

Table S1 Content of soil mineral elements in different forest types (mg/Kg)

	Ca	Fe	Na	Mg	Al
Fir	55.77±1.89a	161.59±25.23a	0.54±0.28a	6.48±1.29a	27.34±7.47b
Pine	56.45±10.37a	89.85±3.71b	0.07±0.04a	8.53±2.18a	49.52±0.43a
Mixed	25.12±11.69b	84.70±15.31b	4.22±3.86a	7.20±1.20a	5.42±1.49c

Values are means \pm standard error and means followed by different letter in the same column are significantly different at the 0.05 level. Fir: Pure *C.lanceolata* forest; Pine: Pure *Pinus* forest; Mixed: Mixed forest of *C.lanceolata* and *Pinus*.

Table S2 The correlation between OTUs of fungal functional guilds and soil chemical properties

	C:N	TN	SOC	TP	N:P	AK	Fe	Ca	Al
M1	-0.70*			-0.90***	0.92***	-0.68*		-0.96***	-0.67*
M2	-0.75*	0.77*		-0.74*	0.83**		-0.73*	-0.68	
M3				0.78*					
M4	0.69*	-0.70*	-0.67*				0.72*		
M5				0.93***	-0.75*		0.70*		
M6	0.70*	-0.79*	-0.81**				0.88**		
M7	0.91***						0.72*		
M8				0.77*	-0.68*		0.75*		
M9	0.80**	-0.75*	-0.71*				0.86**		

*, $P<0.05$; **, $P<0.01$; ***, $P<0.001$. M1: Ectomycorrhizal; M2: Ericoid mycorrhizal; M3: Lichenized; M4: Plant pathogen; M5: Animal pathogen-fungal parasite-undefined saprotroph; M6: Ectomycorrhizal-fungal parasite-plant saprotroph-wood saprotroph; M7: Endophyte-litter Saprotroph-soil saprotroph-undefined saprotroph; M8: Arbuscular mycorrhizal; M9: Wood saprotroph; SOC: soil organic carbon; TN: total nitrogen; C:N: C:N ratio; N:P: N:P ratio; TP: total phosphorus; AK: available potassium.

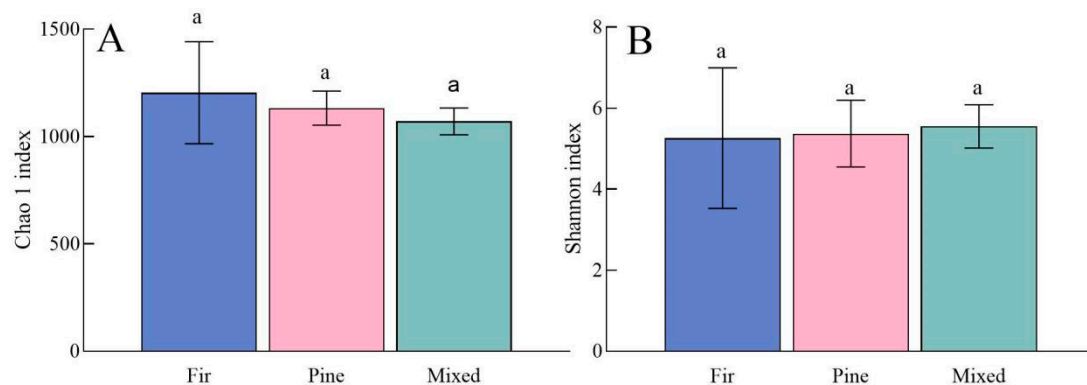


Figure.S1. A: The richness (Chao 1 index) and B: diversity (Shannon index) at the OUT level. Lowercase letters above the error bar indicate a significant difference at the 0.05 level. Fir: Pure *C.lanceolata* forest; Pine: Pure *Pinus* forest; Mixed: Mixed forest of *C.lanceolata* and *Pinus*.