

Table S2. Significance analysis of the difference in abundance of functional genes of nitrogen cycle between different treatments and control (%) (2022)

Gene	Nitrogen cycle function type	T1 VS T0	T2 VS T0	T3 VS T0	T4 VS T0
<i>AOA-amoA</i>	Nitrification ($\text{NH}_4^+ \rightarrow \text{NH}_2\text{OH}$)	14.72**	14.72**	19.63**	19.39**
<i>AOB-amoA</i>	Nitrification ($\text{NH}_4^+ \rightarrow \text{NH}_2\text{OH}$)	5.40**	-25.69**	-59.29**	-75.63**
<i>nxrA</i>	Nitrification ($\text{NH}_2\text{OH} \rightarrow \text{NO}_3^-$)	173.52**	131.71**	17.60**	-35.89**
<i>narG</i>	Denitrification ($\text{NO}_3^- \rightarrow \text{NO}_2^-$)	41.76**	42.76**	26.37**	36.81**
<i>nirS</i>	Denitrification ($\text{NO}_2^- \rightarrow \text{NO}$)	66.05**	46.30**	-11.11**	-46.17**
<i>norB</i>	Denitrification ($\text{NO} \rightarrow \text{N}_2\text{O}$)	-33.14**	-41.14**	-42.90**	-80.63**
<i>nosZ</i>	Denitrification ($\text{N}_2\text{O} \rightarrow \text{N}_2$)	65.06**	48.08**	10.54**	-29.02**
<i>nifh</i>	Nitrogen fixation ($\text{N}_2 \rightarrow \text{NH}_4^+$)	187.42**	166.81**	96.31**	10.63
<i>gdh</i>	Organic nitrogen synthesis ($\text{NH}_4^+ \rightarrow \text{Organic N}$)	85.36**	74.22**	24.04**	-19.86**
<i>Urec</i>	Ammonification ($\text{Organic N} \rightarrow \text{NH}_4^+$)	114.28**	118.18**	16.88**	-34.42**