Table S1. Response of lettuce, cucumber and tomato growth (dry mass) and development (leaf area, stem length and petiole length) to blue photons (B). This analysis only includes the effects of increasing the fraction of blue between 5 and 75% blue, meaning that all treatments contain some red (600 to 699 nm) and blue photons. The complete absence of either red or blue photons often induces abnormal growth and development [25,26], likely caused by under-activation of the photoreceptors cryptochromes and phytochormes [43]. In the Days column the number in bold is the number of days in the treatment, and the other number is the number of days between emergence/planting and moving the plants into the treatments.

					Blue Effects	;					
		Range of	PPFD	period					CO ₂		
Species	Cultivar	treatments	(µmol m ⁻² s ⁻¹)	(h)	Parameter	Effect	Citation	Comment	(ppm)	Temp	Days
	Waldmann's Green	8 and 16%	300	18	Dry Mass	NS	Yorio et al. 2001		1200	23	21
	Grand Rapids	6 to 26%	200 & 500	16	Leaf Area	NS	Dougher and Bugbee		1000	26/22	4+ 18
					Dry Mass	^	2001			,	
	Red Fire	10 and 26%	300	12	Leaf Area	\downarrow	Ohashi-Kaneko et al.		400	20/18	37
	Pod Cross	16 22 and 55%	200	16	Dry Mass	√ NS	Li and Kubota 2009			25/20	10± 13
	Red Closs	10, 25 and 55%	500	10	Leaf Area	113	LI dilu Kubola 2009		-	25/20	10+12
	Sunmang				Dry Mass	Ť		Grand Rapids lettuce at			
		13 to 59%	171	12	Leaf Area	Ť	Son and Oh 2013	47% blue did not fit the	400	20	18+ 28
	Grand Rapid TBR				Dry Mass	\downarrow		trenu			
			200		Leaf Area	-		Results for leaf area at			
	Waldmann's Green	11 to 28%	200	16	Dry Mass	NS	Cone et al. 2014	200 umol m ⁻² s ⁻¹ are	430	24 5	21
	Walaniani 5 Green	11 10 20/0	500	10	Leaf Area	\downarrow	cope et ul. 2014	difficult to interpret	430	24.5	
					Dry Mass	NS		· · ·			
			100		Leaf Area	\downarrow					
					Dry Mass	NS		At 200 µmol m ⁻² s ⁻¹ the			4.11
	Red Fire	15, 19 and 25%	200	16	Leat Area	NS NS	Furuyama et al. 2014	highest dry mass occurred in the middle treatment (19% B)	1000	23/20	4+11
					Divividss	- -					+14
			300		Dry Mass	」 个					
	Jeokchima	10, 20 and 30%	230		Loof Area		Lee et al. 2014	Decrease in leaf area only occurs between 20 and	800		
				16	Leal Area	\checkmark				22/18	28
					Dry Mass	NS		30% B			
	Ostinata	12 to 36%	150	16	Dry Mass	-	Kong et al. 2015	Results are difficult to interpret. No apparent trend	1200	25/18	39
e					LoofAroo			ticità			
tt	Sunmang	Sunmang	173		Leal Area	¥ 1					
Fe		13 to 34%		12	Leaf Area	↓	Son and Oh 2015		400	20	18+ 28
	Grand Rapid TBR				Dry Mass	Ť					
					,	•					
	Green Oak Leaf	23, 30 and 45%	135	16	Dry Mass	-	Chen et al. 2016	Results are difficult to interpret. No apparent trend	350	22/18	35
	unoncoified	8 to 50%	200	10	Leaf Area	\downarrow	Wang at al. 2016		400	24/20	20
	unspecified	8 10 50%	200	10	Dry Mass	\downarrow	Wang et al. 2016		400	24/20	30
					Leaf Area	\downarrow		Results are difficult to			
	Sunmang	8 to 31%	173	12	DruMass		Son et al. 2016	interpret. Appears to	400	20	18+ 28
					Dry Wass	\checkmark		trend downward			
			200		Leaf Area	NS					
	Waldmann's Green	11 to 28%		16	Dry Mass	NS	Snowden et al. 2016		430	-	21
			500		Leat Area	NS					
	Green Skirt	10 to 30%	150	16	Plant diameter	115	Kangetal 2016		1000	22/17	14+28
				14		-		At 200 umol m ⁻² s ⁻¹ in 14		,	
	E 10 1	20.7. 21.4 and	200	16	~	NS	N 1 2010	h, the highest dry mass		22/40	20+
	Frill ice	26.2%	250	14	Dry Mass	NS	Yan et al. 2019	occurred in the middle	800	22/18	20
			250	16		NS		treatment (21.4% B)			
	Rouvai				Plant diameter	\downarrow					
	nouxui	7 to 33%	180	20	Fresh/Dry Mass	\downarrow	Mengetal 2019		379 to	20	30
	Rex	, 10 00,0	100	20	Plant diameter	\downarrow			402	20	••
					Fresh/Dry Mass	\downarrow					
	кех Cherokee	17 and 50%	180	24	Dry Mass Dry Mass	\downarrow	vieng and Runkle 2019	treatments	-	23	3 + 12

