

Table S1. Relative amounts (%) of volatile organic compounds emitted from fresh cucumber leaves sprayed with four caraway extracts (C1-C4) and control treatments: water (C1), glyphosate (C2), and azadirachtin (C3) (based on Table 4)

VOC	C2	C3	E1	E2	E3	E4	C1
1	1.28a	0.80a	2.22a	1.73a	2.44a	2.31a	2.83a
2	55.67a	51.18ab	48.29ab	47.59ab	53.09a	61.68a	26.57b
3	17.28a	0.00b	0.00b	0.00b	1.14b	1.41b	0.00b
4	4.56a	4.42a	4.65a	6.35a	8.23a	10.49a	5.84a
5	1.28a	6.60ab	13.61b	9.54ab	1.41a	0.00a	3.79ab
6	0.99a	0.00b	0.00b	0.00b	0.00b	0.00b	0.00b
7	1.81a	4.05ab	24.09c	25.07c	25.02.c	18.84c	10.72b
8	0.00a	3.34ab	0.00a	0.00a	0.00a	0.00a	7.34b
9	0.76a	4.47b	0.00a	0.00a	0.00a	0.00a	0.00a
10	1.84abc	2.01ab	1.18bc	1.48abc	1.58abc	0.81c	2.42a
11	0.82a	0.86ab	1.75cd	2.43c	1.69cd	1.61bd	1.85cd
12	0.38a	0.91b	0.00c	0.00c	0.00c	0.00c	0.00c
13	1.78a	0.00b	0.00b	0.00b	0.00b	0.00b	0.00b
14	0.40a	1.90b	0.00a	0.59a	0.00a	0.39a	0.66ab
15	0.40a	0.34a	0.00a	0.00a	0.37a	0.00a	0.21a
16	0.00a	1.04b	0.00a	0.75bc	0.31ac	0.18ac	0.57abc
17	0.00a	11.4b	0.00a	0.00a	0.00a	0.00a	16.14b
18	0.00a	0.00a	0.00a	0.00a	0.00a	0.00a	0.66a
19	0.00a	0.11a	0.00a	0.00a	0.00a	0.00a	0.62b
20	0.57a	3.64a	0.87a	1.03a	1.28a	0.00a	16.76b
21	0.45a	1.46b	0.00c	0.00c	0.00c	0.00c	0.00c
22	1.92a	0.56a	0.94b	1.85b	1.26ab	0.62b	0.75ab
23	3.41a	0.43b	2.40ab	1.59ab	1.62ab	1.66ab	1.88ab
24	1.41a	0.49b	0.00b	0.00b	0.00b	0.00b	0.39b
25	2.95a	0.00b	0.00b	0.00b	0.00b	0.00b	0.00b

Means in rows indicated with the same letter do not differ according to Tuckey test ($p > 0.05$)

Table S2. Effect of four caraway extracts (C1 – C4) and water (C1), glyphosate (C2), and azadirachtin application on cucumber photosynthetic apparatus characterizing functional parameters ten days after treatment.

Parameter	C2	C3	E1	E2	E3	E4	C1
F ₀	3951a	14854b	14458b	13954b	15083b	15231b	13417b
F _v	-145a	40390b	45699b	43021b	44380b	44944b	41797b
F _M	3807a	55243b	60157b	56975b	59463b	60175b	55215b
QY	0.01a	0.84b	0.84b	0.83b	0.83b	0.84b	0.84b
F _m /F ₀	0.65a	3.75b	4.17c	4.08bc	3.96bc	3.95bc	4.12bc
F _v /F ₀	-0.03a	2.75b	3.17c	3.08bc	2.96bc	2.95bc	3.12bc
F _v /F _M	-0.04a	0.73b	0.76c	0.75bc	0.75bc	0.75bc	0.76bc
M ₀	-0.05a	1.30b	1.17b	1.20b	1.23c	1.27b	1.16b
Area	398110a	19169094b	27455785b	25939221b	30697432c	27987624b	27834149b
			c	c		c	c
Ψ ₀	0.94a	0.37b	0.45b	0.44b	0.45b	0.41b	0.44b
ΦE ₀	-0.03a	0.27b	0.34c	0.33bc	0.33bc	0.31bc	0.33bc
ΦD ₀	0.27a	0.27b	0.24c	0.24bc	0.25bc	0.25bc	0.24bc
ΦP ₀	1009.60a	960.80b	969.70b	967.70b	970.50b	969.10b	968.30b
PI _{ABS}	0.00a	0.61b	0.94b	0.88b	0.82b	0.72b	0.91b
ABS/RC	17.57a	2.82a	2.80a	2.87a	2.98a	2.88a	2.73a
TR ₀ /RC	-0.79a	2.05b	2.13b	2.16b	2.22b	2.15b	2.07b
ET ₀ /RC	-0.74a	0.76a	0.96a	0.96a	0.99a	0.88a	0.91a
DI ₀ /RC	18.36a	0.76a	0.67a	0.70a	0.76a	0.73a	0.66a