

# Soil Microbial Community in Relation to Soil Organic Carbon and Labile Soil Organic Carbon Fractions under Detritus Treatments in a Subtropical Karst Region during the Rainy and Dry Seasons

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Table S1. DIRT (Detritus Input and Removal Treatments) experiment description. CK—control; NL—no litter; NR—no roots; NI—no inputs; DL—double litter.

Treatments	Method
CK	Normal litter inputs
NL	Above-ground inputs were excluded from plots. Leaf litter was totally removed by rake. This process was repeated each month
NR	The plots were trenched around 40 cm wide and 100 cm deep. Excavated soil was piled outside the plot. High-density PVC board, which was 0.5 mm thick and 1 m wide, was put in the trenches. Then the trenches were filled with soil. To eliminate root production, plants were cleared.
NI	Above-ground inputs were excluded from plots, and below-ground inputs were provided as in NR plots. This treatment is the combination of NR+ NL
DL	Above-ground leaf inputs were doubled by adding leaf litter removed from NL plots

Table S2. Relative abundance of dominant phyla in different seasons and detritus treatments.

CK—control; NL—no litter; NR—no roots; NI—no inputs; DL—double litter.

		RUIIN					ARID				
		CK	NL	NR	NI	DL	CK	NL	NR	NI	DL
Fungal	<i>Ascomycota</i>	37.12%	40.77%	42.93%	32.70%	43.31%	31.82%	29.94%	31.85%	35.15%	34.72%
	<i>unclassified_k_Fungi</i>	33.31%	31.84%	30.74%	34.44%	28.70%	34.58%	44.03%	40.08%	45.21%	35.37%
	<i>Basidiomycota</i>	21.87%	21.72%	18.12%	26.10%	19.19%	30.30%	22.04%	24.35%	16.33%	25.49%
	<i>Rozellomycota</i>	3.59%	2.26%	3.34%	2.83%	2.24%	0.59%	0.38%	0.40%	0.69%	0.47%
	<i>Glomeromycota</i>	0.90%	1.01%	0.63%	1.16%	0.34%	1.45%	1.89%	1.23%	1.13%	0.77%
	<i>Mortierellomycota</i>	0.68%	0.95%	1.87%	0.78%	4.01%	0.15%	0.08%	0.22%	0.24%	0.50%
	<i>Kickxellomycota</i>	0.76%	0.88%	0.40%	0.97%	0.90%	0.51%	1.26%	1.08%	0.29%	1.34%
	<i>Chytridiomycota</i>	0.73%	0.43%	1.02%	0.58%	0.81%	0.33%	0.25%	0.52%	0.28%	0.95%
	others	1.04%	0.15%	0.94%	0.46%	0.50%	0.27%	0.13%	0.26%	0.68%	0.38%
Bacterial	<i>Proteobacteria</i>	22.14%	25.41%	25.21%	26.28%	26.37%	21.88%	20.03%	23.18%	22.49%	24.27%
	<i>Actinobacteriota</i>	22.43%	20.13%	21.59%	19.97%	19.91%	26.54%	27.51%	27.75%	27.39%	26.00%
	<i>Acidobacteriota</i>	19.31%	18.48%	17.15%	16.81%	17.97%	15.26%	12.72%	12.11%	12.99%	14.27%
	<i>Chloroflexi</i>	8.11%	7.69%	7.98%	8.45%	7.45%	9.62%	16.02%	11.96%	12.79%	9.51%
	<i>Verrucomicrobiota</i>	7.54%	8.79%	8.92%	8.73%	8.58%	10.80%	10.67%	11.95%	10.12%	10.49%
	<i>Methylomirabilota</i>	6.44%	5.49%	5.16%	5.33%	5.08%	2.90%	1.75%	1.98%	2.92%	2.85%
	<i>Planctomycetota</i>	2.11%	2.29%	2.38%	2.42%	2.36%	4.22%	4.63%	4.54%	3.81%	4.91%
	<i>Myxococcota</i>	3.42%	3.22%	3.35%	3.63%	3.59%	2.05%	1.37%	1.50%	1.94%	1.96%
	<i>unclassified_k_norank_d__</i>	2.14%	2.00%	2.26%	1.99%	2.29%	2.53%	1.67%	1.74%	2.05%	2.22%
	<i>Bacteria</i>										
	<i>Bacteroidota</i>	1.14%	1.34%	0.99%	1.15%	1.55%	0.68%	0.40%	0.37%	0.45%	0.52%
	<i>Firmicutes</i>	1.21%	0.76%	0.80%	1.07%	0.73%	0.19%	0.34%	0.36%	0.31%	0.18%
	others	4.02%	4.41%	4.23%	4.18%	4.10%	3.35%	2.89%	2.57%	2.74%	2.82%