Table S1. Continued

		Range of	PPFD	period					CO_2		
Species	Cultivar	treatments	(µmol m ⁻² s ⁻¹)	(h)	Parameter	Effect	Citation	Comment	(ppm)	Temp	Days
			100			NS	NS	At 150, 200 and 250			
			150			-		had significant			20+
	Ziwei	14 to 27%	200	14	Dry Mass	-	Yan et al. 2019b	differences, but the	800	22	20
			250			-		pattern is not always			
e -			300			\downarrow		consistent.			
nc	Rouxai	7 to 55%	180	20	Plant diameter	\downarrow	Meng et al. 2020		410	22	30/33
ett					Dry Mass	\downarrow					
Ľ	Green Oak Leaf	20 150%	200	40	Dry Mass	NS	6 II I I 1 2020	A higher 80% B showed			
	Red Oak Leaf	20 and 50%	200	18	Dry Mass	NS	Spainoiz et al. 2020	Red Oak Leaf	704	20	42
								The highest day mass and			
	Tiberius	10 25 and 28% B	210	16	Leaf Area	NS	701 et al. 2020	leaf area occurred in the	-(400)	23/21	15
	nbenus	10, 25 and 20% b	210	10	Dry Mass	NS	200 21 2020	middle treatment	-(400)	25/21	15
					Leaf Area	\downarrow					
	Cumlaude	10 to 75%	100	18	Dry Mass	Ý	Hernandez and		512	24.5	17
					Stem Length	\checkmark	Kubota 2016				
	Sweet Slice 11 to 28%				Leaf Area	NS					
			200		Dry Mass	NS					
			200	10	Stem Length	NS	Snowdon at al 2016				
		11 to 200/			Petiole Length	\checkmark			420		24
			10	Leaf Area	\checkmark	Showden et al. 2010		430	-	21	
er			500		Dry Mass	\checkmark					
qun			500		Stem Length	\downarrow					
					Petiole Length	\checkmark					
Cuc	Zhongnong 26	14 to 27% B			Leaf Area	\downarrow		Results are difficult to interpret. Lowest dry			
			200	12	Dry Mass	-	Song et al. 2017	mass and height were in intermediate treatments. Tallest plants occurred at	500	25	15
					Stem Length	-(个)		the highest percent blue			
	Zhongnong 16	10, 25 and 28% B	230	16	Leaf Area	\checkmark	Zou et al. 2020				
					Dry Mass	\checkmark			-(400)	23/21	. 15
					Stem Length	\downarrow					
		0, 4 and 16% B (supplemental in GH)		18	Leaf Area	NS	Hernandez and Kubota 2012				
	Komeett		56 + GH		Dry Mass	NS		Supplemental in GH	512	24.5	7+11
					Stem Length	NS					
	Faulty Cial	25 and 50%	100	10	Leaf Area	↓ 	Wollaeger and			20	24/22
	Early Giri	25 and 50%	160	18	Dry Wass	IN S	Runkle 2014			20	31/32
					Stem Length	INS NC					
	Forly Cirl	6 to 50%	160	10	Leal Area	IN S	Wollaeger and			20	31 to
	Early Gill	01030%	100	10	Dry Wass	113	Runkle 2015		-	20	33
0					Loof Aroo	¥					
atc					Dry Mass	Ý					
Ê			200		Stem Length						
<u>م</u>	Early girl				Petiole Length	NS NS					
		11 to 28%		16	Lesf Area	.1.	Snowden et al. 2016		430	-	21
					Dry Mass	↓					
			500		Stem Length	↓					
					Petiole Length	.↓ .↓					
					Leaf Area	NS					
	Komeett	10 to 75%	100	18	Dry Mass	NS	Hernandez et al.		509	25	21
			100	_0	Stem Length						
					Leaf Area	-		Significant differences.			
	Qianxi	25 to 75%	300	12	Dry Mass	-	Liu et al. 2018	but no apparent trends	- (400)	28/18	30

