

Table S1. The leachate pH of the 17 substrates with basil and tomato plants at 0, 2, 4, 6 and 9 weeks after transplanting (WAT).

Substrate	Leachate pH									
	Basil					Tomato				
	0 WAT	2 WAT	4 WAT	6 WAT	9 WAT	0 WAT	2 WAT	4 WAT	6 WAT	9 WAT
20BC:5VC:75CS ^z	6.6 c ^y	6.7 bc	6.5 b	6.2 b	5.8 b	6.6 c	6.6 bc	6.6 b	5.7 bc	4.9 ab
40BC:5VC:55CS	7.5 e	7.7 d	7.4 b	7.2 b	6.6 b	7.5 e	7.7 e	7.5 b	6.5 b-e	5.2 cd
60BC:5VC:35CS	8.1 e	8.3 d	8.2 b	7.8 b	7.2 b	8.1 e	8.4 e	7.9 b	7.1 de	5.8 d
80BC:5VC:15CS	8.6 e	8.5 d	8.6 b	8.2 b	7.5 b	8.6 e	8.7 e	8.5 b	7.4 e	6.5 d
20BC:10VC:70CS	6.6 cd	6.8 c	6.7 b	6.4 b	6.0 b	6.6 cd	6.6 bc	6.7 b	5.7 b	4.8 ab
40BC:10VC:50CS	7.2 e	7.3 d	7.5 b	7.3 b	6.8 b	7.2 e	7.3 e	7.5 b	6.8 cde	5.6 d
60BC:10VC:30CS	7.7 e	7.6 d	8.0 b	7.5 b	7.1 b	7.7 e	7.6 e	7.8 b	7.0 de	6.0 d
80BC:10VC:10CS	8.2 e	8.2 d	8.5 b	8.1 b	7.5 b	8.2 e	8.3 e	8.3 b	7.6 e	6.6 d
20BC:15VC:65CS	6.2 b	6.5 b	6.5 b	6.3 b	6.0 b	6.2 b	6.5 b	6.5 b	5.7 bcd	4.9 bc
40BC:15VC:45CS	6.9 de	7.4 d	7.3 b	7.0 b	6.7 b	6.9 de	7.3 e	7.3 b	6.5 b-e	5.7 d
60BC:15VC:25CS	7.3 e	7.9 d	7.9 b	7.5 b	6.9 b	7.3 e	7.9 e	7.6 b	7.0 de	5.8 d
80BC:15VC:5CS	8.2 e	8.4 d	8.5 b	8.0 b	7.5 b	8.2 e	8.5 e	8.2 b	7.4 e	6.4 d
20BC:20VC:60CS	6.3 b	6.7 c	6.5 b	6.3 b	5.8 b	6.3 b	6.8 cd	6.4 b	5.9 b-e	5.2 d
40BC:20VC:40CS	7.1 e	7.3 d	7.4 b	7.0 b	6.5 b	7.1 e	7.2 de	7.3 b	6.4 b-e	5.5 d
60BC:20VC:20CS	7.4 e	7.7 d	7.9 b	7.5 b	7.0 b	7.4 e	7.6 e	7.6 b	7.1 de	6.1 d
80BC:20VC:0CS	7.9 e	8.2 d	8.5 b	8.1 b	7.6 b	7.9 e	8.3 e	8.3 b	7.5 e	6.7 d
Control	5.9 a	5.8 a	5.6 a	5.4 a	4.9 a	5.9 a	5.7 a	5.3 a	4.9 a	4.7 a

Note: ^zBC=Biochar; VC=Vermicompost; CS=Commercial substrate (Berger BM7 35BKS); Substrate '20BC:5VC:75CS' indicates mixes of 20%BC, 5%VC and 75%CS, by volume.

^y Means within a column followed by the same letter are not significantly different according to the Tukey's HSD test at $p < 0.05$ (n=6).

Table S2. The SPAD reading of basil and tomato leaves in 17 substrates at 2, 4, 6 and 9 weeks after transplanting (WAT).

