

Supplementary Material Table S1: Blueberry fruit individual phenolics contents for the ‘Duke’ cultivar grown under the high tunnel and hail net conditions in the ridge and pots.

Phenolics [mg (100 g) ⁻¹]	Equivalents measure	High tunnel		Hail net		Sign.
	(where different)	Ridge	Pots	Ridge	Pots	(across treatments)
Phenolic acids						
Ellagic acid derivative		14.01 ± 0.94 b	13.53 ± 1.14 bc	12.48 ± 0.94 c	19.31 ± 1.25 a	***
Caffeic acid derivative 1		0.13 ± 0.01 bc	0.12 ± 0.03 c	0.15 ± 0.01 b	0.22 ± 0.01 a	***
Caffeic acid derivative 2		0.59 ± 0.10 d	1.26 ± 0.09 c	2.55 ± 0.22 b	3.41 ± 0.29 a	***
3-Caffeoylquinic acid		1.68 ± 0.10 d	2.67 ± 0.16 c	4.71 ± 0.08 b	5.65 ± 1.05 a	***
4-Caffeoylquinic acid		2.51 ± 0.13 b	2.42 ± 0.09 b	1.89 ± 0.12 c	3.09 ± 0.20 a	***
5-Caffeoylquinic acid		40.63 ± 2.45 b	36.62 ± 2.38 c	25.28 ± 2.11 d	55.86 ± 1.29 a	***
Caffeoylquinic acid dimer	Chlorogenic acid	0.64 ± 0.12 b	0.63 ± 0.17 b	1.19 ± 0.10 a	1.29 ± 0.29 a	***
Di-caffeoylquinic acid	Chlorogenic acid	0.20 ± 0.02 bc	0.17 ± 0.10 c	0.28 ± 0.02 b	0.39 ± 0.05 a	***
5-Feruloylquinic acid	Ferulic acid	0.24 ± 0.02 ab	0.24 ± 0.03 ab	0.23 ± 0.01 b	0.26 ± 0.02 a	*
Ferulic acid derivative		1.66 ± 0.14 d	2.02 ± 0.08 c	3.33 ± 0.20 b	3.55 ± 0.12 a	***
Feruloyl-glucoside	Ferulic acid	0.06 ± 0.02 c	0.05 ± 0.02 c	0.25 ± 0.02 a	0.23 ± 0.01 b	***
Total phenolic acids		62.35 ± 4.05 b	59.62 ± 4.29 b	52.34 ± 3.83 c	93.28 ± 4.58 a	***
Sign. (tunnel vs net)		NS				
Sign. (ridge vs pots)		**				
Flavan-3-ols						
Procyanidin B1		10.55 ± 0.70 c	14.51 ± 0.86 b	22.76 ± 1.11 a	23.11 ± 1.15 a	***
Procyanidin B2	Procyanidin B1	19.39 ± 1.28 c	24.34 ± 2.02 b	25.10 ± 0.67 b	53.93 ± 1.86 a	***
Catechin		26.49 ± 1.29 b	27.67 ± 1.19 b	27.05 ± 1.75 b	30.77 ± 1.09 a	***
Epicatechin		2.24 ± 0.38 b	2.27 ± 0.20 b	2.71 ± 0.31 b	3.51 ± 0.45 a	***

