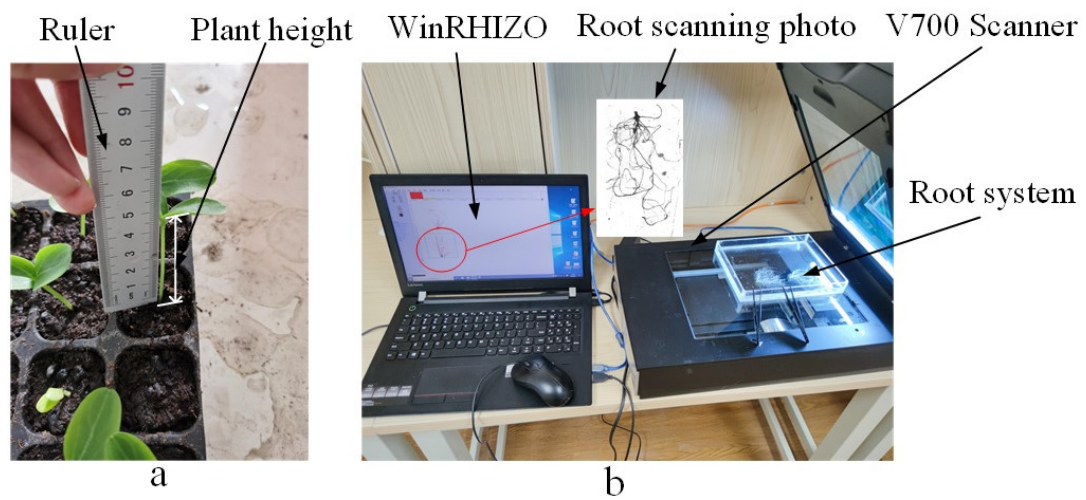
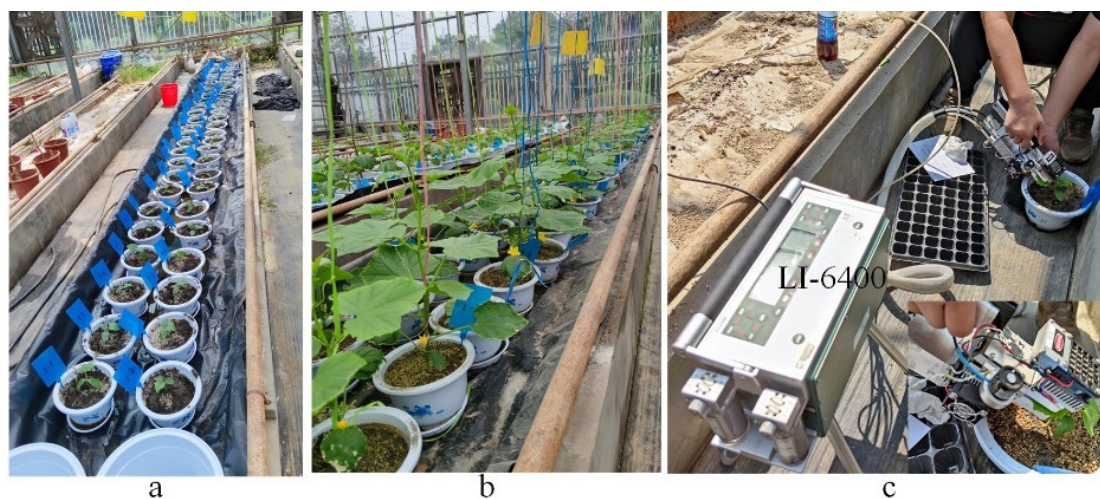


**Supplementary Figure S1.** The cultivation of the seedlings before transplanting: (a) The plug trays filled with substrate; (b) The incubator; (c) The parameter setting of the incubator.



**Supplementary Figure S2.** The measurement of plant height and total root length: **(a)** Measurement of plant height; **(b)** Measurement of total root length.



**Supplementary Figure S3.** The cultivation of the seedlings after transplanting: (a) Seedlings transplanted into the flowerpot; (b) Seedlings cultivated to flowering stage; (c) The measurement of leaf gas exchange parameters.

**Supplementary Table S1.** The implication of 27 numbers and CK on x-axis in the Figure.

Numbers	Biochar rate	Water content	N-fertilization
1	5%	80%	0%
2	5%	65%	0%
3	5%	50%	0%
4	5%	80%	50%
5	5%	65%	50%
6	5%	50%	50%
7	5%	80%	100%
8	5%	65%	100%
9	5%	50%	100%
10	10%	80%	0%
11	10%	65%	0%
12	10%	50%	0%
13	10%	80%	50%
14	10%	65%	50%
15	10%	50%	50%
16	10%	80%	100%
17	10%	65%	100%
18	10%	50%	100%
19	15%	80%	0%
20	15%	65%	0%
21	15%	50%	0%
22	15%	80%	50%
23	15%	65%	50%
24	15%	50%	50%
25	15%	80%	100%
26	15%	65%	100%
27	15%	50%	100%
CK	0%	100%	0%