

Supplementary materials

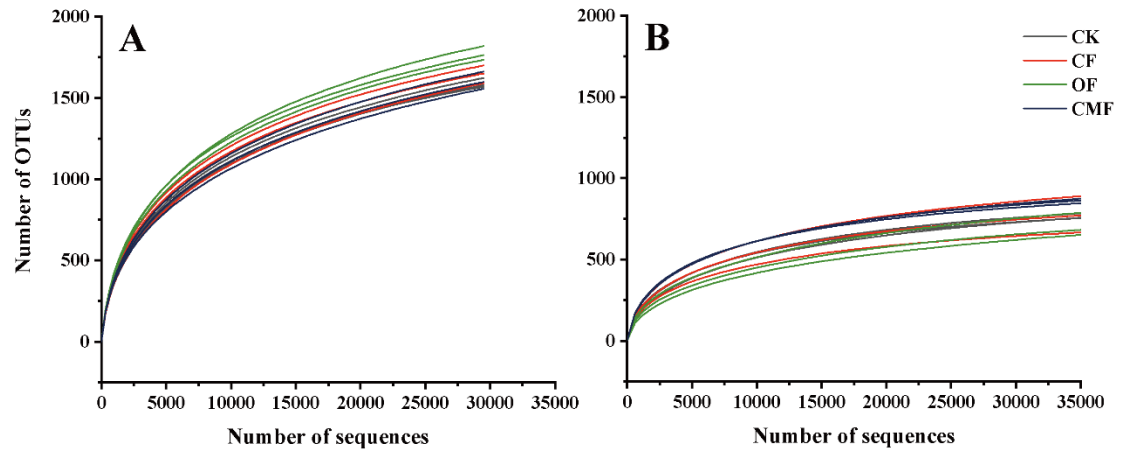


Figure S1. The rarefaction curves of the number of operational taxonomic units (OTUs) for soil bacterial (A) and fungal (B) communities under four fertilizer regimes.

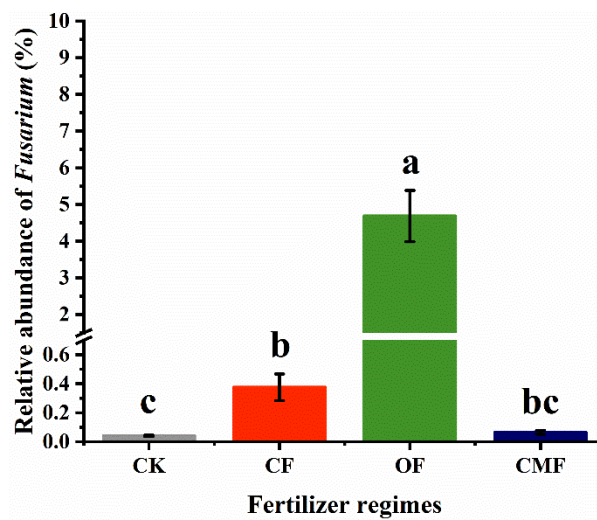


Figure S2. Relative abundance (%) of *Fusarium* under four fertilizer regimes. Different lower letters indicate the significant differences among four fertilizer regimes ($P < 0.05$).

