

Supplementary Table S1. Weight and total sugars and organic acids of blueberry fruit for the air control and the controlled atmospheres of 5 % CO₂, 5 % O₂, 90 % N₂ (5 % CO₂), 15 % CO₂, 5 % O₂, 80 % N₂ (15 % CO₂), and 25 % CO₂, 5 % O₂, 70 % N₂ (25 % CO₂), according to length of storage.

Condition	Storage time (days)	Weight (g)	Total sugars (mg/g FW)	Total organic acids (mg/g FW)	Total sugars: organic acids ratio
Air control	0	100.0 ±0.0 a	95.32 ±5.52 a	10.25 ± 0.12 a	9.29 ± 0.45 a
	17	93.82 ±0.34 b, C	63.27 ±7.10 b, C	7.99 ± 0.35 c, C	7.97 ± 0.78 b, BC
	30	93.04 ±0.17 c, AB	61.50 ±10.22 b, C	7.57 ± 0.40 c, C	8.16 ± 1.15 ab, B
	44	92.84 ±0.46 cd, A	67.02 ±8.49 b, B	8.65 ± 0.59 b, A	7.79 ± 0.90 b, C
	62	92.32 ±0.51 d, A	65.96 ±8.78 b, C	9.13 ± 0.43 b	7.32 ± 0.99 b, C
Significance		***	***	***	*
5 % CO ₂	0	100.0 ±0.0 a	99.49 ±3.26 a	10.14 ± 0.17 a	9.81 ± 0.34 a
	17	95.24 ±0.60 b, B	73.61 ±5.10 b, B	10.05 ± 0.48 a, A	7.42 ± 0.83 b, C
	30	93.22 ±0.65 c, AB	73.44 ±4.68 b, B	8.23 ± 0.15 c, B	9.03 ± 1.20 a, AB
	44	93.03 ±0.11 c, A	70.16 ±2.18 b, B	9.19 ± 0.45 b, A	7.64 ± 0.30 b, C
	62	93.02 ±0.32 c, A	66.97 ±5.34 b, C	8.84 ± 0.36 b	7.59 ± 0.28 b, BC
Significance		***	***	***	***
15 % CO ₂	0	100.0 ±0.0 a	96.51 ±2.65 a	10.42 ± 0.17 a	9.27 ± 0.39 ab
	17	93.54 ±0.44 b, C	78.10 ±5.85 bc, B	8.90 ± 0.57 b, B	8.78 ± 0.33 ab, B
	30	92.50 ±0.70 c, B	70.07 ±6.93 c, BC	8.56 ± 0.26 b, B	8.19 ± 0.15 b, B
	44	90.20 ±0.29 d, B	84.14 ±10.10 b, A	8.77 ± 0.71 b, A	9.75 ± 1.06 a, B
	62	90.15 ±0.43 d, B	77.14 ±3.41 bc, B	9.10 ± 0.79 b	8.63 ± 1.36 b, AB
Significance		***	***	***	*
25 % CO ₂	0	100.0 ±0.0 a	100.34 ±0.91 a	10.39 ± 0.07 a	9.66 ± 0.11 b
	17	96.49 ±0.33 b, A	86.71 ±5.11 b, A	8.83 ± 0.60 c, B	9.83 ± 0.29 b, A
	30	93.71 ±0.37 c, A	94.80 ±4.74 ab, A	9.56 ± 0.63 b, A	9.94 ± 0.60 b, A
	44	92.86 ±0.25 d, A	87.76 ±7.30 b, A	7.77 ± 0.44 d, B	11.32 ± 0.49 a, A
	62	92.69 ±0.51 d, A	90.93 ±2.03 ab, A	9.31 ± 0.36 bc	9.77 ± 0.52 b, A
Significance		***	**	***	***
Significance	17	***	***	***	***
	30	*	***	***	*
	44	***	**	**	***
	62	***	***	NS	**

Data are means ±standard errors (five replicates per condition)

Different lowercase letters (a-d) indicate statistically significant differences between storage durations within each CO₂ condition; different uppercase letters (A-C) indicate statistically significant differences between CO₂ conditions within each storage duration (Duncan tests, α <0.05)

*, p <0.05; **, p <0.01; ***, p <0.001

Supplementary Table S2. Hydroxycinnamic acids, flavan-3-ols, flavonols, anthocyanins and total phenolics of blueberry fruit for the air control and the controlled atmospheres of 5 % CO₂, 5 % O₂, 90 % N₂ (5 % CO₂), 15 % CO₂, 5 % O₂, 80 % N₂ (15 % CO₂), and 25 % CO₂, 5 % O₂, 70 % N₂ (25 % CO₂), according to length of storage.

