

Supplementary materials

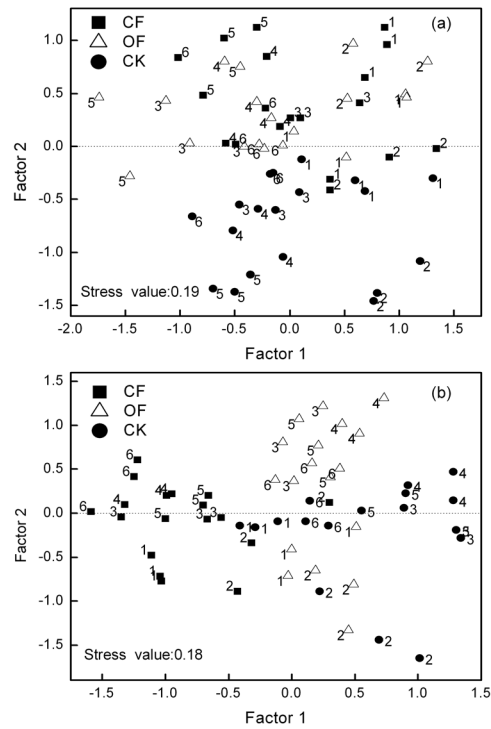


Fig. S1 Plots of nonmetric multidimensional scaling of microbial communities based T-RFLP data sets obtained from total bacteria (a), (b) total archaea among orOF, CF and CK treatments

Numbers (1, 2, 3, 4, 5 and 6 meaning May 17, July 19, Sept. 16, Nov. 18, Jan. 15, and Mar. 17, respectively) in the plots represent the sample time

Table S1 Description of primers, amplification details used for quantitative PCR and T-RFLP analysis

Method	Target group	Primer (reference)	Amplification details	Efficiency mean (%)	
qPCR	All bacteria	Eub338 (Stahl and Amann, 1991)	95 °C-60 s; 40 cycles: 95 °C-35 s, 55 °C-35 s, 72 °C-45 s	92.3	
		Eub518 (Muyzer <i>et al.</i> , 1993)			
	All archaea	Ar109f	95 °C -60 s,	40 cycles: 95 °C -5 s, 55 °C -30 s, 72 °C-45 s	97.2
		Ar912r (Lueders and Friedrich, 2000)			
	Archaeal <i>amoA</i> gene	amoAF	95 °C-60 s,	45 cycles: 95 °C-45 s, 53 °C-60 s, 72 °C-60 s	97.1
		amoAR (Francis <i>et al.</i> , 2005)			
	Bacterial <i>amoA</i> gene	<i>amoA</i> 1F	95 °C-60 s,	40 cycles: 95 °C-5 s, 55 °C-30 s, 72 °C-60 s	109.4
		<i>amoA</i> 2R (Rotthauwe <i>et al.</i> , 1997)			
	Bacterial <i>narG</i> gene	<i>narG-f</i>	6 touch down cycles: 95 °C-15 s, 63 °C-30 s (-1 °C) , 72 °C- 30 s	35 cycles: 95 °C-15 s, 58 °C-30 s, 72 °C-30 s, 80 °C- 30 s	90.8
		<i>narG-r</i> (Bru <i>et al.</i> , 2007)			
Bacterial <i>nirK</i> gene	<i>nirK</i> 876F	6 touch down cycles: 95 °C-15 s, 63 °C-30 s (-1 °C) , 72 °C- 30 s	35 cycles: 95 °C-15 s, 58 °C-30 s, 72 °C-30 s, 80 °C- 30 s	99.1	
	<i>nirK</i> 1040R (Henry <i>et al.</i> , 2004)				
Bacterial <i>nirS</i> gene	<i>nirS</i> cd3aF	95 °C-60 s,	45 cycles: 95 °C-30 s, 58 °C-30 s, 72 °C-45 s, 78 °C-45 s	93.8	
	<i>nirS</i> 3cd (Kandeler <i>et al.</i> , 2006)				
Bacterial <i>nosZ</i> gene	<i>nosZ</i> 2F	6 touch down cycles: 95 °C-15 s, 65 °C-30 s (-1 °C) , 72 °C- 30 s	35 cycles: 95 °C-15 s, 60 °C-30 s, 72 °C-30 s, 81 °C- 30 s	99.1	
	<i>nosZ</i> 2R (Henry <i>et al.</i> , 2006)				
T-RFLP	All bacteria	8f (Weisburg <i>et al.</i> , 1991)	95 °C-5 min; 30 cycles: 95 °C-30 s, 53 °C-30 s, 72 °C-1 min;	-	
		926r (Liu <i>et al.</i> , 1997)	72 °C-10 min.		
	All archaea	Ar109f Ar912r (Lueders and Friedrich, 2000)	95 °C-5 min; 35 cycles: 95 °C-30 s, 52 °C-30 s, 72 °C-1 min; 72 °C-10 min.	-	