Total flavan-3-ols		58.67 ± 3.65 d	68.79 ± 4.27 c	77.61 ± 3.84 b	111.32 ± 4.55 a	***
Sign. (tunnel vs net)				***		
Sign. (ridge vs pots)				*		
Flavonols						
Myricetin-3- <i>O</i> -pentoside	Myricetin-3- <i>O</i> -rhamnoside	0.12 ± 0.02 c	0.13 ± 0.03 c	0.56 ± 0.04 b	0.62 ± 0.05 a	***
Myricetin-3- <i>O</i> -hexoside	Myricetin-3- <i>O</i> -rhamnoside	0.36 ± 0.02 c	0.57 ± 0.06 c	1.76 ± 0.36 b	2.98 ± 0.22 a	***
Laricitrin-3- <i>O</i> -glucoside	Kaempferol-3- <i>O</i> -glucoside	0.98 ± 0.04 c	0.95 ± 0.19 c	6.84 ± 0.80 b	10.24 ± 0.39 a	***
Quercetin-3- <i>O</i> -rutinoside		0.08 ± 0.01 c	0.06 ± 0.01 c	0.18 ± 0.02 a	0.15 ± 0.02 b	***
Quercetin-3- <i>O</i> -galactoside		0.95 ± 0.03 c	1.18 ± 0.12 c	6.89 ± 0.34 b	10.01 ± 1.13 a	***
Quercetin-3- <i>O</i> -glucuronide		0.08 ± 0.01 c	0.10 ± 0.01 c	0.30 ± 0.02 b	0.35 ± 0.03 a	***
Quercetin-3- <i>O</i> -arabinopyranoside		0.22 ± 0.02 c	0.17 ± 0.05 c	1.41 ± 0.10 b	2.12 ± 0.12 a	***
Quercetin-3- <i>O</i> -rhamnoside		0.07 ± 0.01 c	0.05 ± 0.02 c	0.37 ± 0.01 b	0.51 ± 0.03 a	***
Isorhamnetin-3- <i>O</i> -galactoside	Isorhamnetin-3- <i>O</i> -glucoside	1.26 ± 0.07 c	1.43 ± 0.08 bc	1.51 ± 0.15 b	2.10 ± 0.26 a	***
Isorhamnetin-3- <i>O</i> -rutinoside	Isorhamnetin-3- <i>O</i> -glucoside	0.17 ± 0.02 b	0.17 ± 0.06 b	0.72 ± 0.10 a	0.79 ± 0.08 a	***
Syringetin-3- <i>O</i> -glucoside	Myricetin-3- <i>O</i> -rhamnoside	0.64 ± 0.05 b	0.55 ± 0.22 b	2.32 ± 0.45 a	2.69 ± 0.26 a	***
Total flavonols		4.90 ± 0.3 c	5.35 ± 0.85 c	22.87 ± 2.39 b	31.91 ± 2.59 a	***
Sign. (tunnel vs net)				***		
Sign. (ridge vs pots)				NS		
Anthocyanins						
Delphinidin-3- <i>O</i> -galactoside	Delphinidin-3- <i>O</i> -glucoside	3.79 ± 0.45	4.08 ± 1.26	4.21 ± 0.54	4.63 ± 0.27	NS
Delphinidin-3- <i>O</i> -glucoside		32.03 ± 2.62 d	50.86 ± 3.33 c	107.7 ± 3.26 b	136.7 ± 3.00 a	***
Delphinidin-3- <i>O</i> -arabinoside	Delphinidin-3- <i>O</i> -glucoside	12.68 ± 1.08 d	22.76 ± 1.89 c	39.27 ± 1.80 b	64.05 ± 2.43 a	***
Cyanidin-3- <i>O</i> -galactoside		5.46 ± 0.62 d	7.12 ± 1.56 c	16.92 ± 1.05 b	28.91 ± 1.44 a	***
Cyanidin-3- <i>O</i> -arabinoside	Cyanidin-3- <i>O</i> -glucoside	0.61 ± 0.10 c	0.54 ± 0.23 c	1.84 ± 0.26 b	2.31 ± 0.24 a	***
Petunidin-3- <i>O</i> -galactoside		112.0 ± 10.14 d	196.7 ± 9.24 c	385.6 ± 11.0 b	484.8 ± 9.47 a	***
Petunidin-3- <i>O</i> -arabinoside		16.14 ± 2.78 c	16.73 ± 0.33 c	40.81 ± 0.94 b	63.59 ± 1.62 a	***