Figure S1. Aerial photo of the at the study site.

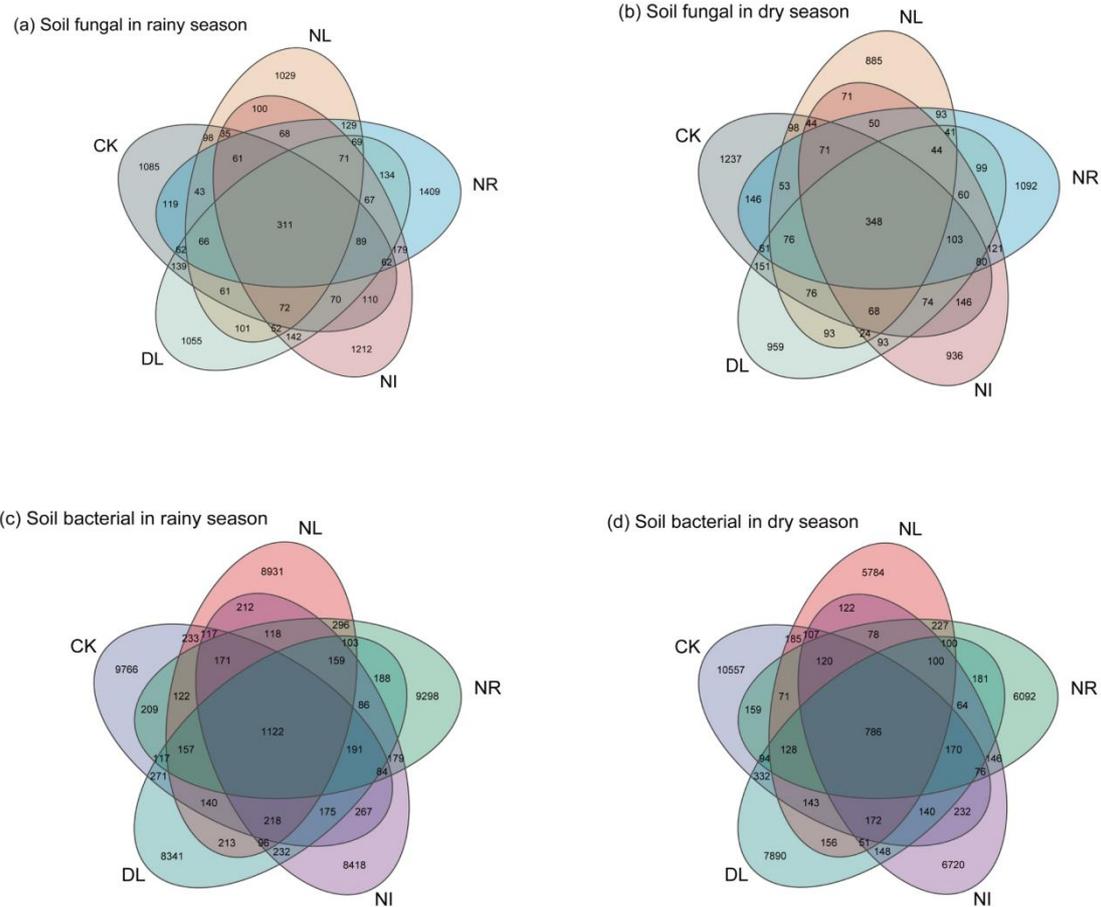


Figure S2. Venn diagram of soil fungal (a-b), and bacterial (c-d) OTUs in the rainy and dry season under different detritus treatments. CK—control; NL—no litter; NR—no roots; NI—no inputs; DL—double litter.