

Title: Long-Term Coffee Monoculture Alters Soil Chemical Properties and Microbial Communities

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Table S1 Soil fertilizer regimes in coffee cropping fields every year.

Time	Soil fertilizer regimes
May	Organic manure (cow manure) 4,500 kg ha ⁻¹ ; KCl 150 kg ha ⁻¹ ; Calcium superphosphate 150 kg ha ⁻¹ ; Urea 150 kg ha ⁻¹ ;
July	KCl 150 kg ha ⁻¹ ; Urea 150 kg ha ⁻¹ ;
October	KCl 150 kg ha ⁻¹ ; Urea 150 kg ha ⁻¹ ;

Table S2 Fresh weight of coffee fruit in the 4 time-series coffee fields.

Coffee fields	Fruit fresh weight (kg/ha)
4Y	14026.50±1066.55 a
18Y	10361.25±1578.35 b
26Y	5083.88±1096.24 c
57Y	1829.25±113.22 d

Data were expressed as mean ± standard deviation (n = 3). The data in a column with a different letter differ significantly at Duncan's significance level 0.05.

“4Y”, “18Y”, “26Y”, and “57Y” represent fields continuously cropped for 4, 18, 26, or 57 years, respectively.

Table S3 Bacterial and fungal sequencing reads and coverage for each sample from the four time-series coffee fields.

Treatments	Bacterial reads	Bacterial coverage	Fungal reads	Fungal coverage
4Y_1	44963	0.971	66095	0.996
4Y_2	40901	0.965	26106	0.990
4Y_3	37816	0.964	29064	0.990
4Y_4	42822	0.968	29047	0.991
18Y_1	38236	0.965	39214	0.993
18Y_2	29947	0.950	54509	0.995
18Y_3	28913	0.961	51972	0.995
18Y_4	38116	0.963	24571	0.990
26Y_1	42472	0.967	38085	0.994
26Y_2	44086	0.969	11574	0.980
26Y_3	30201	0.956	29632	0.992
26Y_4	24399	0.947	16749	0.987
57Y_1	52934	0.974	27966	0.991
57Y_2	40109	0.967	41394	0.994
57Y_3	20784	0.936	43956	0.995
57Y_4	9146	0.907	51884	0.995

“4Y”, “18Y”, “26Y”, and “57Y” represent fields continuously cropped for 4, 18, 26, or 57 years, respectively.

Table S4 Pearson's correlation relationships between soil properties, bacterial and fungal abundant phyla (RA > 1%), abundant genera (top 20) and fresh weight of coffee fruit in the field.

Soil properties	Fresh weight of coffee fruit	Bacterial and fungal phyla	Fresh weight of coffee fruit	Bacterial abundant genera	Fresh weight of coffee fruit	Fungal abundant genera	Fresh weight of coffee fruit
pH	0.684	Proteobacteria	0.902*	Gp1	-0.880	Hypocrea	-0.856
EC	-0.918*	Acidobacteria	-0.783	Gp2	-0.734	Fusarium	0.567
OM	0.832	Bacteroidetes	0.957*	Gp3	-0.892	Cryptococcus	-0.915*
N	-0.752	Verrucomicrobia	-0.260	Gp6	0.942*	Haematonectria	0.660
P	-0.977*	Actinobacteria	0.403	GpIIa	0.423	Xylogone	-0.577
K	-0.050	Firmicutes	-0.842	Gp4	0.972*	Trichosporon	-0.429
Ca	0.327	Chloroflexi	-0.892	Burkholderia	-0.799	Zopfiella	0.065
Mg	-0.417	Planctomycetes	-0.785	Gp13	-0.975*	Phaeosphaeria	0.788
B	-0.474			Terrimonas	0.963*	Coniochaeta	0.842
Fe	-0.986**	Ascomycota	0.895	Pseudomonas	0.818	Thermomyces	0.826
Mn	-0.507	Basidiomycota	-0.894	Nitrospira	0.880	Trichoderma	0.880
Cu	-0.845			Steroidobacter	0.952*	Staphylotrichum	-0.785
Zn	-0.971*			Thiobacillus	-0.755	Chaetomium	0.890
				Gemmatimonas	0.982**	Pyrenochaetopsis	0.988**
				Flavobacterium	0.874	Conlarium	-0.920*
				Bradyrhizobium	0.700	Aureobasidium	-0.294
				Geobacter	-0.744	Chloridium	-0.304
				Gp5	0.697	Phialemonium	0.365
				Sphingomonas	0.745	Dactylella	0.877
				Exiguobacterium	0.585	Gibberella	0.734

