SUPPLEMENTARY DATA

Fig. S1 Hemiparasitic *Rhinanthus alectorolophus* and wheat as its host species during (A) the first and (B) the second physiological measurements conducted before and in peak flowering period (55 and 73 days after *Rhinanthus* sowing). Both images demonstrate the same plants cultivated under high irrigation and nutrient treatment.

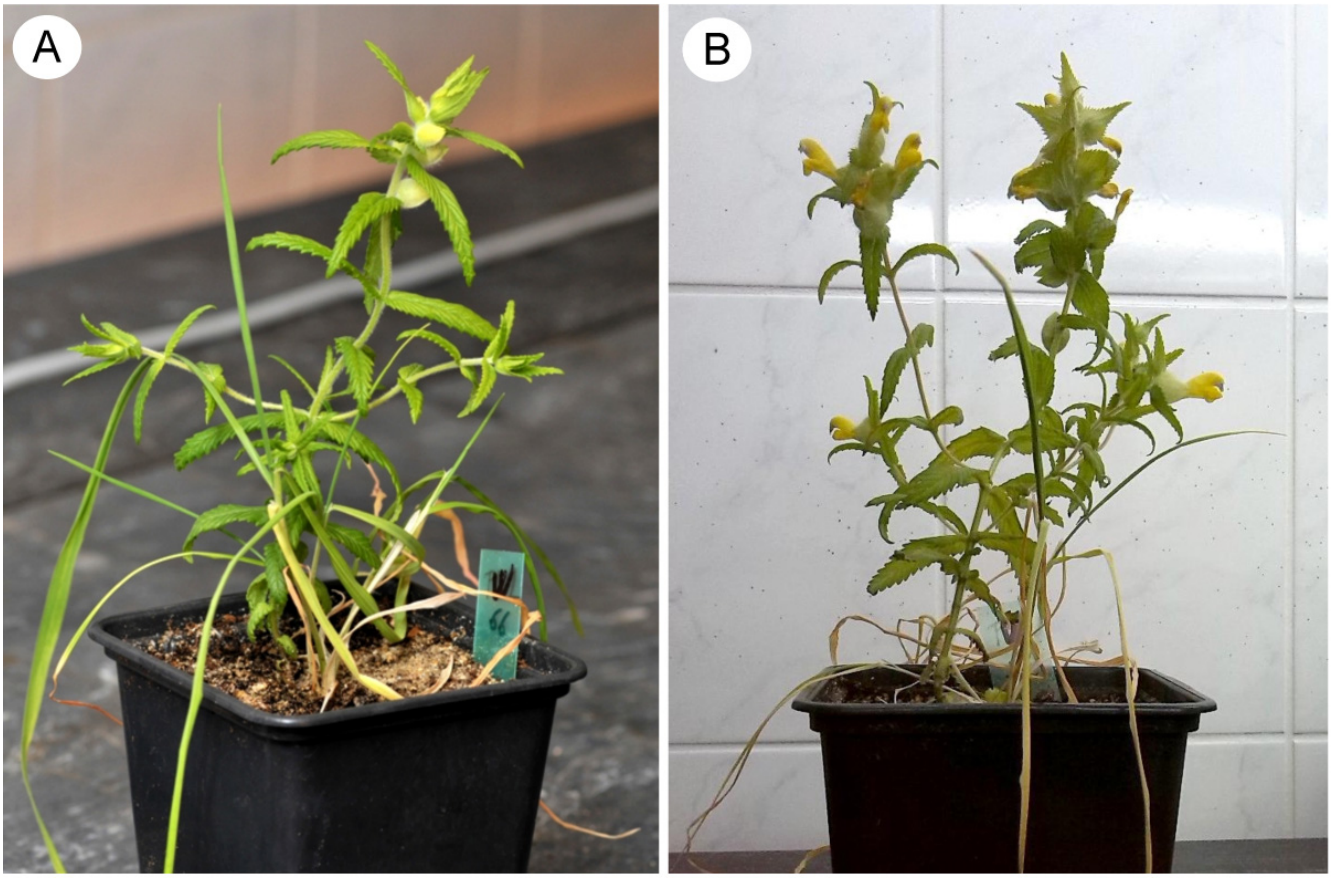

Fig. S2 Stalked and sessile hydathode trichomes on the abaxial leaf surface of *Rhinanthus alectorolophus* in water as mounting medium. No water secretion was observed. Scale bar indicates 50 µm.

