Soil Research **58**, 441–451
doi:10.1071/SR19377_AC

Supplementary material for

Variations of belowground C and N cycling between arbuscular mycorrhizal and ectomycorrhizal forests across China

Jiwei Li[A,B], *Zhouping Shangguan*[A,B,C], *Lei Deng*[A,B,C,D]

[A]State Key Laboratory of Soil Erosion and Dryland Farming on the Loess Plateau, Institute of Soil and Water Conservation, Chinese Academy of Sciences and Ministry of Water Resources, Yangling, Shaanxi 712100, China.

[B]University of Chinese Academy of Sciences, Beijing 100049, China.

[C]Institute of Soil and Water Conservation, Northwest A&F University, Yangling, Shaanxi 712100, China.

[D]Corresponding author: Email: leideng@ms.iswc.ac.cn

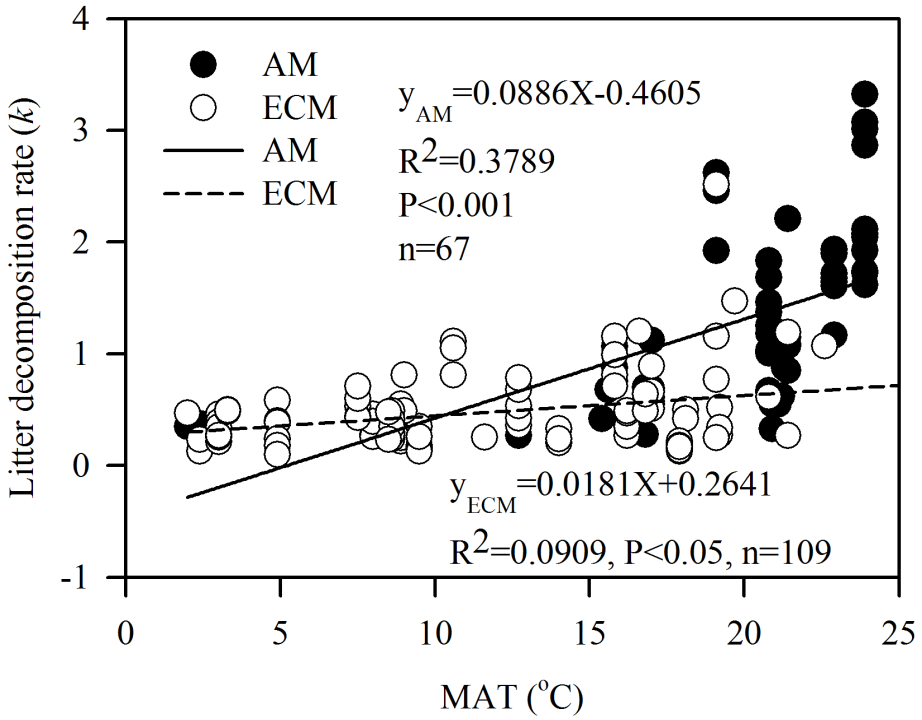

Figure S1 The linear regression relationship between litter decomposition rate (*k*) of two mycorrhizal types (arbuscular mycorrhizae (AM) and ectomycorrhizae (ECM)) and annual mean temperature (MAT).

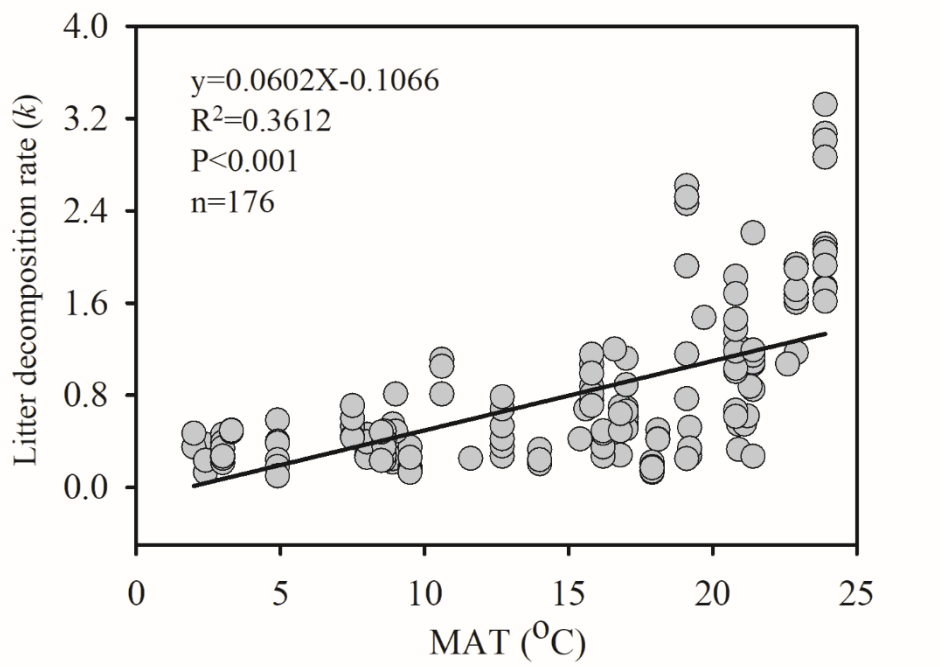

Figure S2 The linear regression relationship between litter decomposition rate (*k*) of two mycorrhizal types and annual mean temperature (MAT).

