

**Table S1.** Two-way factorial ANOVA. Statistical results (F-statistic and P-value) of the two-way factorial ANOVA with water and phosphorus addition treatment and their interaction (when significant).

Dependent variables	Independent variables		
	Water	Phosphorus	Water x phosphorus
Assimilative shoot RWC	F = 529 P < 0.0001	F = 51.3 P < 0.0001	No significant
Aboveground biomass	F = 358 P < 0.0001	F = 6.741 P = 0.029	No significant
Belowground biomass	F = 1086 P < 0.0001	F = 63.7 P < 0.0001	F = 12.1 P = 0.0084
Plant height	F = 830 P < 0.0001	F = 23.4 P = 0.00089	F = 6.48 P = 0.034
Root:Shoot	F = 1.54 P = 0.25	F = 6.44 P = 0.032	No significant
Chl-a	F = 41.9 P = 0.00011	F = 44.3 P < 0.0001	No significant
Chl-b	F = 30.1 P = 0.00058	F = 40.6 P = 0.00022	F = 5.68 P = 0.044
Chla/b	F = 14.4 P = 0.0056	F = 5.65 P = 0.045	F = 28.6 P = 0.00069
Soluble proteins	F = 986 P < 0.0001	F = 58.3 P < 0.0001	F = 62.7 P < 0.0001
Proline	F = 2197 P < 0.0001	F = 160 P < 0.0001	F = 245 P < 0.0001
Soluble sugars	F = 663 P < 0.0001	F = 5.97 P = 0.040	F = 40.0 P = 0.00011
Starch	F = 87.0 P < 0.0001	F = 19.6 P = 0.0022	F = 8.41 P = 0.120
Soluble sugars:starch	F = 445 P < 0.0001	F = 0.374 P = 0.56	F = 27.7 P = 0.00076
Non-structural carbohydrates	F = 200 P < 0.0001	F = 18.6 P = 0.0026	F = 13.3 P = 0.0065
Total protein	F = 41.6 P = 0.0002	F = 64.1 P < 0.0001	F = 9.26 P = 0.016
Total nitrogen	F = 49.1 P < 0.0001	F = 14.5 P = 0.0042	No significant
Potassium	F = 64.2 P < 0.0001	F = 5.42 P = 0.045	No significant
Magnesium	F = 55.3 P < 0.0001	F = 2.12 P = 0.18	No significant
MDA	F = 0.36 P = 0.56	F = 242 P < 0.0001	F = 10.56 P = 0.012
H <sub>2</sub> O <sub>2</sub>	F = 2285 P < 0.0001	F = 1115 P < 0.0001	F = 24.0 P = 0.0012
SOD	F = 2.56 P = 0.14	F = 1.94 P = 0.20	No significant
CAT	F = 57.5 P < 0.0001	F = 836 P < 0.0001	F = 35.0 P = 0.00035
POD	F = 2061 P < 0.0001	F = 77.2 P < 0.0001	F = 34.3 P = 0.00038
NO <sub>3</sub> <sup>-</sup>	F = 14.1 P = 0.0045	F = 3.16 P = 0.11	No significant
NH <sub>4</sub> <sup>+</sup>	F = 207 P < 0.0001	F = 58.7 P < 0.0001	F = 56.7 P < 0.0001
Nitrate reductase	F = 246 P < 0.0001	F = 6.55 P = 0.034	F = 6.23 P = 0.037
Glutamine synthetase	F = 12.36 P = 0.0079	F = 25.5 P = 0.00098	F = 10.53 P = 0.012
Glutamine oxoglutarate aminotransferase	F = 12.7 P = 0.0068	F = 5.19 P = 0.048	No significant