Peonidin-3- <i>O</i> -galactoside	Peonidin-3- <i>O</i> -glucoside	1.54 ± 0.26 c	1.66 ± 0.37 c	4.59 ± 0.93 b	6.08 ± 0.95 a	***
Peonidin-pentose	Peonidin-3- <i>O</i> -glucoside	2.18 ± 0.54 b	2.86 ± 1.01 b	7.75 ± 1.87 a	9.02 ± 1.61 a	***
Malvidin-3- <i>O</i> -hexoside	Malvidin-3- <i>O</i> -glucoside	39.36 ± 3.09 d	64.48 ± 2.04 c	132.6 ± 4.73 b	156.7 ± 9.37 a	***
Malvidin-3- <i>O</i> -arabinoside	Malvidin-3- <i>O</i> -glucoside	3.37 ± 0.64 c	4.90 ± 0.47 b	9.83 ± 1.01 a	11.20 ± 1.87 a	***
Malvidin-3- <i>O</i> -xyloside	Malvidin-3- <i>O</i> -glucoside	15.95 ± 2.97 d	24.38 ± 3.65 c	40.82 ± 5.40 b	65.98 ± 6.40 a	***
Malvidin-3-(6''-acetyl) galactoside	Malvidin-3- <i>O</i> -glucoside	2.23 ± 0.24 b	4.09 ± 0.96 a	3.61 ± 0.92 a	4.14 ± 0.71 a	**
Malvidin-3-(6''-acetyl) glucoside	Malvidin-3- <i>O</i> -glucoside	1.72 ± 0.30 c	2.29 ± 0.66 bc	2.78 ± 0.50 ab	3.26 ± 0.36 a	***
Total anthocyanins		249.07 ± 25.83 d	403.45 ± 27.00 c	798.13 ± 34.21 b	1041.34 ± 39.74 a	***
Sign. (tunnel vs net)				***		
Sign. (ridge vs pots)				NS		

Data are means ± standard errors of 5 replicates

Sign. (tunnel vs net), significance between protected environments (Duncan tests; $\alpha < 0.05$)

Sign. (ridge vs pots), significance between planting systems (Duncan tests; $\alpha < 0.05$)

Data with different lowercase letters within rows are significantly differences (Duncan tests; $\alpha < 0.05$)

NS, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$

Supplementary Material Table S2. Blueberry fruit individual phenolics contents for the ‘Aurora’ cultivar grown under the high tunnel and hail net conditions in the ridge and pots.

Phenolics [mg (100 g) ⁻¹]	Equivalents measure	High tunnel		Hail net		Sign.
	(where different)	Ridge	Pots	Ridge	Pots	(across treatments)
Phenolic acids						
Ellagic acid derivative		55.78 ± 1.38 b	40.06 ± 1.20 d	45.75 ± 1.83 c	64.90 ± 1.69 a	***
Caffeic acid derivative 1		0.57 ± 0.07 bc	0.46 ± 0.07 c	0.60 ± 0.11 b	0.74 ± 0.11 a	**
Caffeic acid derivative 2		9.56 ± 0.83 a	9.07 ± 0.72 ab	9.23 ± 0.70 ab	8.29 ± 0.60 b	*
4-Caffeoylquinic acid		4.22 ± 0.31 a	4.20 ± 0.47 a	3.72 ± 0.42 ab	3.52 ± 0.55 b	*
5-Caffeoylquinic acid		142.9 ± 2.89 a	117.1 ± 8.86 b	104.0 ± 6.42 c	87.74 ± 5.59 d	***
Caffeoylquinic acid dimer	Chlorogenic acid	1.59 ± 0.24 b	2.70 ± 0.23 a	1.35 ± 0.10 bc	1.14 ± 0.12 c	***
5-Feruloylquinic acid	Ferulic acid	0.26 ± 0.03 b	0.33 ± 0.05 a	0.23 ± 0.04 bc	0.20 ± 0.01 c	***
Ferulic acid derivative		5.16 ± 0.55 ab	5.87 ± 0.52 a	5.32 ± 0.43 ab	5.05 ± 0.63 b	*
Total phenolic acids		220.03 ± 6.3 a	179.81 ± 12.12 b	170.23 ± 10.05 c	171.59 ± 9.3 c	**
Sign. (tunnel vs net)		***				
Sign. (ridge vs pots)		*				
Flavan-3-ols						
Procyanidin B1		50.84 ± 1.95 a	49.76 ± 1.05 ab	47.77 ± 1.90 b	43.41 ± 2.26 c	***
Procyanidin B2	Procyanidin B1	29.06 ± 1.57 b	34.38 ± 1.09 a	29.20 ± 3.38 b	28.43 ± 2.47 b	**
Catechin		42.57 ± 1.49 b	45.58 ± 1.48 a	36.23 ± 1.63 c	33.73 ± 1.20 d	***
Epicatechin		2.98 ± 0.39	2.80 ± 0.22	2.86 ± 0.35	2.76 ± 0.36	NS
Total flavan-3-ols		125.45 ± 5.4 b	132.51 ± 3.84 a	116.07 ± 7.26 c	108.33 ± 6.29 d	***
Sign. (tunnel vs net)		***				

