**TABLE S2 |** The comparison of *nifH* copy numbers at the tillering and heading stages from the same plot with paired samples t test

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Paired Differencesa |  |  |  |
| CO2 level | N fertilization level | samples | Mean | Std. Deviation | *t* | df | Sig. (2-tailed)b |
| aCO2 | aN | roots | 1.32E+09 | 2.19E+08 | 10.462 | 2 | 0.009 |
| aCO2 | eN | roots | 3.28E+08 | 3.01E+07 | 18.862 | 2 | 0.003 |
| eCO2 | aN | roots | 1.33E+09 | 1.51E+08 | 15.225 | 2 | 0.004 |
| eCO2 | eN | roots | 1.77E+09 | 9.79E+07 | 31.343 | 2 | 0.001 |
| aCO2 | aN | rhizosphere soils | 1.67E+08 | 3.45E+07 | 8.401 | 2 | 0.014 |
| aCO2 | eN | rhizosphere soils | -1.50E+08 | 3.38E+07 | -7.684 | 2 | 0.017 |
| eCO2 | aN | rhizosphere soils | 9.67E+07 | 3.82E+07 | 4.381 | 2 | 0.048 |
| eCO2 | eN | rhizosphere soils | 8.80E+07 | 1.35E+07 | 11.329 | 2 | 0.008 |

aCO2, ambient CO2; eCO2, elevated atmospheric CO2. aN, no N fertilization; eN, elevated N fertilization.

a *nifH* copy numbers at the heading stage minus those at the tillering stage.

b *nifH* copy numbers of both roots and rhizosphere soils at the heading stages were significantly higher than those at the tillering stage (*p* < 0.05).