

Article

Phylogenetic Structure of Soil Bacterial Communities along Age Sequence of Subtropical *Cunninghamia Lanceolata* Plantations

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Table S1. Description of the sampling sites of *C. lanceolata* plantations.

Sites	Slope Gradient	Slope Orientation	Understory Vegetation
Young	32°	E	I. pubescens, M. dodecandrum
Middle	35°	E	Misanthus, D. dichotoma
Mature	30°	E	I. pubescens, D. dichotoma

I. pubescens: *Ilex pubescens*; D. dichotoma: *Dicranopteris dichotoma*; M. dodecandrum: *Melastoma dodecandrum*

Table S2. Bacterial sequences and OTUs in each soil sample at different age of *C. lanceolata* plantations.

Stand Age	Sequence	OTU Number
Young 1	45298	2123
Young 2	46437	2211
Young 3	54278	2201
Young 4	68006	2260
Young 5	60223	2270
Middle 1	70260	2264
Middle 2	72152	2399
Middle 3	56610	2347
Middle 4	85503	2186
Middle 5	57324	2122
Mature 1	66314	2497
Mature 2	75017	2485
Mature 3	71550	2159
Mature 4	69047	2416
Mature 5	74782	2395

Table S3. Significant test of bacterial community taxonomic (Bray-Curtis) and phylogenetic (Unifrac) composition between different ages of *C. lanceolata* plantations based on PerMANOVA analysis.

	Taxonomic community			Phylogenetic Community		
	<i>F</i>	<i>R</i> ²	<i>p</i>	<i>F</i>	<i>R</i> ²	<i>p</i>
Young vs Middle	7.12	0.47	0.008	11.07	0.58	0.009
Young vs Mature	10.37	0.56	0.010	19.04	0.71	0.011
Middle vs Mature	3.17	0.28	0.033	0.38	0.046	0.721

Table S4. Results of redundancy analysis.

Matrix	Variance explained	F	<i>p</i>
Stand age	40.3%	8.8	0.002
Soil moisture (%)	1.7%	0.4	0.431
TC (g kg ⁻¹)	12.9%	3.3	0.010
TN (g kg ⁻¹)	4.1%	1	0.384
AP (mg kg ⁻¹)	2.3%	0.5	0.202
NO ₃ ⁻ -N (mg kg ⁻¹)	3.2%	0.8	0.162
DOC (mg kg ⁻¹)	2.1%	0.5	0.444
pH (H ₂ O)	0.4%	0.05	0.318
NH ₄ ⁺ -N (mg kg ⁻¹)	1.7%	0.4	0.484

p values were calculated based on 999 permutations; *p* values in bold are statistically significant (*p* < 0.05).

Table S5. Pearson correlations between soil properties and MPD, NRI and phylogenetic diversity.

	MPD	NRI	OTU richness	Phylogenetic diversity
pH (H ₂ O)	0.121	-0.401	-0.094	-0.487
Soil moisture (%)	-0.093	0.246	-0.334	0.249
TC (g kg ⁻¹)	0.638 *	0.542*	0.003	0.669 *
TN (g kg ⁻¹)	0.374	-0.420	0.025	-0.640
DOC (mg kg ⁻¹)	0.416	-0.315	-0.577 *	-0.142
NH ₄ ⁺ -N (mg kg ⁻¹)	-0.030	0.329	-0.187	0.242
NO ₃ ⁻ -N (mg kg ⁻¹)	0.287	-0.097	-0.506	0.027
AP (mg kg ⁻¹)	0.527 *	-0.303	-0.154	-0.477

TC, total carbon; TN, total nitrogen; DOC, dissolved organic carbon; AP, available phosphorus; *, *p* < 0.05

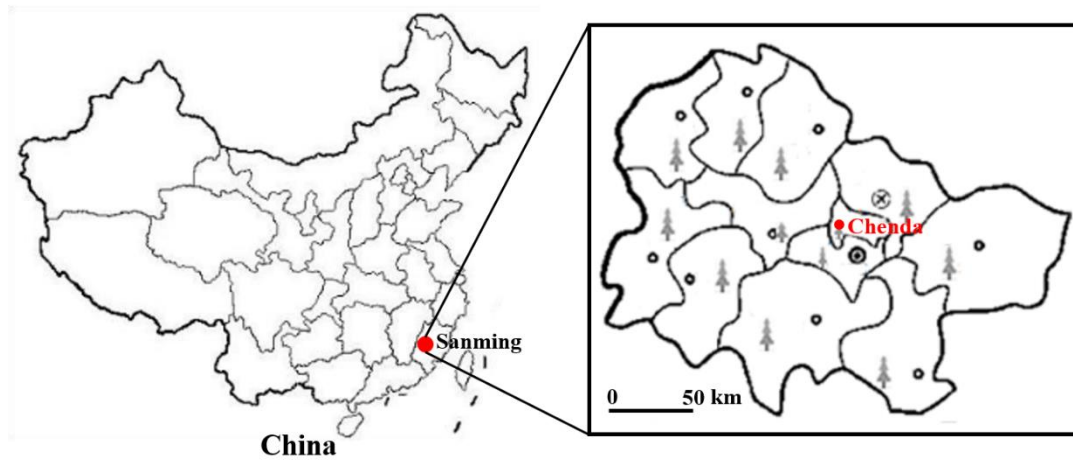


Figure S1. Location of study area in Chenda Town, Fujian Province, China.

