Supporting Information

Higher Soil Mesofauna Abundance and Microbial Activities Drive Litter Decomposition in Subtropical Forests

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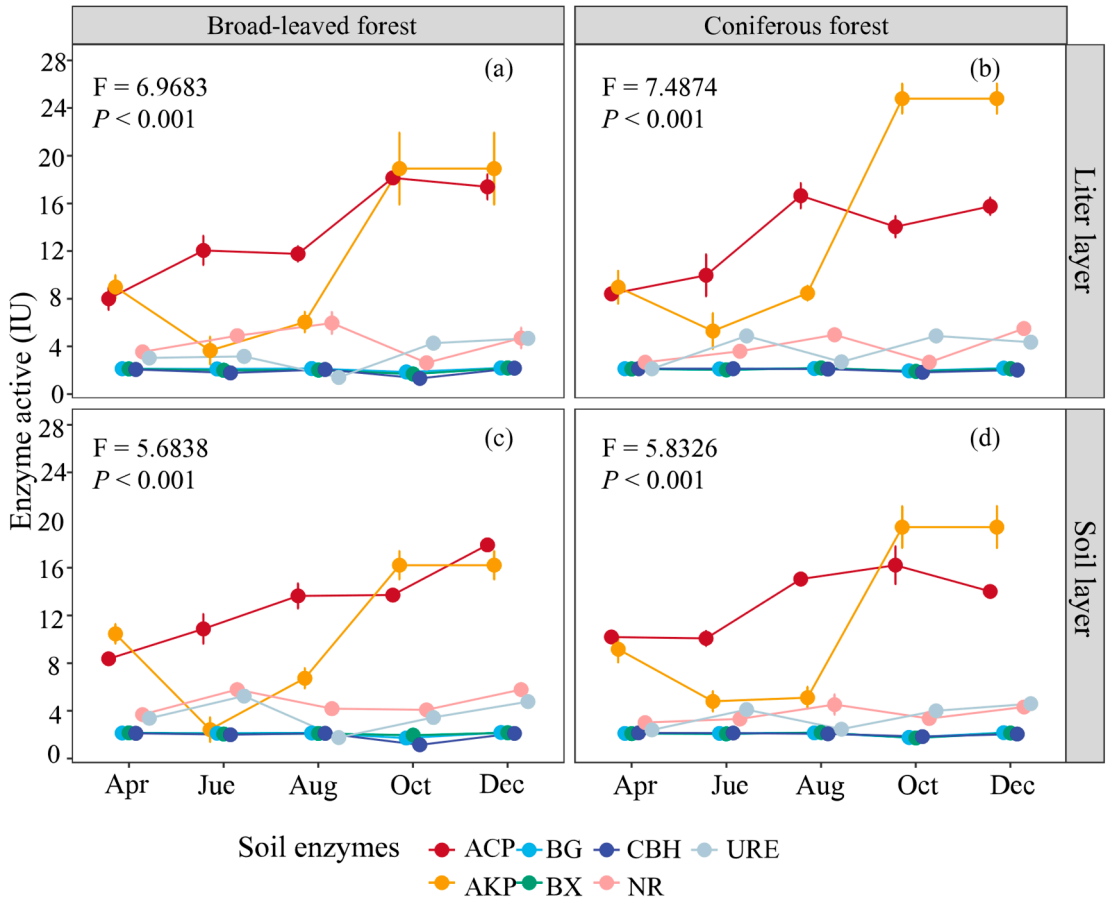

Figure S1. Variation of different enzyme activity in the litter and soil layers of broad-leaved and needle forests over time. Values are presented as means ± standard error (n = 3). BX, β-1,4 xylosidase; BG, β-1,4 glucosidase; CBH, cellobiohydrolase (1 μmol PNP released h^{-1} g^{-1} soil); NR, nitrate reductase (1 μg NO_2^- released min^{-1} g^{-1} soil); URE, urease (1 mg NH_3-N released h^{-1} g^{-1} soil); ACP, acid phosphatase; AKP, alkaline phosphatase (1 mg P released h^{-1} g^{-1} soil).

Table S1. The difference of soil extracellular enzyme activity between the soil layers and the forest types. df and F value indicate the degrees of freedom and F-statistic. Significant differences are indicated by bold-face *P* values.

	Soil depth			Forest type		
	df	F value	*P* value	df	F value	P value
NR	235	0.2265	0.6346	235	16.0221	**<0.001**
ACP	235	0.1926	0.6612	235	0.0884	0.7665
AKP	235	3.6846	0.0561	235	4.8389	**0.0288**
URE	237	0.1507	0.6982	237	0.7363	0.3917
BX	235	1.2186	0.2708	235	0.5166	0.4730
BG	235	3.3801	0.0673	235	0.7989	0.3723
CBH	237	0.0438	0.8344	237	19.6288	**<0.001**
SIR	237	0.0334	0.855	237	54.2773	**<0.001**

Table S2. Effects of microbial activity and soil fauna diversity on mass loss after ten months of decomposition. df and F value indicate the degrees of freedom and F-statistic. Significant differences are indicated by bold-face *P* values. NR, nitrate reductase; ACP, acid phosphatase; AKP, alkaline linphosphatase; URE, urease; BX, β-1,4 xylosidase; BG, β-1,4 glucosidase; CBH, cellobiohydrolase; Fauna_abu, soil fauna abundance; Fauna_rich, soil fauna richness.

	df	F value	*P* value
Litter layer			
NR(IU)	118	11.33	**0.001**
ACP(IU)	111	42.57	**<0.001**
AKP(IU)	112	49.78	**<0.001**
URE(IU)	111	0.76	0.384
BX(IU)	112	0.37	0.544
BG(IU)	112	4.87	**0.029**
CBH(IU)	112	13.95	**<0.001**
pH	117	17.36	**<0.001**
SIR	117	6.32	**0.013**
Fauna_abu	118	8.07	**0.005**
Fauna_rich	118	16.75	**<0.001**
Soil layer			
NR(IU)	112	0.11	0.738
ACP(IU)	112	30.75	**<0.001**
AKP(IU)	112	11.72	**<0.001**
URE(IU)	112	2.95	0.089
BX(IU)	112	0.17	0.683
BG(IU)	112	2.10	0.150
CBH(IU)	112	14.23	**<0.001**
pH	117	17.13	**<0.001**
SIR	117	14.58	**<0.001**
Fauna_abu	118	27.99	**<0.001**
Fauna_rich	118	18.70	**<0.001**