Sign. (ridge vs pots)			NS			
Flavonols						
Myricetin-3- <i>O</i> -pentoside	Myricetin-3- <i>O</i> -rhamnoside	0.60 ± 0.02 b	0.55 ± 0.06 b	0.80 ± 0.08 a	0.75 ± 0.05 a	***
Myricetin-3- <i>O</i> -hexoside	Myricetin-3- <i>O</i> -rhamnoside	1.03 ± 0.09 b	0.72 ± 0.07 b	1.47 ± 0.31 a	1.68 ± 0.34 a	***
Myricetin-rhamno-hexoside	Myricetin-3- <i>O</i> -rhamnoside	1.00 ± 0.03 b	0.60 ± 0.08 c	1.23 ± 0.21 a	1.27 ± 0.11 a	***
Laricitrin-3- <i>O</i> -glucoside	Kaempferol-3- <i>O</i> -glucoside	0.24 ± 0.03 b	0.21 ± 0.02 b	1.03 ± 0.10 a	1.01 ± 0.04 a	***
Quercetin-3- <i>O</i> -rutinoside		2.10 ± 0.17 c	2.28 ± 0.27 bc	3.29 ± 0.71 a	2.83 ± 0.18 ab	***
Quercetin-3- <i>O</i> -galactoside		1.68 ± 0.07 b	1.47 ± 0.09 b	7.15 ± 0.62 a	6.99 ± 0.64 a	***
Quercetin-3- <i>O</i> -glucoside		1.54 ± 0.17 b	1.40 ± 0.17 b	4.19 ± 0.54 a	3.77 ± 0.67 a	***
Quercetin-3- <i>O</i> -glucuronide		2.77 ± 0.26 b	2.46 ± 0.29 b	5.98 ± 0.73 a	5.46 ± 0.61 a	***
Quercetin-3- <i>O</i> -arabinopyranoside		0.44 ± 0.07 b	0.47 ± 0.04 b	1.68 ± 0.17 a	1.61 ± 0.09 a	***
Quercetin-3- <i>O</i> -arabinofuranoside		0.64 ± 0.09 c	0.62 ± 0.04 c	1.49 ± 0.08 a	1.34 ± 0.10 b	***
Kaempferol-3- <i>O</i> -rutinoside	Kaempferol-3- <i>O</i> -glucoside	0.46 ± 0.03 c	0.57 ± 0.04 b	0.67 ± 0.05 a	0.59 ± 0.03 b	***
Isorhamnetin-3- <i>O</i> -galactoside	Isorhamnetin-3- <i>O</i> -glucoside	0.14 ± 0.02 bc	0.10 ± 0.01 c	0.17 ± 0.03 ab	0.20 ± 0.04 a	***
Isorhamnetin-3- <i>O</i> -rutinoside	Isorhamnetin-3- <i>O</i> -glucoside	1.29 ± 0.05 c	1.32 ± 0.01 c	1.63 ± 0.11 a	1.43 ± 0.04 b	***
Syringetin-3- <i>O</i> -glucoside	Myricetin-3- <i>O</i> -rhamnoside	0.29 ± 0.04 c	0.28 ± 0.03 c	0.68 ± 0.09 a	0.61 ± 0.04 b	***
Total flavonols		14.20 ± 1.14 b	13.06 ± 1.22 b	31.47 ± 3.83 a	29.54 ± 2.98 a	**
Sign. (tunnel vs net)			***			
Sign. (ridge vs pots)			NS			
Anthocyanins						
Delphinidin-3- <i>O</i> -galactoside	Delphinidin-3- <i>O</i> -glucoside	2.68 ± 0.34 c	3.05 ± 0.69 bc	3.64 ± 0.35 b	4.46 ± 0.58 a	***
Delphinidin-3- <i>O</i> -glucoside		116.3 ± 3.46 b	79.09 ± 2.47 c	117.0 ± 8.99 b	134.8 ± 10.88 a	***
Delphinidin-3- <i>O</i> -arabinoside	Delphinidin-3- <i>O</i> -glucoside	30.60 ± 1.73 b	23.41 ± 1.37 c	30.53 ± 1.77 b	35.14 ± 1.57 a	***
Cyanidin-3- <i>O</i> -galactoside		21.42 ± 1.13 b	16.39 ± 0.96 c	20.98 ± 0.66 b	24.00 ± 0.98 a	***
Cyanidin-3- <i>O</i> -arabinoside	Cyanidin-3- <i>O</i> -glucoside	1.71 ± 0.35 ab	1.48 ± 0.19 b	1.87 ± 0.23 a	1.95 ± 0.23 a	*
Petunidin-3- <i>O</i> -galactoside		304.1 ± 10.02 c	252.6 ± 5.22 d	316.4 ± 9.25 b	357.3 ± 7.71 a	***