Substrate	Leaf SPAD Readings							
	Basil				Tomato			
	2 WAT	4 WAT	6 WAT	9 WAT	2 WAT	4 WAT	6 WAT	9 WAT
20BC:5VC:75CS ^z	29.6 a ^y	28.5 a	28.5 a	31.6 a	27.7 a-e	32.4 a	37.0 a	38.3 ab
40BC:5VC:55CS	32.4 a	29.2 a	29.9 a	34.0 a	28.1 a-d	32.6 a	37.5 a	37.8 ab
60BC:5VC:35CS	31.7 a	28.5 a	28.8 a	33.3 a	29.0 ab	33.4 a	36.5 a	35.2 ab
80BC:5VC:15CS	30.1 a	28.6 a	28.0 a	31.3 a	29.3 a	34.6 a	34.9 a	34.1 b
20BC:10VC:70CS	32.2 a	28.5 a	30.0 a	32.7 a	28.7 abc	33.3 a	37.1 a	35.5 ab
40BC:10VC:50CS	31.8 a	29.2 a	29.6 a	33.4 a	27.7 a-e	33.1 a	35.7 a	38.3 ab
60BC:10VC:30CS	29.7 a	29.9 a	30.7 a	33.8 a	27.7 a-e	33.4 a	35.7 a	35.0 ab
80BC:10VC:10CS	31.2 a	30.0 a	29.4 a	31.5 a	27.1 a-e	32.8 a	34.5 a	35.0 ab
20BC:15VC:65CS	28.6 a	27.2 a	30.9 a	34.6 a	27.8 a-e	33.0 a	36.6 a	37.5 ab
40BC:15VC:45CS	26.7 a	26.6 a	27.5 a	31.6 a	27.6 a-e	32.5 a	37.2 a	37.2 ab
60BC:15VC:25CS	27.9 a	26.6 a	29.0 a	33.1 a	26.6 b-e	33.1 a	35.0 a	35.9 ab
80BC:15VC:5CS	32.0 a	30.3 a	29.4 a	31.8 a	26.3 de	34.0 a	35.6 a	34.4 b
20BC:20VC:60CS	28.9 a	28.1 a	29.4 a	32.1 a	26.8 b-e	33.1 a	36.1 a	39.3 a
40BC:20VC:40CS	27.1 a	27.6 a	28.8 a	30.4 a	26.6 b-e	33.2 a	36.9 a	36.3 ab
60BC:20VC:20CS	26.8 a	26.5 a	27.5 a	32.5 a	26.4 cde	33.0 a	34.7 a	36.3 ab
80BC:20VC:0CS	28.0 a	27.6 a	29.0 a	31.4 a	25.4 e	32.8 a	34.0 a	34.3 b
Control	27.6 a	28.9 a	28.9 a	31.1 a	25.7 de	34.2 a	36.4 a	39.4 a

Note: ^zBC=Biochar; VC=Vermicompost; CS=Commercial substrate (Berger BM7 35BKS); Substrate '20BC:5VC:75CS' indicates mixes of 20%BC, 5%VC and 75%CS, by volume.

^y Means within a column followed by the same letter are not significantly different according to the Tukey's HSD test at $p<0.05$ (n=6).