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Table S2 Soil properties determined over a year period with organic fertilizer (OF), chemical fertilizer (CF), and unfertilized control (CK) treatments

Sample time	NH ₄ -N (mg/kg)			NO ₃ -N (mg/kg)			SOC (g/kg)			TN (g/kg)			pH		
	CF	OF	CK	CF	OF	CK	CF	OF	CK	CF	OF	CK	CF	OF	CK
May 17	122.38a (22.26)*	34.80b (8.88)	3.00c (0.87)	51.29a (15.72)	27.88b (3.67)	5.75c (1.11)	31.35a (3.34)	35.60a (1.69)	31.30a (2.18)	3.25a (0.10)	2.95ab (0.12)	2.82b (0.22)	3.53a (0.11)	3.75b (0.10)	3.81b (0.03)
July 19	24.11a (6.01)	8.45b (2.14)	4.61b (1.02)	65.77a (22.64)	21.53b (6.63)	10.66b (1.81)	34.23a (1.01)	36.90a (1.71)	30.49b (1.51)	3.04a (0.11)	2.69b (0.04)	2.46b (0.15)	3.38a (0.10)	3.91b (0.10)	3.93b (0.04)
Sept. 16	10.17a (1.25)	6.91a (2.60)	5.67a (1.76)	31.57a (5.52)	10.77b (0.98)	6.44c (0.72)	35.05a (1.15)	38.46b (1.17)	32.03c (0.72)	3.31a (0.32)	3.10b (0.33)	3.05c (0.11)	3.64a (0.10)	4.1b (0.13)	3.96b (0.06)
Nov. 18	109.56a (17.81)	22.85b (1.75)	4.92c (0.01)	41.53a (7.14)	19.05b (2.62)	7.92c (2.20)	34.83a (5.15)	37.95a (1.92)	30.12a (5.03)	3.37a (0.02)	2.98a (0.54)	2.46a (0.41)	3.84a (0.24)	4.10a (0.18)	3.95a (0.10)
Jan. 15	71.67a (9.59)	10.88b (1.43)	7.50c (0.57)	20.60a (3.15)	7.53b (1.24)	4.01c (0.67)	31.00ab (1.61)	36.60a (0.79)	28.87b (3.82)	3.32a (0.09)	2.78ab (0.20)	2.51b (0.32)	3.68a (0.11)	3.99b (0.09)	4.00b (0.03)
Mar. 17	62.77a (16.88)	24.69b (4.63)	17.56b (3.52)	38.60a (10.35)	7.93b (0.92)	4.49c (0.58)	36.28a (0.54)	38.44a (1.26)	33.68b (0.94)	3.31a (0.11)	2.98b (0.13)	3.04ab (0.15)	3.60a (0.02)	4.03b (0.07)	3.99b (0.02)

* Letters indicate, for each sampling time, significant differences ($p < 0.05$) among fertilizer. Values are triplicate means \pm SD