Table S1 Multiple linear regression relationship between every variable and climate factors (MAP and MAT) in two forest mycorrhizal types: arbuscular mycorrhizae (AM) and ectomycorrhizae (ECM). The equation's regression coefficient is standardized. R^2 indicates coefficient of determination (equation's explained ratio).

Dependent variable	AM			ECM		
	n	Equations	R^2	n	Equations	R^2
Litter input (Mg ha^{-1} $year^{-1}$)	49	Y=0.54MAT+0.37MAP	**0.620*** **	116	Y=0.25MAP-0.01MAT	**0.251***
Forest floor biomass (Mg ha^{-1} $year^{-1}$)	15	Y=0.94MAP-0.34MAT	0.322	62	Y=0.13MAP+0.05MAT	0.166
Litter C (g kg^{-1})	62	Y=0.07MAT+0.05MAP	0.112	96	Y=0.18MAP-0.01MAT	0.177
Litter N (g kg^{-1})	76	Y=0.35MAT-0.40MAP	0.262	124	Y=-0.13MAT-0.08MAP	0.194
Litter C/N	60	Y=0.34MAP-0.30MAT	0.289	80	Y=0.11MAT+0.02MAP	0.131
Litter lignin (g kg^{-1})	41	Y=0.24MAP+0.23MAT	**0.444***	49	Y=0.29MAP-0.05MAT	0.259
Litter lignin/N	35	Y=0.22MAP+0.10MAT	0.305	46	Y=-0.11MAT-0.01MAP	0.109
Litter cellulose (g kg^{-1})	22	Y=0.44MAT+0.12MAP	**0.546***	27	Y=-0.59MAP+0.41MAT	0.346
Litter decomposition rate (*k*)	67	Y=0.65MAT-0.05MAP	**0.616****	109	Y=0.45MAP-0.06MAT	**0.404*****
Litter annual weight loss (%)	33	Y=0.87MAP-0.43MAT	**0.607****	40	Y=0.39MAP-0.13MAT	0.364
Soil OC (g kg^{-1})	162	Y=0.55MAP+0.075MAT	**0.613*****	240	Y=0.04MAT-0.08MAP	0.069
Soil TN (g kg^{-1})	168	Y=0.65MAP-0.07MAT	**0.589*****	271	Y=-0.05MAT-0.08MAP	0.119
Soil C/N	168	Y=0.12MAP-0.05MAT	0.077	274	Y=0.01MAT-0.07MAP	0.066
Soil DOC (mg kg^{-1})	14	Y=0.46MAP-0.05MAT	0.476	34	Y=-0.14MAT+0.13MAP	0.221
Soil NH_4^+-N (mg kg^{-1})	21	Y=0.72MAP-0.43MAT	0.461	20	Y=-0.66MAT+0.69MAP	**0.561***
Soil NO_3^--N (mg kg^{-1})	21	Y=0.43MAT-0.10MAP	0.362	20	Y=-0.499MAT+0.568MAP	0.448

Soil N_{org} (g kg^{-1})	21	Y=0.24MAP-0.03MAT	0.244	20	Y=-0.27MAT-0.05MAP	0.278
Soil N_{inorg} (mg kg^{-1})	21	Y=0.64MAP-0.26MAT	0.455	20	Y=-0.65MAT+0.69MAP	**0.559***
Soil N_{org}/N_{inorg}	21	Y=-0.37MAT-0.18MAP	0.404	20	Y=-0.21MAT-0.11MAP	0.239
Soil MBC (mg kg^{-1})	64	Y=0.27MAP-0.19MAT	**0.447****	71	Y=-0.13MAT+0.01MAP	0.125
Soil MBN (mg kg^{-1})	47	Y=0.54MAP+0.23MAT	**0.737*****	34	Y=-1.56MAT-0.05MAP	0.362
Soil MBC/MBN	47	Y=-0.21MAT-0.19MAP	**0.391***	34	Y=0.02MAT+0.22MAP	0.231
Soil C mineralization (Mg ha^{-1} $year^{-1}$)	13	Y=0.53MAP-0.33MAT	0.572	13	Y=-0.13MAT+0.26MAP	0.202
Soil respiration (Mg ha^{-1} $year^{-1}$)	14	Y=1.03MAP+0.42MAT	0.724*	22	Y=0.85MAT+1.46MAP	**0.743*****
Soil net N mineralization (kg ha^{-1} $year^{-1}$)	10	Y=0.52MAP-0.40MAT	0.232	12	Y=0.04MAT+0.03MAP	0.062
Soil net nitrification (kg ha^{-1} yr^{-1})	11	Y=-0.38MAT-0.18MAP	0.412	12	Y=-0.38MAT-0.66MAP	0.642

Note: *** significant at $P < 0.001$, ** significant at $P < 0.01$, * significant at $P < 0.05$.