Petunidin-3- <i>O</i> -arabinoside		46.63 ± 2.29 b	41.14 ± 2.43 c	45.59 ± 2.36 b	59.54 ± 2.48 a	***
Peonidin-3- <i>O</i> -galactoside	Peonidin-3- <i>O</i> -glucoside	3.37 ± 0.24 b	2.97 ± 0.18 c	3.30 ± 0.38 bc	4.30 ± 0.24 a	***
Peonidin-pentose	Peonidin-3- <i>O</i> -glucoside	8.02 ± 0.59 a	6.61 ± 0.47 b	7.36 ± 0.76 ab	7.82 ± 0.66 a	*
Malvidin-3- <i>O</i> -hexoside	Malvidin-3- <i>O</i> -glucoside	112.7 ± 3.72 ab	109.6 ± 7.59 b	122.4 ± 11.10 a	115.2 ± 8.32 ab	*
Malvidin-3- <i>O</i> -arabinoside	Malvidin-3- <i>O</i> -glucoside	8.51 ± 0.67	8.30 ± 1.06	8.32 ± 1.24	8.76 ± 0.58	NS
Malvidin-3- <i>O</i> -xyloside	Malvidin-3- <i>O</i> -glucoside	44.08 ± 2.67	45.12 ± 4.01	45.59 ± 5.69	43.86 ± 3.55	NS
Total anthocyanins		700.07 ± 27.21 b	589.82 ± 26.64 c	723.43 ± 42.78 b	797.31 ± 37.78 a	***
Sign. (tunnel vs net)				***		
Sign. (ridge vs pots)			NS			

Data are means ± standard errors of 5 replicates

Sign. (tunnel vs net), significance between protected environments (Duncan tests; $\alpha < 0.05$)

Sign. (ridge vs pots), significance between planting systems (Duncan tests; $\alpha < 0.05$)

Data with different lowercase letters within rows are significantly different (Duncan tests; $\alpha < 0.05$)

NS, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$

Supplementary Material Table S3. Blueberry fruit individual phenolics contents for the ‘Brigitta’ cultivar grown under the high tunnel and hail net conditions in the ridge and pots.

