± 1.70 b	29.89 ± 2.01 a	25.51 ± 1.61 b	32.71 ± 0.53 a	***
Total flavan-3-ols	191.9 ± 10.90 c	224.9 ± 15.04 b	186.1 ± 11.91 c	257.6 ± 10.33 a	***
Myricetin-3- <i>O</i> -galactoside	15.94 ± 0.43 c	13.39 ± 0.95 d	17.51 ± 0.66 b	18.92 ± 0.08 a	***
Myricetin-3- <i>O</i> -glucoside	9.64 ± 1.21 b	9.73 ± 1.10 b	11.36 ± 0.87 b	14.00 ± 0.64 a	***
Quercetin-3- <i>O</i> -rutinoside	21.90 ± 1.45 b	22.90 ± 1.72 b	20.37 ± 1.81 b	29.29 ± 1.03 a	***
Quercetin-3- <i>O</i> -galactoside	12.16 ± 0.86 a	12.41 ± 1.63 a	7.99 ± 1.01 b	13.65 ± 0.44 a	***
Quercetin-3- <i>O</i> -rhamnoside	2.96 ± 0.29 bc	3.22 ± 0.31 b	2.63 ± 0.24 c	3.79 ± 0.16 a	***
Kaempferol-3- <i>O</i> -rutinoside	1.51 ± 0.11 b	1.84 ± 0.28 ab	1.67 ± 0.36 b	2.28 ± 0.16 a	**
Isorhamnetin-3- <i>O</i> -rutinoside	4.07 ± 0.35 c	4.95 ± 0.18 b	4.50 ± 0.28 bc	6.14 ± 0.42 a	***
Isorhamnetin-3- <i>O</i> -hexoside	9.08 ± 0.70 b	7.53 ± 0.27 c	9.56 ± 0.71 b	11.55 ± 0.55 a	***
Quercetin-3- <i>O</i> -xyloside	10.90 ± 0.43 b	11.03 ± 0.96 b	9.00 ± 0.90 c	14.40 ± 1.15 a	***
Syringetin-3- <i>O</i> -glucoside	4.78 ± 0.46 b	4.39 ± 0.41 b	4.67 ± 0.37 b	7.10 ± 0.22 a	***
Quercetin-3- <i>O</i> -hexose malonate	9.42 ± 0.59 ab	11.14 ± 1.49 a	7.33 ± 0.75 b	11.29 ± 1.47 a	**
Total flavonols	102.4 ± 5.61 b	102.5 ± 7.78 b	96.59 ± 6.82 b	132.4 ± 5.45 a	***
Delphinidin-3- <i>O</i> -galactoside	149.5 ± 10.44 a	137.1 ± 9.09 a	105.9 ± 7.35 b	132.9 ± 14.48 a	***
Cyanidin-3- <i>O</i> -galactoside	39.02 ± 3.41 ab	40.39 ± 2.16 a	25.23 ± 1.38 c	34.23 ± 2.48 b	***
Delphinidin-3- <i>O</i> -arabinoside	118.1 ± 12.76 a	122.2 ± 7.44 a	76.37 ± 5.26 b	103.6 ± 1.55 a	***
Petunidin-3- <i>O</i> -galactoside	93.85 ± 5.18 ab	79.87 ± 6.92 c	81.40 ± 3.62 bc	97.92 ± 8.94 a	**
Petunidin-3- <i>O</i> -glucoside	38.42 ± 2.43 ab	34.71 ± 3.05 bc	31.24 ± 1.59 c	42.46 ± 3.25 a	***

