

Supplementary Material for

Characteristics and influencing factors of N₂O emissions from different soil horizons of hydromorphic and gleyed paddy soils

This file includes:

Supplementary Table S1

Supplementary Tables

Table S1 Primer information and reaction programs of quantitative PCR for selected functional genes

Gene	Primers	Primer sequences	Length	Qpcr programme	Reference
<i>AOA-amoA</i>	Arch-amoAF	STAATGGTCTGGCTTAGACG	635 bp	95°C, 5min; 40×(94°C, 30s; 58°C, 30s; 72°C, 30s with plate read);	Francis et al., 2005
	Arch-amoAR	GCGGCCATCCATCTGTATGT		Melt curve 60.0°C to 95.0°C, increment 0.3°C	
<i>AOB-amoA</i>	amoA-1F	GGGGTTTCTACTGGTGGT	491 bp	95°C, 5min; 40×(94°C, 30s; 58°C, 30s; 72°C, 30s with plate read);	Rotthauwe et al., 1997
	amoA-2R	CCCCTCKGSAAAGCCTTCTTC		Melt curve 60.0°C to 95.0°C, increment 0.3°C	
<i>NirK</i>	nirK876F	ATYGGCGGVAYGGCGA	165 bp	95°C, 5min; 40×(94°C, 30s; 58°C, 30s; 72°C, 30s with plate read);	Henry et al., 2004
	nirK1040R	GCCTCGATCAGRTTGTGGTT		Melt curve 60.0°C to 95.0°C, increment 0.3°C	
<i>NosZ</i>	nosZ2FHenry	CGCRACGGCAASAAGGTSMSSGT	267 bp	95°C, 5min; 40×(94°C, 30s; 58°C, 30s; 72°C, 30s with plate read);	Henry et al., 2006
	nosZ2RHenry	CAKRTGCAKSGCRTGGCAGAA		Melt curve 60.0°C to 95.0°C, increment 0.3°C	

Table S2 The ratios of AOB/AOA and *nirK/nosZ* genes in hydromorphic and gleyed paddy soils after incubating for 21 days

Soils	Layers	AOB/AOA			<i>nirK/nosZ</i>		
		60%WHC	100%WHC	200%WHC	60%WHC	100%WHC	200%WHC
Hydromorphic paddy soil	0-10 cm	4.21	10.02	15.37	6.06	7.38	7.66
	10-20 cm	4.58	19.91	23.65	5.78	7.40	4.89
	20-40 cm	6.18	14.98	37.01	2.61	4.59	3.02
Gley paddy soil	0-10 cm	11.51	13.70	22.67	9.46	12.99	9.78
	10-20 cm	4.37	37.46	43.92	6.16	9.25	8.47
	20-40 cm	0.64	4.28	18.78	4.03	6.02	11.17