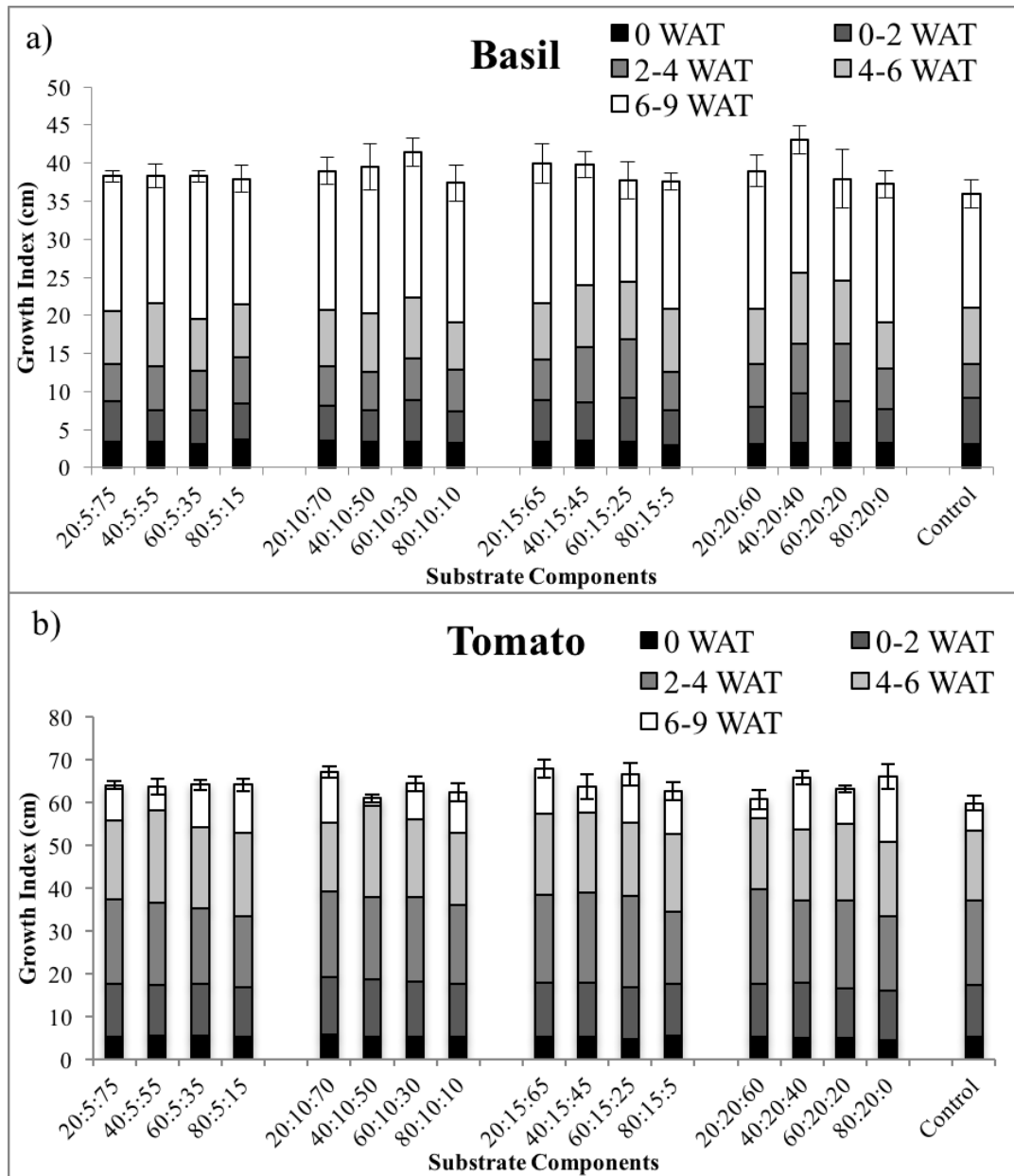


Figure S1. Cumulative growth index (mean $\pm$ standard error) per basil (a) or tomato (b) plant grown in 17 substrates at 0, 2, 4, 6, and 9 weeks after transplanting (WAT). The ratios on the X-axis indicate the percentage ratio of biochar to vermicompost to commercial substrate (by volume). The control was 100% commercial substrate (Berger BM7 35BKS). There is no significant difference among all the treatments at $p < 0.05$ ($n = 6$).