Table S2. Effect of green photons (G) on growth and development of lettuce, cucumber and tomato. The studies included in this summary generally maintained a constant fraction of blue photons (B), while increasing the fraction of green photons (by simultaneously decreasing the fraction of red photons). In the Days column the number in bold is the number of days in the treatment, and the other number is the number of days between emergence/planting and moving the plants into the treatments.

					Green Effect	S					
		Range of	PPFD	period					CO_2		
Species	Cultivar	treatments	(µmol m ⁻² s ⁻¹)	(h)	Parameter	Effect	Citation	Comment	(ppm)	Temp	Days
	Waldmann's Green	16% B with or	150	18	Leaf Area	↑ 	Kim et al. 2004		1200	21	28
	Red Cross	31, 52 and 70% G	300	16	Dry Mass	NS	Li and Kubota 2009		-	25/20	10+ 12
	Ostinata	27% B with 23, 40 or 51% G	150	16	Dry Mass	1	Kong et al. 2015		1200	25/18	39
	Sunmang	14% B with or without 8% G 24% B with or without 8% G	173	12	Leaf Area Dry Mass Leaf Area Dry Mass Leaf Area	NS NS ↑ NS	Son and Oh 2015		400	20	18+ 28
	Grand Rapid TBR	without 8% G 24% B with or without 8% G			Dry Mass Leaf Area Dry Mass	NS NS NS					
	Green Oak Leaf	23% B with 30 or 53% G	135	16	Dry Mass	NS/↓	Chen et al. 2016	NS compared to high yellow, ↓compared to high red	350	22/18	35
	Sunmang	About 20% B with 7 or 13% G	173	12	Leaf Area Dry Mass	↑ NS/↑	Son et al. 2016	Two 7% G treatments. NS compared to one, ↑ compared to other	400	20	18+ 28
tuce	Waldmann's Green	1.7 to 41% G in a background of 11 to 14% B	200 500	16	Leaf Area Dry Mass Leaf Area Dry Mass	↓ NS NS	Snowden et al. 2016		430		21
Let	Green Skirt	10% G in a 10, 20 or 30% B background	150	16	Plant diameter	NS	Kang et al. 2016		1000	22/17	14+ 28
	Frill ice	21% B with 34 or 41% G	200 250	14 16 14 16	Dry Mass	↑ NS NS NS	Yan et al. 2019		800	22/18	20+ 20
	Ziwei	18.5% B with 32 or 45% G	100 150 200 250 300	14	Dry Mass	NS NS ↓ ↓	Yan et al. 2019b		800	22	20+ 20
	Rouxai	12% B with or without 32% G 34% B with or without 33% G 55% B with or without 32% G	180	20	Plant diameter Dry Mass Plant diameter Dry Mass Plant diameter Dry Mass	NS NS ↓ ↓ NS	Meng et al. 2020		410	22	30/33
	Tiberius	15% B with 0 or 25% G	150	16	Leaf Area Dry Mass	↑ NS	Li et al. 2020		1000	24/20	21
	Tiberius	27% B with 35 or 45% G	210	16	Leaf Area Dry Mass	\downarrow	Zou et al. 2020		-(400)	23/21	15

