**Table S1** Chemical composition of nutrient solution used in this study

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Compounds | Unit | N4S0.1 | N4S2.4 | N8S0.1 | N8S2.4 |
| KH2PO4 | mmol·L-1 | 0.4 | 0.4 | 0.4 | 0.4 |
| KCl | mmol·L-1 | 1.8 | -- | 1.8 | -- |
| K2SO4 | mmol·L-1 | -- | 0.9 | -- | 0.9 |
| MgSO4 | mmol·L-1 | 0.1 | 0.5 | 0.1 | 0.5 |
| MgCl2 | mmol·L-1 | 0.4 | -- | 0.4 | -- |
| CaCl2 | mmol·L-1 | 2.5 | 1.5 | 2.5 | 1.5 |
| Ca(NO3)2 | mmol·L-1 | -- | 1.0 | -- | 1.0 |
| (NH4)2SO4 | mmol·L-1 | -- | 1.0 | -- | 1.0 |
| NH4NO3 | mmol·L-1 | 2.0 | -- | 4.0 | 2.0 |
| H3BO3 | μmol·L-1 | 18.0 | 18.0 | 18.0 | 18.0 |
| (NH4)6Mo7O24 | μmol·L-1 | 0.1 | 0.1 | 0.1 | 0.1 |
| CuSO4 | μmol·L-1 | 0.15 | 0.15 | 0.15 | 0.15 |
| ZnCl2 | μmol·L-1 | 0.15 | 0.15 | 0.15 | 0.15 |
| MnCl2 | μmol·L-1 | 3.5 | 3.5 | 3.5 | 3.5 |
| Fe-EDTA | μmol·L-1 | 36.0 | 36.0 | 36.0 | 36.0 |



**Fig.S1** Phenotype of leaf position and leaf gas exchange parameters. **a**, leaf position in main stem; **b**, net photosynthetic rate; **c**, stomatal conductance; **d**, intercellular CO2 concentration; **e**, transpiration rate. Data were presented as mean ± SE (*n* = 4). Different letters on the bars indicates significant difference among treatments at *P* < 0.05 using the method of *LSD*. Scar bar=1 cm in **a**. LN, low nitrogen; HN, high N; LS, low sulfur; HS, high sulfur.



**Fig.S2** Total amounts of leaf nitrogen (**a**) and sulfur (**b**) based on per plant. Data were presented as mean ± SE (*n* = 4). Different letters on the bars indicates significant difference among treatments at *P* < 0.05 using the method of *LSD*. LN, low nitrogen; HN, high N; LS, low sulfur; HS, high sulfur.



**Fig.S3** Contents of sulfate (**a**), S-adenosyl-L-homocysteine (**b**), and S-adenosyl-methionine (**c**). Data were presented as mean ± SE (*n* = 4). Different letters on the bars indicates significant difference among treatments at *P* < 0.05 using the method of *LSD*. LN, low nitrogen; HN, high N; LS, low sulfur; HS, high sulfur.