Cyanidin-3- <i>O</i> -arabinoside	20.89 ± 1.85 ab	18.87 ± 1.81 bc	16.98 ± 0.66 c	23.09 ± 0.87 a	***
Malvidin-3- <i>O</i> -galactoside	2763 ± 116.2 a	2467 ± 98.24 b	2157 ± 56.44 c	2619 ± 28.41 ab	***
Malvidin-3- <i>O</i> -glucoside	1045 ± 225.0	753.2 ± 204.1	888.4 ± 164.5	1004 ± 141.1	NS
Malvidin-3- <i>O</i> -arabinoside	2203 ± 70.66 a	2191 ± 152.3 a	1778 ± 52.37 b	2148 ± 102.4 a	***
Malvidin-3-(6''-acetyl) galactoside	220.7 ± 20.01 a	171.9 ± 12.55 b	203.3 ± 23.29 ab	220.8 ± 20.86 a	*
Malvidin-3-(6''-acetyl) glucoside	284.7 ± 15.55 a	206.6 ± 13.09 b	276.5 ± 12.30 a	275.3 ± 15.02 a	***
Total anthocyanins	6977 ± 376.0 a	6223 ± 449.0 bc	5640 ± 218.3 c	6701 ± 330.7 ab	***
Total phenolics	8697 ± 483.3 a	7995 ± 501.2 a	6870 ± 283.2 b	8407 ± 384.2 a	***

Data are means with corresponding standard errors (4 replicates per storage duration). Different letters (a-c) indicate significant differences between storage durations (Tukey's test,  $\alpha < 0.05$ ; \*,  $p < 0.05$ ; \*\*,  $p < 0.01$ ; \*\*\*,  $p < 0.001$ ; NS, not significant).

Supplementary material Table S4: Individual phenolic compounds in blueberry fruit stored in modified atmosphere with 100 % CO<sub>2</sub> at 2 °C at each storage duration.

