

Supplementary Information

Contrasting response of rice rhizosphere microbiomes to in situ cadmium-contaminated soil remediation

Zhongyi Cheng^{1,2}, Qinyu Han¹, Yan He^{1,2}, Jiachun Shi^{1*}, Laosheng Wu³ and Jianming Xu¹

¹ Zhejiang Provincial Key Laboratory of Agricultural Resources and Environment, Institute of Soil and Water Resources and Environmental Science, College of Environmental and Resource Sciences, Zhejiang University, Hangzhou 310058, China.

² Key Laboratory of Environment Remediation and Ecological Health, Ministry of Education, Hangzhou 310058, China.

³ Department of Environmental Sciences, University of California, Riverside, CA 92521, USA

**Corresponding author: Jiachun Shi; E-mail: jcshi@zju.edu.cn.*

Tel.: +86-571-8898-2486; Fax: +86-571-88982486

Supplementary figures

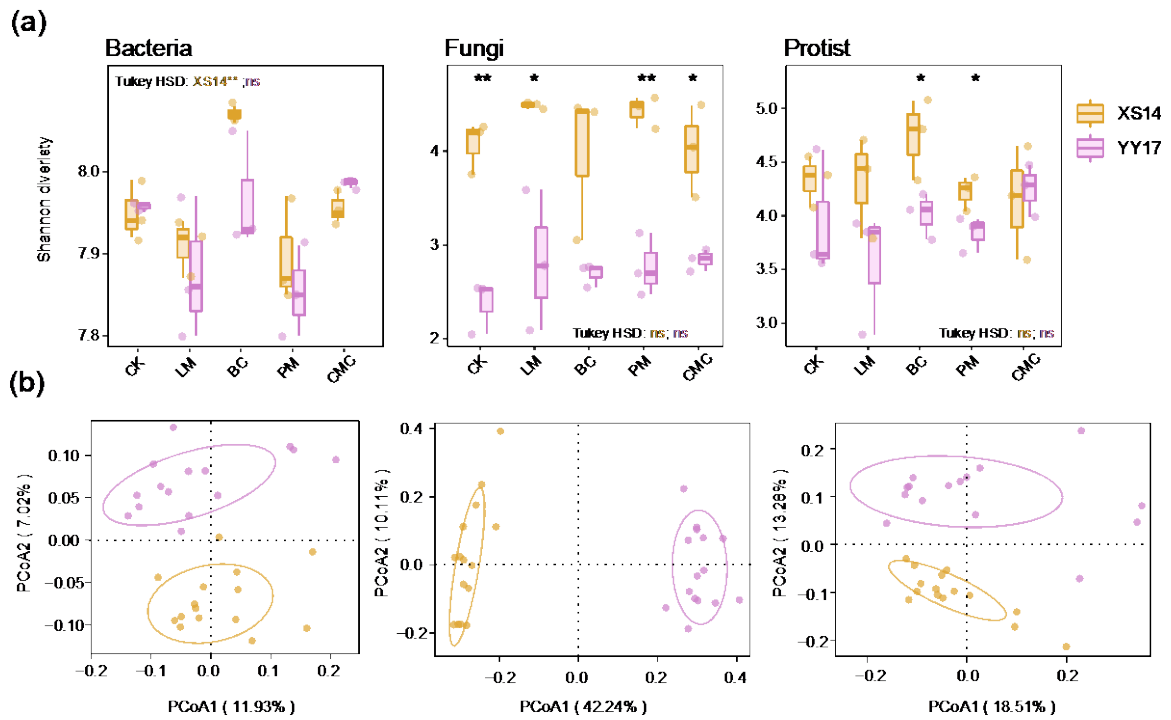


Fig. S1 (a) Changes in the Shannon diversity of the bacterial, fungal, and protistan communities of two rice cultivars across the five treatments. Asterisks indicate statistical significance between two rice cultivars using Student's t test (* $P < 0.05$, ** $P < 0.01$). The differences in Shannon diversity among five treatments within each rice cultivar was tested by Tukey' HSD test ($P < 0.05$, ns represents no significant differences). (b) PCoA analysis of microbial community in two rice cultivars.

