

UV-A supplement improved growth, antioxidant capacity and anthocyanin accumulation in purple lettuce (*Lactuca sativa* L.)

Supplementary material Captions to the table and figures

Table S1 Light recipes and their photosynthetic photon flux density (PPFD, $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$). W: white light. R: red light. B: blue light. UV-A: ultraviolet-A light. WRB is white light plus red and blue light, SUV_1 is WRB plus $10\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ UV-A (380 - 400 nm), SUV_2 is WRB plus $20\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ UV-A, SUV_3 is WRB plus $30\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ UV-A. Same as below.

Table S2 Analysis of the LED light spectrum under different intensities of UV-A (%).

Table S3 Design and synthesize primers.

Table S4 Primer sequences of RT-qPCR.

Table S1

Treatments	W	R	B	UV-A
W (CK)	$300\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$0\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$0\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$0\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$
WRB	$150\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$120\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$30\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$0\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$
SUV_1	$140\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$120\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$30\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$10\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$
SUV_2	$130\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$120\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$30\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$20\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$
SUV_3	$120\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$120\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$30\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$	$30\ \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$

Table S2

Treatments	Ultraviolet (380-400nm)	Blue (400-510nm)	Green (510-610nm)	Red (610-720nm)	Fae-red (720-780nm)
W (CK)	0.2	34.9	46.0	17.3	1.3
WRB	0.2	27.0	25.7	46.1	1.0
SUV_1	10.8	30.6	16.2	41.2	1.1
SUV_2	16.8	36.1	14.1	32.2	0.8
SUV_3	19.5	37.7	12.2	29.9	0.7

Table S3

Genes	Accession No.	Primers	Sequences (5' to 3')
bHLH	MF579554	bHLH-F	GAGGATCTTACGGAGGCTGAA
		bHLH-R	TGTGGCGTGATGCTGAGTG
DFR	MF579548	DFR-F	GAAAGAGGATTCTCCGACCAC
		DFR-R	GGAGGGAATGAGGGAGTGAT

Table S4

Accession No.	Genes	Primers	Sequences (5' to 3')
AB525912	ANS	ANS-F	CCTCCACGCCCAATGATTA
		ANS-R	CCTCTAGTCCTAACCCAAGAGA
MF579545	CHI	CHI-F	AGACATTGTTACTGGTCCCTTC
		CHI-R	CACCAACGCACATTTTCAGATAC
AB525909	CHS	CHS-F	CTTAAGGATGTTCCAGGGTTGA
		CHS-R	GATGGAGTTCAGTCGGTTATC

MF579548	DFR	DFR-F	TGACGTTATGGAAGGCAGATT
		DFR-R	GACTGAAAGTCCATAGGCGTAG
AB525911	UFGT	UFGT-F	TGGTCCCTTCCATCTCATCT
		UFGT-R	GAGATGTAGGCCACTGATCTTG
AF411134	PAL	PAL-F	CAGAAGCTCCGACAGGTTATC
		PAL-R	ACGGCTTTCAGTTCCTCTTC
AB525910	F3H	F3H-F	CCTTGAGAAAGAAGCCCTAACT
		F3H-R	CCAATGTGAGATCGGGTTGA