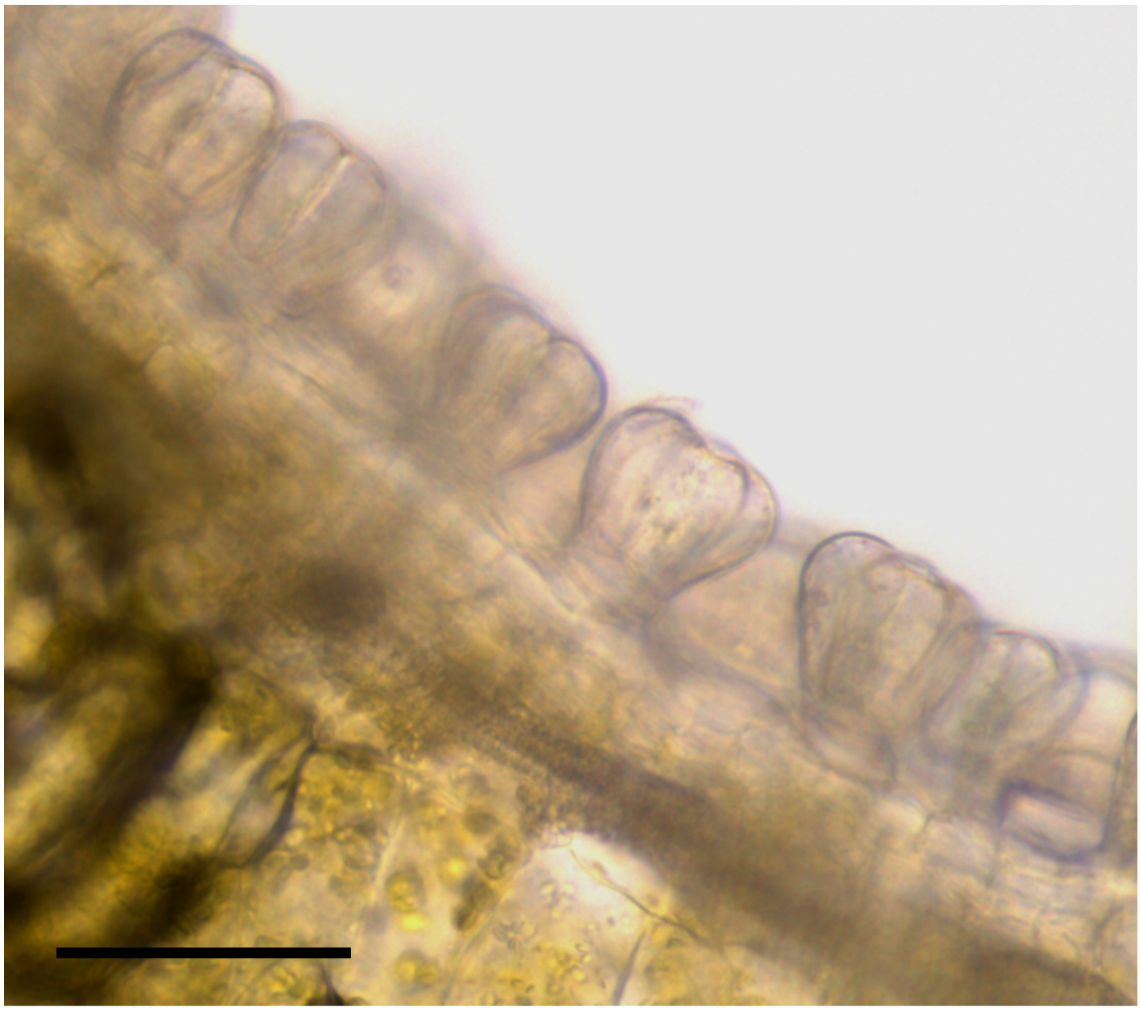

Fig. S3 Ordination diagrams (PCA) correlating response data (respiration, transpiration, drops, and RWC – relative water content of substrate) and environmental variables (nutrient and water treatments) in (A) non-flowering and (B) flowering plants. Each symbol relates to one examined plant growing under particular treatment (N+, N–, W+, W–). Numbers add information about drops on the abaxial leaf surfaces of examined plants classified on an ordinal scale.