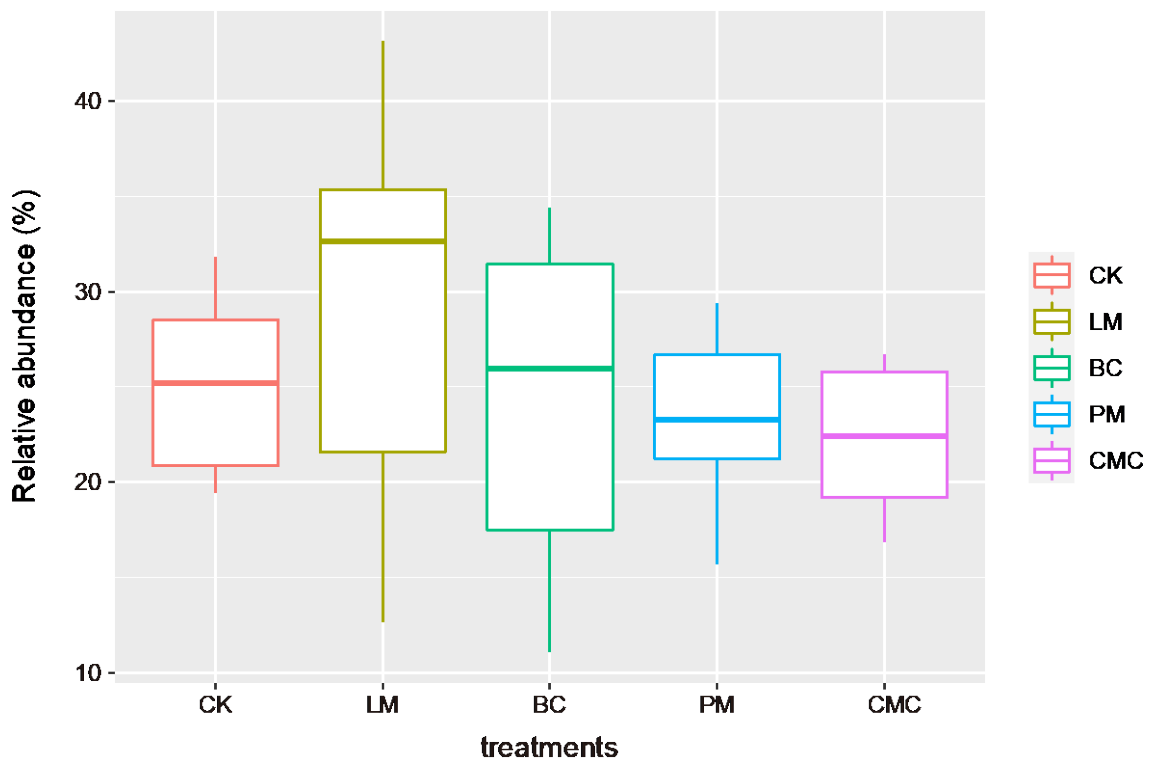


Fig. S2 The relative abundances of Cercozoa in different soil amendments treatments. LM lime, BC biochar, PM pig manure, CMC a commercial Mg-Ca-Si conditioner.

Table S1 Information of key hub nodes in Fig. 4.

Treatments	OTU	Kingdom	Phylum	Class	Order	Family
CK	bZOTU74	bacteria	Chloroflexi	Anaerolineae	Anaerolineales	Anaerolineaceae
LM	bZOTU34	bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Bradyrhizobiaceae
	fZOTU46	fungi	Basidiomycota	Agaricomycetes	unassigned	unassigned
	bZOTU1	bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Bradyrhizobiaceae
	bZOTU50	bacteria	Proteobacteria	Betaproteobacteria	unassigned	unassigned
	bZOTU32	bacteria	Proteobacteria	Gammaproteobacteria	unassigned	unassigned
	pZOTU8	protist	Cercozoa (Rhizaria)	Filosa-Sarcomonadea	Glissomonadida	Sandonidae
	fZOTU119	fungi	Ascomycota	Sordariomycetes	Hypocreales	unassigned
	fZOTU165	fungi	Ascomycota	Sordariomycetes	Hypocreales	Hypocreaceae
	pZOTU191	protist	Chlorophyta (Archaeplastida)	Chlorophyceae	Sphaeropleales	unassigned
	bZOTU90	bacteria	Proteobacteria	Betaproteobacteria	Nitrosomonadales	Gallionellaceae
	BC	fZotu78	fungi	Ascomycota	Sordariomycetes	Microascales
fZotu186		bacteria	Acidobacteria	Acidobacteria_Gp1	Gp1	unassigned
pZotu40		protist	Pseudofungi (Stramenopiles)	Oomycota	Oomycota_X	Peronosporales
pZotu182		protist	Cercozoa (Rhizaria)	Filosa-Sarcomonadea	Glissomonadida	Sandonidae
pZotu212		protist	Ciliophora (Alveolata)	Colpodea	Colpodea_X	Platyophryida
bZotu113		bacteria	Actinobacteria	Actinobacteria	Micrococcales	Intrasporangiaceae
PM	fZotu93	fungi	Ascomycota	unassigned	unassigned	unassigned
	bZotu460	bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	unassigned
	pZotu44	protist	Cercozoa (Rhizaria)	Endomyxa	Vampyrellida	Leptophryidae
	fZotu86	fungi	Rozellomycota	unassigned	unassigned	unassigned
	bZotu405	bacteria	Proteobacteria	Deltaproteobacteria	Myxococcales	Labilitrichaceae
	pZotu34	protist	Ochrophyta (Stramenopiles)	Xanthophyceae	Xanthophyceae_X	Xanthophyceae_XX
	bZotu351	bacteria	Chloroflexi	Anaerolineae	Anaerolineales	Anaerolineaceae
	fZotu73	fungi	Ascomycota	Dothideomycetes	unassigned	unassigned

	fZotu163	fungi	unassigned	unassigned	unassigned	unassigned
	fZotu122	fungi	Basidiomycota	Agaricomycetes	Agaricales	Strophariaceae
CMC	bZotu237	bacteria	Proteobacteria	Deltaproteobacteria	Myxococcales	Haliangiaceae
	fZotu186	fungi	Basidiomycota	Agaricomycetes	Agaricales	Strophariaceae
	fZotu89	fungi	Ascomycota	Dothideomycetes	unassigned	unassigned
	pZotu398	protist	Cercozoa (Rhizaria)	Filosa-Sarcomonadea	Glissomonadida	Allapsidae
	pZotu27	protist	Ochrophyta (Stramenopiles)	Bacillariophyta	Bacillariophyta_X	Raphid-pennate
	bZotu279	bacteria	Proteobacteria	Deltaproteobacteria	Desulfobacterales	Desulfobacteraceae
	pZotu278	protist	Cercozoa (Rhizaria)	Filosa-Granofilosea	Filosa-Granofilosea_X	Novel-Gran-6
	pZotu171	protist	Ciliophora (Alveolata)	Spirotrichea	Hypotrichia	Spirofilidae
	bZotu43	bacteria	Bacteroidetes	Chitinophagia	Chitinophagales	Chitinophagaceae
	fZotu29	fungi	Ascomycota	Sordariomycetes	Sordariales	Chaetomiaceae