Supplementary information

Accumulation of NO_2^- during drying periods stimulates soil N_2O emissions during subsequent rewetting events

S. Liu *[a], M. Schloter[b], N. Brüggemann[a]

[a] *Institute of Bio- and Geosciences – Agrosphere (IBG-3), Forschungszentrum Jülich GmbH, 52425 Jülich, Germany*

[b] *Research Unit for Comparative Microbiome Analysis; Helmholtz Zentrum München, 85764 Neuherberg, Germany*

***Corresponding author:**

Shurong Liu, address: Wilhelm-Johnen-Straße, 52428 Jülich; phone: 02461/61-5504; fax: 02461/61-2518; e-mail: shurongliu.edu@gmail.com

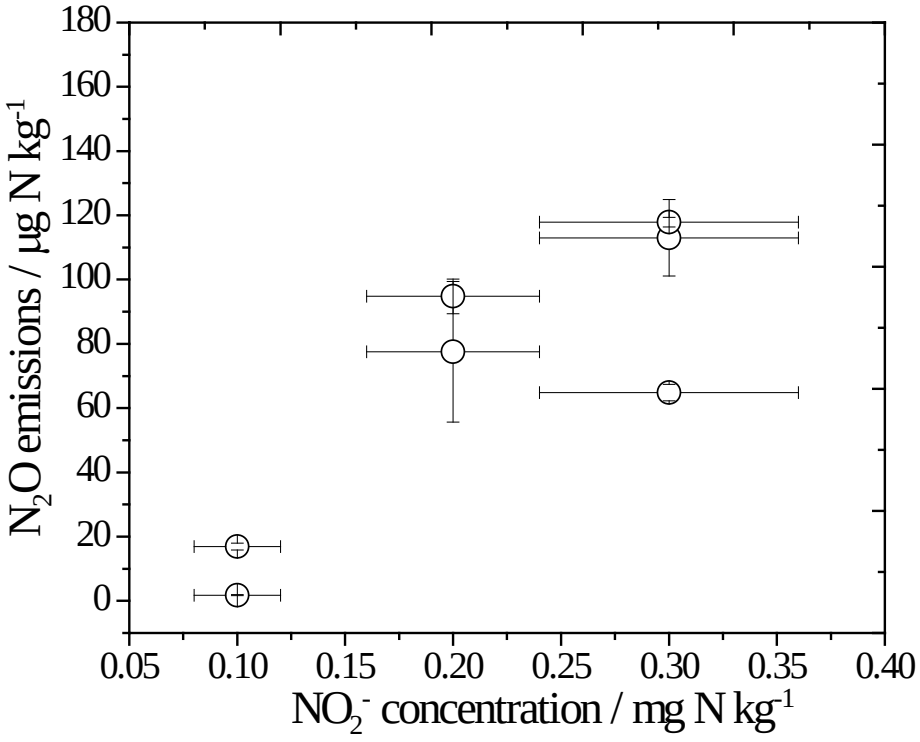

Figure S1 Correlation between soil NO_2^- concentrations accumulated in the air-dry soil and N_2O emissions during the subsequent rewetting process in different soils.

Table S1 Summary table of the ANOVA.

Source	Df	Sum of squares	Mean square	F ratio	Pr (> F)
Soil	**9**	2209.33	245.48	4744.08	<0.001
Sterile	1	118.83	118.83	2296.39	<0.001
Naddition	3	740.29	246.76	4768.86	<0.001
Time	**1**	1423.90	1423.90	27517.92	<0.001
Soil:sterile	8[§]	278.83	34.85	673.58	<0.001
Soil:Naddition	27	96.78	3.58	69.27	<0.001
Sterile:Naddition	**3**	5.52	1.84	35.55	<0.001
Soil:time	9	118.96	13.22	255.44	<0.001
Sterile:time	**1**	12.08	12.08	233.44	<0.001
Naddition:time	3	15.67	5.22	100.93	<0.001
Soil:sterile:Naddition	24	8.86	0.37	7.13	<0.001
Soil:sterile:time	8	75.89	9.49	183.32	<0.001
Soil:Naddition:time	27	18.48	0.68	13.22	<0.001
Sterile:Naddition:time	3	0.62	0.21	4.00	<0.001
Soil:sterile:Naddition:time	24	5.01	0.21	4.03	<0.001
Residuals	304	15.73	0.05		

[§] The data of F4 after γ-irradiation treatment was missing due to shortage of material, so there was only 8 degrees of freedom for the interaction soil:sterile.