Phenolic compound	100 % CO <sub>2</sub> , 2 °C				
	Harvest	24 h	48 h	72 h	Significance
Neochlorogenic acid	65.11 ± 8.73 ab	78.98 ± 6.83 a	50.67 ± 3.84 b	57.07 ± 7.70 b	***
Feruloylquinic acid derivative	27.80 ± 2.13 a	26.59 ± 1.79 a	20.39 ± 1.99 b	22.55 ± 1.05 b	***
Ferulic acid hexoside derivative	25.40 ± 1.90 a	25.81 ± 2.23 a	20.92 ± 1.15 b	22.42 ± 1.79 ab	**
Caffeic acid hexoside	23.72 ± 2.18 a	19.52 ± 0.79 b	16.35 ± 1.51 b	18.49 ± 1.33 b	***
Chlorogenic acid	1167 ± 74 b	1355 ± 69.31 a	871.3 ± 68.07 c	956.3 ± 67.09 c	***
Ferulic acid hexoside	8.47 ± 0.54 c	11.33 ± 1.05 a	9.24 ± 0.73 bc	10.05 ± 0.54 ab	***
Cryptochlorogenic acid	20.72 ± 1.58 b	27.77 ± 1.88 a	20.27 ± 2.02 b	21.66 ± 0.82 b	***
5- <i>O</i> -caffeoylshikimic acid	9.90 ± 0.84 b	12.93 ± 0.79 a	8.39 ± 0.92 b	9.33 ± 0.85 b	***
5- <i>O</i> -feruloylquinic acid	13.04 ± 0.89 ab	14.13 ± 1.24 a	11.45 ± 1.26 b	13.14 ± 1.00 ab	*
Dicaffeoylquinic acid	8.36 ± 0.96 b	10.27 ± 0.91 a	7.49 ± 0.66 b	7.91 ± 0.38 b	**
Ellagic acid derivative	56.71 ± 3.34 bc	70.31 ± 5.77 a	50.06 ± 3.37 c	59.39 ± 4.59 b	***
Total phenolic acids	1427 ± 93.3 b	1652 ± 87.19 a	1087 ± 79.5 c	1198 ± 82.5 c	***
Procyanidin dimer	166.6 ± 9.9 c	236.6 ± 17.69 a	150.8 ± 14.23 c	195.8 ± 8.66 b	***
Epicatechin	25.29 ± 1.70 c	33.74 ± 1.16 a	22.12 ± 2.02 c	29.21 ± 1.63 b	***
Total flavan-3-ols	191.8 ± 10.90 c	270.3 ± 18.07 a	172.9 ± 16.07 c	225.0 ± 9.25 b	***
Myricetin-3- <i>O</i> -galactoside	15.94 ± 0.43 a	16.95 ± 1.17 a	15.17 ± 1.16 ab	13.26 ± 1.52 b	**
Myricetin-3- <i>O</i> -glucoside	9.64 ± 1.21	12.14 ± 1.36	10.39 ± 1.39	11.68 ± 1.15	NS
Quercetin-3- <i>O</i> -rutinoside	21.90 ± 1.45 b	28.22 ± 1.84 a	21.94 ± 1.88 b	26.05 ± 0.94 a	***
Quercetin-3- <i>O</i> -galactoside	12.16 ± 0.86 b	15.52 ± 1.62 a	12.04 ± 1.19 b	13.99 ± 0.43 ab	**
Quercetin-3- <i>O</i> -rhamnoside	2.96 ± 0.29 c	4.06 ± 0.30 a	3.10 ± 0.15 bc	3.54 ± 0.29 ab	***
Kaempferol-3- <i>O</i> -rutinoside	1.51 ± 0.11 c	2.36 ± 0.27 a	1.65 ± 0.21 bc	2.16 ± 0.33 ab	***
Isorhamnetin-3- <i>O</i> -rutinoside	4.07 ± 0.35 c	6.37 ± 0.39 a	4.75 ± 0.26 b	5.81 ± 0.18 a	***
Isorhamnetin-3- <i>O</i> -hexoside	9.08 ± 0.70	9.61 ± 1.28	7.86 ± 0.70	8.66 ± 0.74	NS
Quercetin-3- <i>O</i> -xyloside	10.90 ± 0.43 b	15.41 ± 0.93 a	8.68 ± 0.97 c	14.14 ± 1.10 a	***
Syringetin-3- <i>O</i> -glucoside	4.78 ± 0.46 c	7.17 ± 0.54 a	5.55 ± 0.45 bc	6.65 ± 1.08 ab	**
Quercetin-3- <i>O</i> -hexose malonate	9.42 ± 0.59 b	14.83 ± 1.20 a	8.73 ± 1.08 b	12.79 ± 1.11 a	***
Total flavonols	102.4 ± 5.61 b	132.6 ± 8.12 a	99.87 ± 6.45 b	118.7 ± 7.26 a	***
Delphinidin-3- <i>O</i> -galactoside	149.4 ± 10.4 a	165.8 ± 12.6 a	89.81 ± 7.20 b	114.1 ± 20.86 b	***
Cyanidin-3- <i>O</i> -galactoside	39.02 ± 3.41 b	48.94 ± 3.62 a	26.85 ± 2.78 c	32.15 ± 2.59 c	***
Delphinidin-3- <i>O</i> -arabinoside	118.1 ± 12.76 b	148.1 ± 3.89 a	81.27 ± 7.08 c	97.30 ± 10.34 c	***
Petunidin-3- <i>O</i> -galactoside	93.85 ± 5.18 a	85.83 ± 8.57 ab	69.65 ± 3.75 c	79.04 ± 2.49 bc	***
Petunidin-3- <i>O</i> -glucoside	38.42 ± 2.43 ab	42.86 ± 3.08 a	29.16 ± 1.45 c	36.27 ± 2.84 b	***