RA is relative abundance. * represent significance at $P < 0.05$ and ** represent significance at $P < 0.01$.

Figure S1 Map for the sampling regime



The experimental site is located at the Spice and Beverage Research Institute, Chinese Academy of Tropical Agricultural Sciences, Xinglong, Hainan province, China

“4Y”, “18Y”, “26Y”, and “57Y” represent fields continuously cropped for 4, 18, 26, or 57 years, respectively. “1”, “2”, “3”, and “4” represent the four subplots from each field.

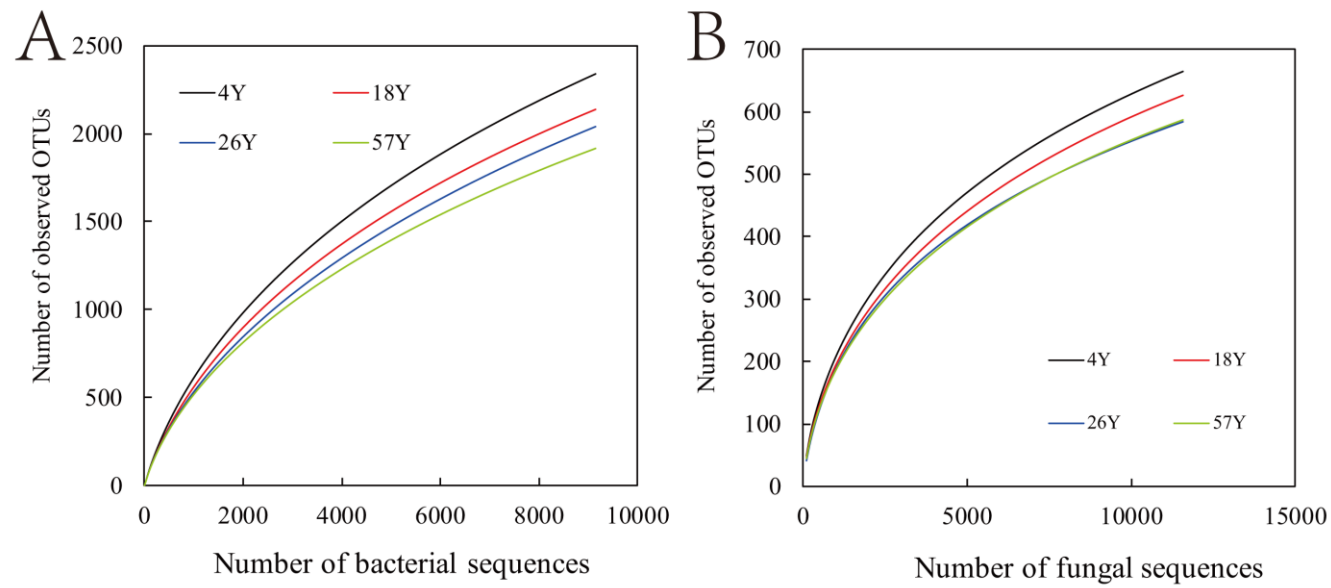


Figure S2 Rarefaction analysis at 3% dissimilarity levels (panel A: Bacteria; panel B: Fungi) for soil samples collected from coffee fields continuously cropped for 4 years (4Y), 18 years (18Y), 26 years (26Y) and 57 years (57Y).