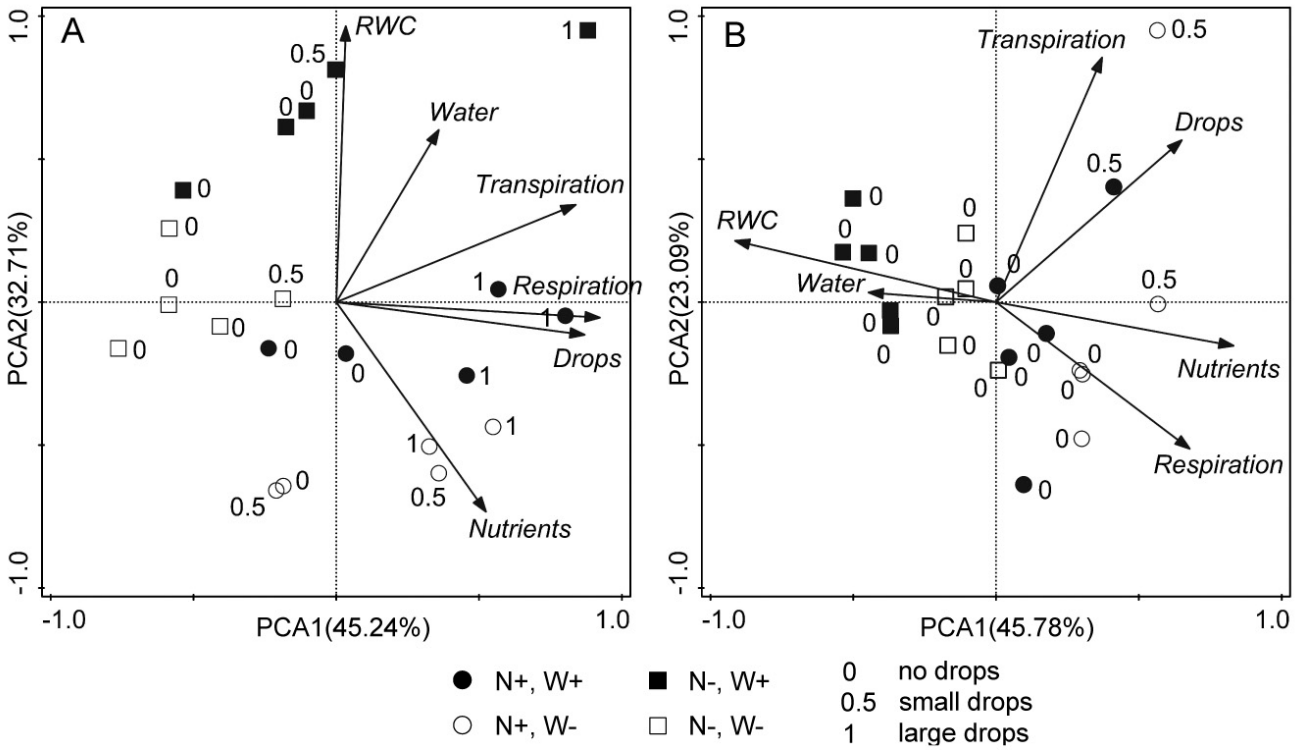

Table S1 Primary data recorded and used for the study. Respiration rate, transpiration rate and relative water content of substrate (RWC) were measured in five non-flowering (55 DAS) and five flowering (73 DAS) plants per each treatment. DAS corresponds to days after Rhinanthus sowing. The leaves of examined plants were checked for water drops before the measurements and classified according to drop size and density to three groups: no drops (0), small drops (0.5), and large drops (1).

Plant	Dataset	Treatment	Drops	Respiration (μmol CO_2 m^{-2} s^{-1})	Transpiration (mmol H_2O m^{-2} s^{-1})	RWC (%)
1	55 DAS	N–, W–	0	0.31	0.82	10.1
2			0	0.45	1.84	23.1
3			0.5	1.52	1.92	15.4
4			0	0.52	1.78	13.2
5			0	1.18	2.11	9.8
6		N–, W+	0.5	1.34	2.52	33
7			0	1.29	3.16	24.4
8			1	3.17	4.94	33.4
9			0	1.27	2.67	23.7
10			0	0.58	1.13	19.4
11		N+, W–	0.5	1.13	1.06	5.6
12			1	1.79	2.69	8.2
13			1	1.98	4.02	7
14			0.5	2.88	2.58	4.5
15			0	1.68	1.68	3.5
16		N+, W+	0	1.34	0.87	13
17			1	2.91	3.54	12.8
18			0	1.45	2.67	7
19			1	1.90	3.34	16.3
20			1	1.92	2.54	7.2
21	73 DAS	N–, W–	0	1.42	1.01	22.4
22			0	1.73	1.66	29.8
23			0	2.08	1.32	21
24			0	1.23	1.86	19
25			0	1.18	1.26	19.9
26		N–, W+	0	0.88	1.17	42.1
27			0	1.18	1.40	41.2
28			0	0.66	1.52	36.1
29			0	1.44	1.16	36
30			0	1.60	1.11	39.4
31		N+, W–	0.5	2.07	1.28	3.6
32			0	1.76	1.41	3.8
33			0	1.79	1.41	3.3
34			0	1.98	0.99	3.7
35			0.5	1.44	3.11	8
36		N+, W+	0	1.30	1.63	16.3
37			0	2.05	0.53	12.4
38			0.5	1.74	1.96	8.4
39			0	1.25	1.09	4.3
40			0	1.91	1.73	12.2