Phenolics [mg (100 g) ⁻¹]	Equivalents measure	High tunnel		Hail net		Sign.
	(where different)	Ridge	Pots	Ridge	Pots	(across treatments)
Phenolic acids						
Ellagic acid derivative	Chlorogenic acid Ferulic acid Ferulic acid Ferulic acid	30.15 ± 1.14 c	31.31 ± 1.43 c	37.60 ± 0.65 b	47.11 ± 0.90 a	***
Caffeic acid derivative 1		0.15 ± 0.01 c	0.15 ± 0.01 c	0.21 ± 0.02 b	0.24 ± 0.01 a	***
Caffeic acid derivative 2		3.16 ± 0.26 b	3.10 ± 0.06 b	3.32 ± 0.05 b	6.63 ± 0.31 a	***
Caffeic acid derivative 3		0.54 ± 0.11 ab	0.54 ± 0.12 a	0.38 ± 0.05 c	0.39 ± 0.11 bc	*
4-Caffeoylquinic acid		2.91 ± 0.30 a	2.91 ± 0.51 a	2.39 ± 0.36 b	2.23 ± 0.29 b	*
5-Caffeoylquinic acid		95.37 ± 4.71 b	106.0 ± 4.89 a	64.46 ± 2.69 c	61.25 ± 3.86 c	***
Caffeoylquinic acid dimer		1.37 ± 0.06 b	1.61 ± 0.12 a	1.20 ± 0.27 b	1.20 ± 0.13 b	**
5-Feruloylquinic acid		0.21 ± 0.02 a	0.21 ± 0.04 a	0.15 ± 0.03 b	0.19 ± 0.03 ab	*
Ferulic acid derivative		4.05 ± 0.90	3.80 ± 0.45	4.04 ± 0.83	4.73 ± 0.79	NS
Feruloyl-glucoside		0.08 ± 0.01 b	0.09 ± 0.02 b	0.08 ± 0.01 b	0.12 ± 0.03	*
Total phenolic acids		137.99 ± 7.52 b	149.71 ± 7.65 a	113.84 ± 4.96 d	124.08 ± 6.46 c	**
Sign. (tunnel vs net)		***				
Sign. (ridge vs pots)		*				
Flavan-3-ols						
Procyanidin B1	Procyanidin B1	43.83 ± 0.99 c	52.75 ± 1.68 b	45.30 ± 3.15 c	58.84 ± 1.75 a	***
Procyanidin B2		10.51 ± 1.35 bc	9.71 ± 1.14 c	13.81 ± 2.81 b	19.60 ± 4.33 a	***
Catechin		34.15 ± 1.31 c	35.78 ± 1.05 b	33.93 ± 1.45 c	40.55 ± 0.64 a	***
Epicatechin		2.17 ± 0.27 a	2.37 ± 0.22 a	1.49 ± 0.25 b	1.42 ± 0.33 b	***
Total flavan-3-ols		90.66 ± 3.92 c	100.61 ± 4.09 b	94.53 ± 7.66 bc	120.42 ± 7.05 a	***

Sign. (tunnel vs net)

*

Sign. (ridge vs pots)

Flavonols

Myricetin-3- <i>O</i> -pentoside	Myricetin-3- <i>O</i> -rhamnoside	0.38 ± 0.03 c	0.40 ± 0.08 bc	0.45 ± 0.01 ab	0.48 ± 0.04 a	*
Myricetin-3- <i>O</i> -hexoside	Myricetin-3- <i>O</i> -rhamnoside	0.65 ± 0.15 c	0.67 ± 0.18 c	1.49 ± 0.35 b	1.93 ± 0.14 a	***
Myricetin-rhamno-hexoside	Myricetin-3- <i>O</i> -rhamnoside	0.14 ± 0.01 b	0.18 ± 0.02 a	0.10 ± 0.02 c	0.17 ± 0.02 a	***
Laricitrin-3- <i>O</i> -glucoside	Kaempferol-3- <i>O</i> -glucoside	0.37 ± 0.02 b	0.40 ± 0.05 b	0.65 ± 0.05 a	0.65 ± 0.06 a	***
Quercetin-3- <i>O</i> -rutinoside		1.69 ± 0.12 b	1.62 ± 0.20 b	2.09 ± 0.12 a	2.02 ± 0.13 a	***
Quercetin-3- <i>O</i> -galactoside		1.98 ± 0.19 b	2.63 ± 0.26 b	5.65 ± 0.25 a	5.50 ± 0.89 a	***
Quercetin-3- <i>O</i> -glucoside		1.32 ± 0.12 b	1.22 ± 0.18 b	2.83 ± 0.50 a	2.68 ± 0.21 a	***
Quercetin-3- <i>O</i> -glucuronide		0.14 ± 0.01 b	0.16 ± 0.01 a	0.17 ± 0.01 a	0.17 ± 0.02 a	**
Quercetin-3- <i>O</i> -arabinopyranoside		0.27 ± 0.01 b	0.34 ± 0.06 b	0.65 ± 0.08 a	0.62 ± 0.09 a	***
Quercetin-3- <i>O</i> -rhamnoside		0.69 ± 0.03 b	0.76 ± 0.11 b	1.11 ± 0.04 a	1.09 ± 0.12 a	***
Kaempferol-3- <i>O</i> -rutinoside	Kaempferol-3- <i>O</i> -glucoside	0.34 ± 0.03 b	0.37 ± 0.05 ab	0.37 ± 0.04 ab	0.40 ± 0.01 a	.
Isorhamnetin-3- <i>O</i> -galactoside	Isorhamnetin-3- <i>O</i> -glucoside	0.59 ± 0.02 c	0.52 ± 0.02 d	0.66 ± 0.06 b	0.93 ± 0.03 a	***
Isorhamnetin-3- <i>O</i> -rutinoside	Isorhamnetin-3- <i>O</i> -glucoside	0.16 ± 0.00 b	0.20 ± 0.02 a	0.15 ± 0.01 b	0.19 ± 0.01 a	***
Syringetin-3- <i>O</i> -glucoside	Myricetin-3- <i>O</i> -rhamnoside	0.68 ± 0.04 b	0.69 ± 0.05 b	0.60 ± 0.11 b	0.98 ± 0.11 a	***
Total flavonols		9.40 ± 0.78 b	10.17 ± 1.29 b	16.99 ± 1.65 a	17.81 ± 1.97 a	**