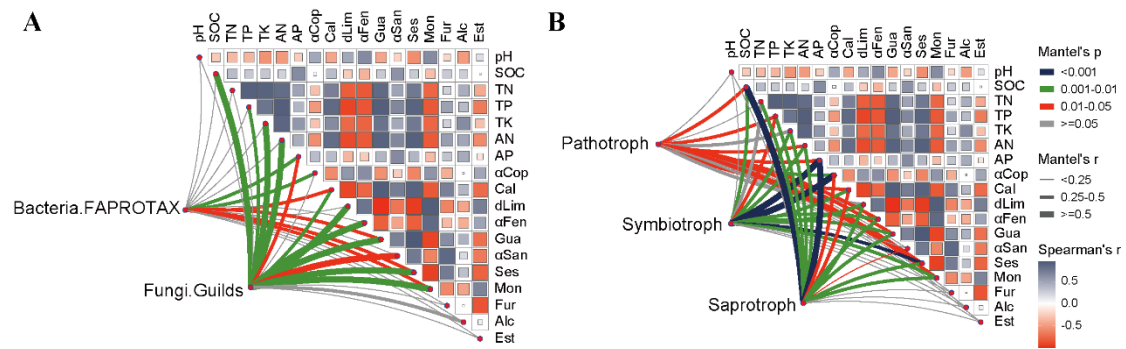


Figure S3. Soil physiochemical and root exudate-related drivers of the ecological functions of soil bacteria and the fungal guilds. Both bacterial functions and fungal guilds were correlated to soil variables by partial Mantel tests based on the Bray–Curtis distance. Pairwise comparisons of soil physiochemical properties and root exudates are shown at the upper-right, with a color gradient representing Spearman's correlation coefficients. The edge width represents the partial Mantel's r statistic for the corresponding correlation, and the edge color denotes that significance is tested based on 999 permutations. SOC, soil organic carbon; TN, soil total nitrogen; TP, soil total phosphorus; TK, soil total potassium; AN, soil available nitrogen; AP, soil available phosphorus; α Cop, α -Copaene; Cal, Calarene; dLim, D-Limonene; α Fen, α -Fenchene; Gua, Guaiol; α San, α -Santalene; Ses, sesquiterpenes; Mon, monoterpenes; Fur, furan; Alc, alcohols; Est, esters.

Table S1. Relative abundance (%) of dominant genera of rhizosphere soil bacteria and fungi

Dominant genera		CK	CF	OF	CMF
Bacteria	<i>Acidothermus</i>	5.22±0.52b	6.59±0.65ab	5.09±0.59ab	6.84±0.86a
	<i>Variibacter</i>	3.65±0.82a	4.82±0.58a	4.17±0.74a	4.23±0.34a
	<i>Acidibacter</i>	1.54±0.13b	1.68±0.15ab	1.96±0.16a	1.63±0.16ab
	<i>Bradyrhizobium</i>	0.85±0.15b	1.83±0.16a	1.50±0.16ab	1.09±0.19ab
	<i>Sorangium</i>	0.77±0.07a	0.70±0.07a	0.63±0.03a	0.81±0.08a
	<i>Rhizomicrobium</i>	0.53±0.03b	0.92±0.09a	0.74±0.04ab	0.65±0.05ab
	<i>Bacillus</i>	0.22±0.04ab	0.24±0.02ab	0.14±0.01b	0.32±0.03a
	<i>Nitrospira</i>	0.30±0.01ab	0.12±0.02bc	0.36±0.06a	0.12±0.01c
Fungi	<i>Mortierella</i>	12.84±1.71a	6.71±0.71ab	5.34±0.43c	6.13±0.63bc
	<i>Archaeorhizomyces</i>	2.06±0.26b	2.96±0.30ab	7.59±0.79a	7.31±0.71ab
	<i>Cryptococcus</i>	17.07±1.56ab	13.56±1.36bc	20.45±2.05a	11.53±1.13c
	<i>Penicillium</i>	1.99±0.12c	8.27±0.72a	4.64±0.68ab	2.21±0.42bc
	<i>Chaetosphaeria</i>	1.63±0.17ab	1.18±0.19ab	5.77±0.42a	0.71±0.05b
	<i>Lepidostroma</i>	6.77±0.89a	0.09±0.01ab	0.01±0.01b	0.25±ab
	<i>Trichoderma</i>	1.22±0.19ab	1.99±0.16a	1.89±0.15ab	0.68±0.05b
	<i>Chaetomium</i>	1.10±0.20a	0.34±0.05ab	0.24±0.01bc	0.17±0.02c

Different lower letters indicate the significant differences among four fertilizer regimes ($P<0.05$).