Condition	Storage time (days)	Phenolics content (mg/kg FW)				
		Hydroxycinnamic acids	Flavan-3-ols	Flavonols	Anthocyanins	Total
Air control	0	354.3 ± 6.94 e	322.8 ± 12.42 a	252.0 ± 10.67 ab	5853 ± 103.0 ab	6782 ± 113.8 ab
	17	406.1 ± 12.82 d, A	268.2 ± 15.17 b, A	240.5 ± 7.92 bc, A	5108 ± 172.0 c, A	6023 ± 173.5 c, A
	30	453.0 ± 12.82 b, A	310.7 ± 33.70 a, A	254.3 ± 12.87 a, A	5869 ± 145.8 a, A	6887 ± 162.4 a, A
	44	478.2 ± 5.66 a, A	257.4 ± 17.11 b, A	262.3 ± 8.80 a, A	5650 ± 215.2 b, A	6648 ± 237.3 b, A
	62	435.6 ± 9.74 c, A	228.4 ± 19.30 c, B	235.4 ± 8.37 c, B	5062 ± 116.5 c, B	5961 ± 134.9 c, B
Significance		***	***	**	***	***
5 % CO ₂	0	350.4 ± 6.88 d	351.9 ± 9.83 a	246.3 ± 8.86 b	5650 ± 63.05 bc	6598 ± 77.52 bc
	17	353.8 ± 6.03 d, B	235.9 ± 11.32 c, B	225.4 ± 10.74 c, B	5039 ± 154.2 d, A	5854 ± 175.4 d, A
	30	366.9 ± 7.70 c, B	275.8 ± 13.71 b, B	247.9 ± 10.97 b, A	5952 ± 65.79 a, A	6843 ± 70.03 a, A
	44	425.1 ± 3.94 a, B	265.7 ± 12.18 b, A	245.4 ± 7.14 b, B	5778 ± 55.60 b, A	6714 ± 69.51 ab, A
	62	413.5 ± 9.50 b, B	262.4 ± 12.18 b, A	266.3 ± 7.48 a, A	5535 ± 135.3 c, A	6477 ± 154.2 c, A
Significance		***	***	***	***	***
15 % CO ₂	0	360.7 ± 3.03 a	332.1 ± 14.45 a	260.0 ± 11.69 a	5716 ± 188.2 a	6669 ± 213.6 a
	17	341.1 ± 9.02 b, C	228.5 ± 6.35 b, B	171.4 ± 11.01 c, C	4412 ± 211.2 b, B	5153 ± 218.5 b, B
	30	297.2 ± 7.45 c, D	172.0 ± 6.69 c, D	162.0 ± 6.64 c, C	2644 ± 132.5 e, C	3275 ± 129.2 e, C
	44	368.9 ± 11.8 a, C	223.0 ± 10.05 b, B	192.1 ± 7.89 b, C	3666 ± 140.6 d, B	4450 ± 138.3 d, B
	62	340.7 ± 6.65 b, C	214.5 ± 14.67 b, B	199.5 ± 7.82 b, C	3960 ± 98.72 c, C	4715 ± 116.4 c, C

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Significance		***	***	***	***	***
25 % CO ₂	0	369.0 ± 7.17 a	349.4 ± 12.84 a	255.3 ± 8.07 a	6049 ± 68.24 a	7023 ± 72.66 a
	17	347.5 ± 8.48 b, BC	226.7 ± 28.11 b, B	181.9 ± 6.67 b, C	4083 ± 137.4 b, C	4839 ± 169.9 b, C
	30	330.6 ± 6.84 c, C	232.6 ± 21.51 b, C	180.4 ± 12.37 b, B	3693 ± 120.9 c, B	4437 ± 149.6 c, B
	44	323.7 ± 7.90 c, D	225.3 ± 31.47 b, D	178.1 ± 7.22 b, D	3461 ± 52.45 d, C	4189 ± 81.39 d, C
	62	275.4 ± 6.63 d, D	225.0 ± 9.65 b, B	169.7 ± 9.65 b, D	3474 ± 119.5 d, D	4145 ± 127.6 d, D
Significance		***	***	***	***	***
Significance	17	***	**	***	***	***
	30	***	***	***	***	***
	44	***	**	***	***	***
	62	***	***	***	***	***

Data are means ±standard errors (five replicates per condition)

Different lowercase letters (a-d) indicate statistically significant differences between storage durations within each CO₂ condition; different uppercase letters (A-C) indicate statistically significant differences between CO₂ conditions within each storage duration (Duncan tests, α <0.05)

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