Sign. (tunnel vs net)

Sign. (ridge vs pots)

NS

Anthocyanins

Delphinidin-3- <i>O</i> -galactoside	Delphinidin-3- <i>O</i> -glucoside	3.99 ± 0.23 b	3.95 ± 0.29 b	3.67 ± 0.46 b	5.45 ± 0.24 a	***
Delphinidin-3- <i>O</i> -glucoside		72.05 ± 2.70 c	72.33 ± 2.33 c	83.57 ± 3.66 b	113.2 ± 5.00 a	***
Delphinidin-3- <i>O</i> -arabinoside	Delphinidin-3- <i>O</i> -glucoside	32.40 ± 2.41 b	27.22 ± 1.35 c	27.07 ± 1.75 c	36.80 ± 1.83 a	***
Cyanidin-3- <i>O</i> -galactoside		14.71 ± 0.84 b	14.82 ± 0.73 b	15.69 ± 1.39 b	20.03 ± 1.65 a	***
Cyanidin-3- <i>O</i> -arabinoside	Cyanidin-3- <i>O</i> -glucoside	1.23 ± 0.22	1.25 ± 0.27	1.24 ± 0.20	1.48 ± 0.15	NS

Petunidin-3- <i>O</i> -galactoside		210.9 ± 11.87 c	201.1 ± 7.73 c	248.5 ± 13.81 b	316.1 ± 12.78 a	***
Petunidin-3- <i>O</i> -arabinoside		45.44 ± 2.34 a	47.36 ± 1.53 a	34.46 ± 2.42 b	44.39 ± 2.17 a	***
Peonidin-3- <i>O</i> -galactoside	Peonidin-3- <i>O</i> -glucoside	3.59 ± 0.81 b	3.64 ± 0.36 b	2.65 ± 0.39 c	4.47 ± 0.59 a	**
Peonidin-pentose	Peonidin-3- <i>O</i> -glucoside	5.58 ± 0.66 a	5.47 ± 0.37 a	4.62 ± 0.86 b	5.56 ± 0.24 a	.
Malvidin-3- <i>O</i> -hexoside	Malvidin-3- <i>O</i> -glucoside	71.13 ± 5.60 a	63.97 ± 2.92 b	72.59 ± 1.99 a	70.60 ± 2.87 a	**
Malvidin-3- <i>O</i> -arabinoside	Malvidin-3- <i>O</i> -glucoside	6.35 ± 0.44	6.11 ± 0.70	6.45 ± 0.68	6.16 ± 0.83	NS
Malvidin-3- <i>O</i> -xyloside	Malvidin-3- <i>O</i> -glucoside	29.48 ± 1.56	30.74 ± 2.81	33.28 ± 2.02	35.31 ± 2.32	NS
Total anthocyanins		496.82 ± 29.68 c	477.92 ± 21.39 c	533.79 ± 29.63 b	659.62 ± 30.67 a	***
Sign. (tunnel vs net)				***		
Sign. (ridge vs pots)				NS		

Data are means ±standard errors of 5 replicates

Sign. (tunnel vs net), significance between protected environments (Duncan tests; $\alpha < 0.05$)

Sign. (ridge vs pots), significance between planting systems (Duncan tests; $\alpha < 0.05$)

Data with different lowercase letters within rows are significantly differences (Duncan tests; $\alpha < 0.05$)

NS, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$