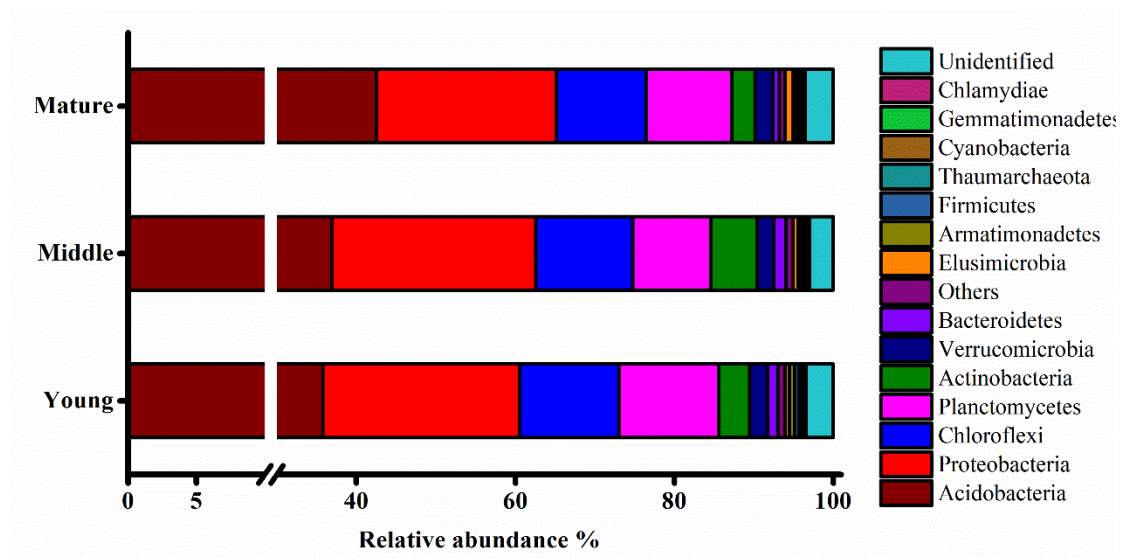


Figure S2. Taxonomic composition of soil bacterial communities at the phylum level under different age of *C. lanceolata* plantations.

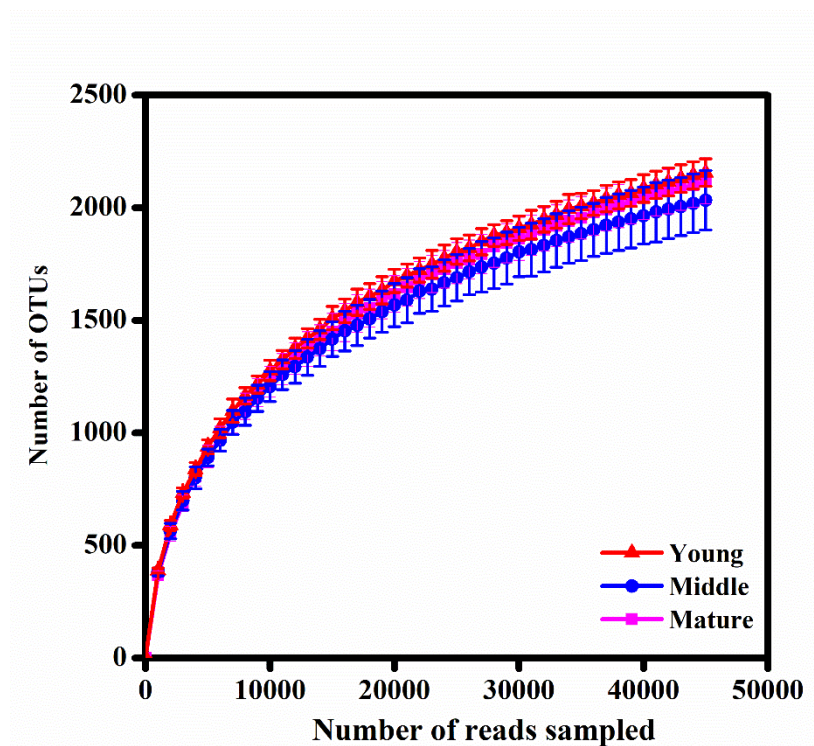


Figure S3 Rarefaction curves of observed bacterial OTUs among different age of *C. lanceolata* plantations.