

**Table S4.** The abundance of *nifH* gene in soil root zone in each sample (copies/g, Mean  $\pm$  standard error). “p” represents the significant difference between different treatments in the same period.

Periods	<i>nifH</i> $\times 10^5$				<i>p</i>
	A	B	CK		
S1	5.11 $\pm$ 0.32a	1.53 $\pm$ 0.31b	1.07 $\pm$ 0.11b		<b>&lt; 0.001</b>
S2	3.27 $\pm$ 0.22a	2.73 $\pm$ 0.33a	0.58 $\pm$ 0.04b		<b>&lt; 0.001</b>
S3	6.70 $\pm$ 0.57a	5.08 $\pm$ 0.72ab	3.79 $\pm$ 0.49b		0.008
S4	2.99 $\pm$ 0.63b	7.95 $\pm$ 0.78a	2.02 $\pm$ 0.37b		<b>&lt; 0.001</b>