Table S2. Continued

		Range of	PPFD	period					CO ₂							
Species	Cultivar	treatments	(µmol m ⁻² s ⁻¹)	(h)	Parameter	Effect	Citation	Comment	(ppm)	Temp	Days					
	Cumlaude				Leaf Area	NS	Hornandozand	No donosturo from the								
		28% G at 20%B	100	18	Dry Mass	NS	Kubata 2016	trend set by R effects	512	24.5	17					
					Stem Length	NS	KUDOLA 2010	tiend set by b enects								
					Leaf Area	NS										
			200		Dry Mass	NS										
			200		Stem Length	NS										
<u> </u>	Sweet Slice	13% B with 2 to		16	Petiole Length	NS	Snowdon at al. 2016		420		21					
ğ	Sweet Sille	41% G		10	Leaf Area	\uparrow	Showden et al. 2016		430	-	21					
μ			500		Dry Mass	NS										
nci			500		Stem Length	NS										
ō					Petiole Length	NS										
		200/ D with 1 to			Leaf Area	NS										
	Zhongnong 26	20% B WILL I LO	200	12	Dry Mass	\downarrow	Song et al. 2017		500	25	15					
		4700			Stem Length	NS										
	Zhongnong 16	27% P with 2E or			Leaf Area	\downarrow	Zou et al. 2020									
		27% B WILLI 35 OF	230	16	Dry Mass	\downarrow			-(400)	23/21	15					
		45% G			Stem Length	\downarrow										
		0 and 25% G as B decreases from 50 to 25%		18	Leaf Area	NS	Wollaeger and Runkle 2014									
	Early Girl		0 160		Dry Mass	NS			-	20	31/32					
					Stem Length	NS										
					Leaf Area	NS										
			200		Dry Mass	NS										
0		17 to 11% C in a	200		Stem Length	NS										
Jat	Early girl	1.7 t0 41% G III a		16	Petiole Length	NS	Snowdon at al. 2016		420		21					
Lo Lo	Early gill	to 14% P		10	Leaf Area	NS	Showden et al. 2016		450	-	21					
⊢		t0 1478 B	500		Dry Mass	NS										
			500		Stem Length	\uparrow										
					Petiole Length	NS										
					Leaf Area	NS	Hernandez et al.	No doparturo from the								
	Komeett	28% G at 20% B	100	18	Dry Mass	NS		trend set by B	509	25	21					
											Stem Length	NS	2016	tienu set by B		

Figure S1. Photos from the other two replicates of 'Red Sails' lettuce. In general, anthocyanin pigmentation was higher at a PPFD of 500 μ mol m⁻² s⁻¹, but pigmentation in the lower fractions of blue (10%) at the higher PPFD (500 μ mol m⁻² s⁻¹) looked visually similar to the pigmentation at the higher fraction of blue (30%) at the lower PPFD (200 μ mol m⁻² s⁻¹).

vviiite			RB	R	BG	
19	25	10	22	33	21	10
46	50	1	1	1	13	20
	PF	PFD: 200 μ	mol m ⁻² s ⁻¹			
	2002.0		St.		dante	
1 And	- And		الجي الجي			
and the state of t						
			*			
		2	AND AS			
		19 19 19 19 19 19 19 19 19 19 19 19 19 1	4) C-40-5	- Alex sheep		Contraction of the second
						- 500
	PF	PFD: 500 μ	mol m ⁻² s ⁻¹			
	19 46	19 25 46 50 Pr	19 25 10 46 50 1 	19 25 10 22 46 50 1 1 PPFD: 200 μmol m ⁻² s ⁻¹ Image: Second colspan="2">Image: Second colspan="2">Image: Second colspan="2">Image: Second colspan="2" Image: Second colspan="2" Image: Second colspan="2"	19 25 10 22 33 46 50 1 1 1 PPFD: 200 μmol m ⁻² s ⁻¹ $\sqrt[3]{00}$ PPFD: 200 μmol m ⁻² s ⁻¹ $\sqrt[3]{00}$ <td>19 25 10 22 33 21 46 50 1 1 1 13 PPFD: 200 μmol m⁻² s⁻¹ ϕ <t< td=""></t<></td>	19 25 10 22 33 21 46 50 1 1 1 13 PPFD: 200 μmol m ⁻² s ⁻¹ ϕ <t< td=""></t<>

	White			RB	RBG							
10	19 25		10	10 22 33			10					
42	46	50	1	1	1	13	20					
		PF	PFD: 200 μn	nol m ⁻² s ⁻¹								
		* * **			\$ \$ \$ \$ \$							
	PPFD: 500 μmol m ⁻² s ⁻¹											