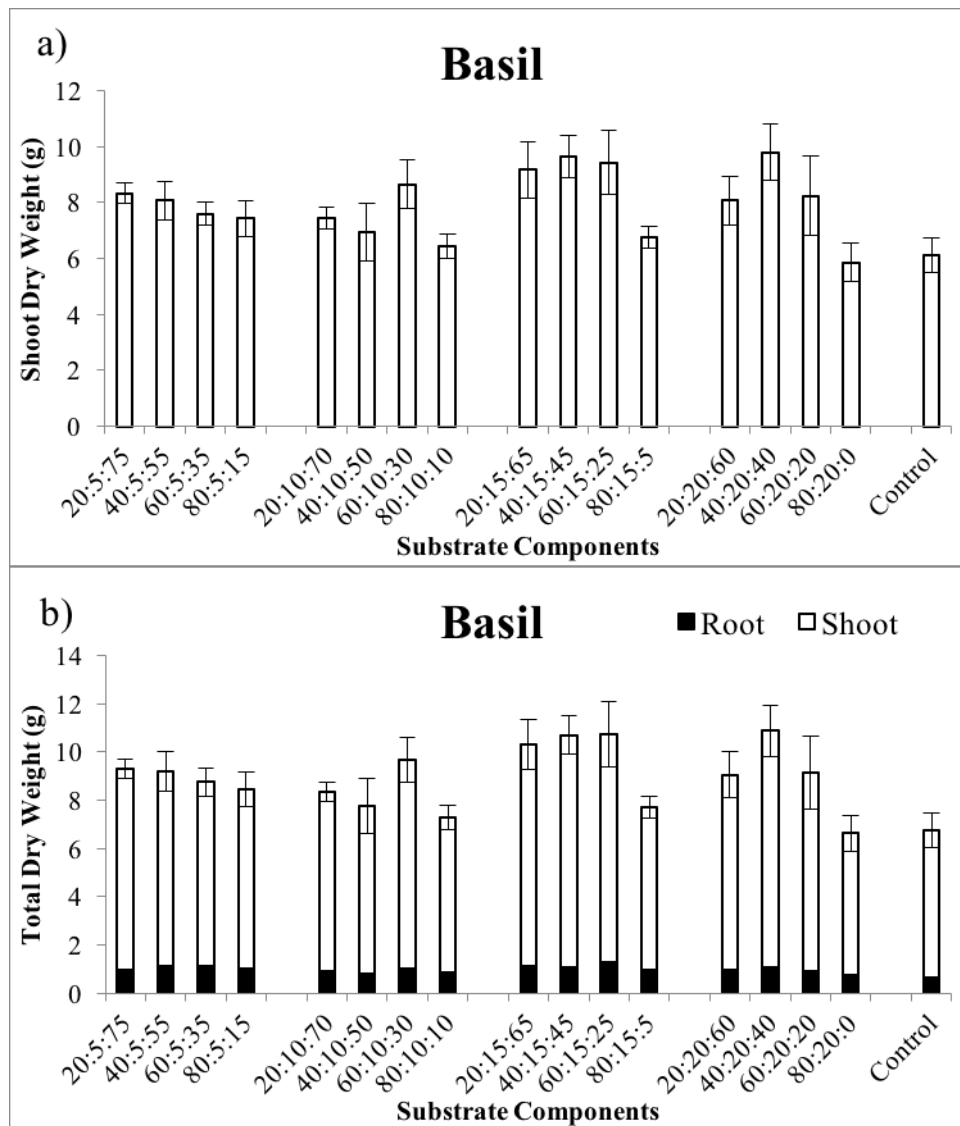


Figure S2. Shoot (a) and total (b) dry weight (mean $\pm$ standard error) per basil plant harvested at 9 weeks after transplanting. The ratios on the X-axis indicate the percentage ratio of biochar to vermicompost to commercial substrate (by volume). The control was 100% commercial substrate (Berger BM7 35BKS). There is no significant difference among all the treatments at $p < 0.05$ ($n = 6$).

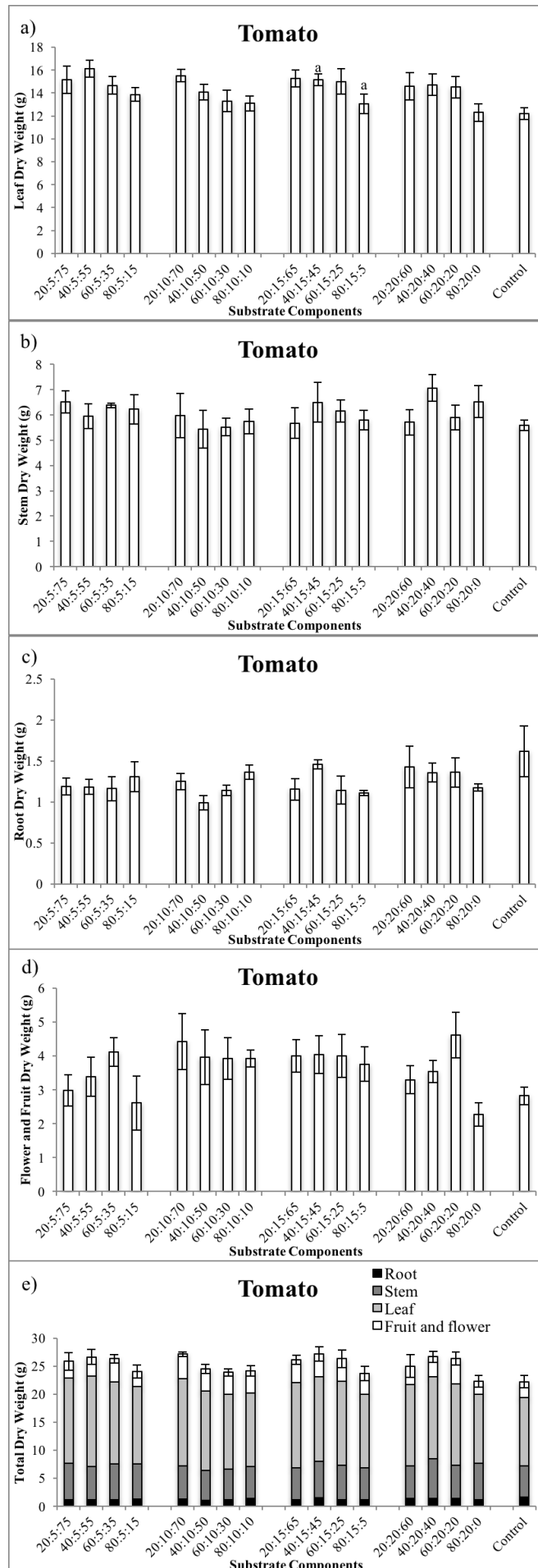


Figure S3. Leaves (**a**), stem (**b**), root (**c**), combined flower and fruit (**d**), and total (**e**) dry weight (mean $\pm$ standard error) per tomato plant harvested at 9 weeks after transplanting. The ratios on the X-axis indicate the percentage ratio of biochar to vermicompost to commercial substrate (by volume). The control was 100% commercial substrate (Berger BM7 35BKS). There is no significant difference among all the treatments at $p < 0.05$ ($n = 6$).