Cyanidin-3- <i>O</i> -arabinoside	20.89 ± 1.85 ab	23.31 ± 0.89 a	15.86 ± 1.21 c	19.72 ± 0.83 b	***
Malvidin-3- <i>O</i> -galactoside	2763 ± 116.2 a	2335 ± 154.8 b	1929 ± 93.4 c	2137 ± 3.72 bc	***
Malvidin-3- <i>O</i> -glucoside	1045 ± 225.0	924.0 ± 229.8	664.3 ± 113.5	765.4 ± 167.0	NS
Malvidin-3- <i>O</i> -arabinoside	2203 ± 70.66 a	2043 ± 34.15 b	1542 ± 69.9 c	1912 ± 83.75 b	***
Malvidin-3-(6''-acetyl) galactoside	220.7 ± 20.01 a	190.2 ± 9.90 b	149.7 ± 7.68 c	171.6 ± 7.00 bc	***
Malvidin-3-(6''-acetyl) glucoside	284.7 ± 15.55 a	229.3 ± 16.81 b	192.8 ± 13.78 c	210.8 ± 14.31 bc	***
Total anthocyanins	6977 ± 376 a	6236 ± 280.6 b	4791 ± 218.8 d	5575 ± 285.7 c	***
Total phenolics	8697 ± 483.3 a	8292 ± 385.0 a	6150 ± 307.2 c	7117 ± 374.0 b	***

Data are means with corresponding standard errors (4 replicates per storage duration). Different letters (a-d) indicate significant differences between storage durations (Tukey's test,  $\alpha < 0.05$ ; \*,  $p < 0.05$ ; \*\*,  $p < 0.01$ ; \*\*\*,  $p < 0.001$ ; NS, not significant).



Supplementary material Table S5: The results of one-way analysis of variance for individual phenolic compound at each storage duration.

Phenolic compound	Significance 24 h	Significance 48 h	Significance 72 h
Neochlorogenic acid	NS	***	***
Feruloylquinic acid derivative	**	***	***
Ferulic acid hexoside derivative	***	***	***
Caffeic acid hexoside	NS	***	***
Chlorogenic acid	**	***	**
Ferulic acid hexoside	**	***	***
Cryptochlorogenic acid	**	***	***
5- <i>O</i> -caffeoylshikimic acid	***	***	***
5- <i>O</i> -feruloylquinic acid	***	***	***
Dicaffeoylquinic acid	*	***	***
Ellagic acid derivative	***	***	***
Total phenolic acids	**	***	***
Procyanidin dimer	*	***	***
Epicatechin	*	***	***
Total flavan-3-ols	*	***	***
Myricetin-3- <i>O</i> -galactoside	***	***	***
Myricetin-3- <i>O</i> -glucoside	**	***	***
Quercetin-3- <i>O</i> -rutinoside	***	***	***
Quercetin-3- <i>O</i> -galactoside	*	***	***
Quercetin-3- <i>O</i> -rhamnoside	***	***	***
Kaempferol-3- <i>O</i> -rutinoside	***	***	***
Isorhamnetin-3- <i>O</i> -rutinoside	***	***	***
Isorhamnetin-3- <i>O</i> -hexoside	***	***	***
Quercetin-3- <i>O</i> -xyloside	***	***	***
Syringetin-3- <i>O</i> -glucoside	***	***	NS
Quercetin-3- <i>O</i> -hexose malonate	**	***	***
Total flavonols	***	***	***
Delphinidin-3- <i>O</i> -galactoside	NS	***	***
Cyanidin-3- <i>O</i> -galactoside	*	***	***
Delphinidin-3- <i>O</i> -arabinoside	*	***	***
Petunidin-3- <i>O</i> -galactoside	NS	***	***
Petunidin-3- <i>O</i> -glucoside	*	***	***
Cyanidin-3- <i>O</i> -arabinoside	**	***	***
Malvidin-3- <i>O</i> -galactoside	***	***	***
Malvidin-3- <i>O</i> -glucoside	NS	*	***
Malvidin-3- <i>O</i> -arabinoside	***	***	***
Malvidin-3-(6''-acetyl) galactoside	NS	***	***
Malvidin-3-(6''-acetyl) glucoside	NS	***	***
Total anthocyanins	*	***	***
Total phenolics	*	***	***

Significant differences were determined via Tukey's test ( $\alpha < 0.05$ ). \*,  $p < 0.05$ ; \*\*,  $p < 0.01$ ;

\*\*\*,  $p < 0.001$ ; NS, not significant.