

## **Supporting information:**

### **Nitrogen and phosphorus co-doped carbon dots for the growth promotion of water spinach**

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**Table S1.** Effect of different concentrations of carbon dots on the mean values of plant height, stem thickness, maximum functional leaf area, and number of leaves of water spinach under the leaf spraying method. Different letters indicate significant differences for the respective parameters at  $p < 0.05$ .

<b>Concentration (mg/L)</b>	<b>Height (cm)</b>	<b>stem thickness (cm)</b>	<b>Maximum functional leaf area (cm<sup>2</sup>)</b>	<b>The mean number of leaves</b>
0	40.505 ± 4.549a	4.535 ± 0.593c	4.740 ± 0.174a	8.333 ± 0.816c
25	40.781 ± 3.911a	5.233 ± 0.853ab	6.463 ± 0.126ab	9.000 ± 0.894ab
50	40.815 ± 2.112a	5.527 ± 0.515a	6.525 ± 0.621a	10.17 ± 1.472a
100	38.488 ± 3.408a	4.694 ± 0.535ab	5.625 ± 0.1791a	9.000 ± 0.632ab
200	35.935 ± 3.949a	4.646 ± 0.473ab	5.099 ± 0.122a	8.667 ± 0.816ab
400	26.227 ± 2.821b	3.616 ± 0.419d	3.542 ± 0.740ab	7.833 ± 0.983c

**Table S2.** Effect of different concentrations of carbon dots on the mean values of plant height, stem thickness, maximum functional leaf area, and number of leaves of water spinach under the root spraying method. Different letters indicate significant differences for the respective parameters at  $p < 0.05$ .

<b>Concentration (mg/L)</b>	<b>Height (cm)</b>	<b>stem thickness (cm)</b>	<b>Maximum functional leaf area (cm<sup>2</sup>)</b>	<b>The mean number of leaves</b>
0	40.505 ± 4.549a	4.535 ± 0.593b	4.740 ± 0.174a	8.333 ± 0.816b
25	43.325 ± 7.082a	5.011 ± 0.603b	6.442 ± 0.256a	9.167 ± 1.169ab
50	44.200 ± 3.416a	5.518 ± 0.687ab	6.508 ± 0.161a	9.500 ± 0.837a
100	45.990 ± 5.372a	6.322 ± 0.395a	7.097 ± 0.208a	10.33 ± 1.633a
200	42.283 ± 6.035a	5.485 ± 0.574ab	4.838 ± 0.114a	9.333 ± 1.033a
400	33.767 ± 3.543b	4.683 ± 0.503b	4.435 ± 0.144a	8.167 ± 1.329b