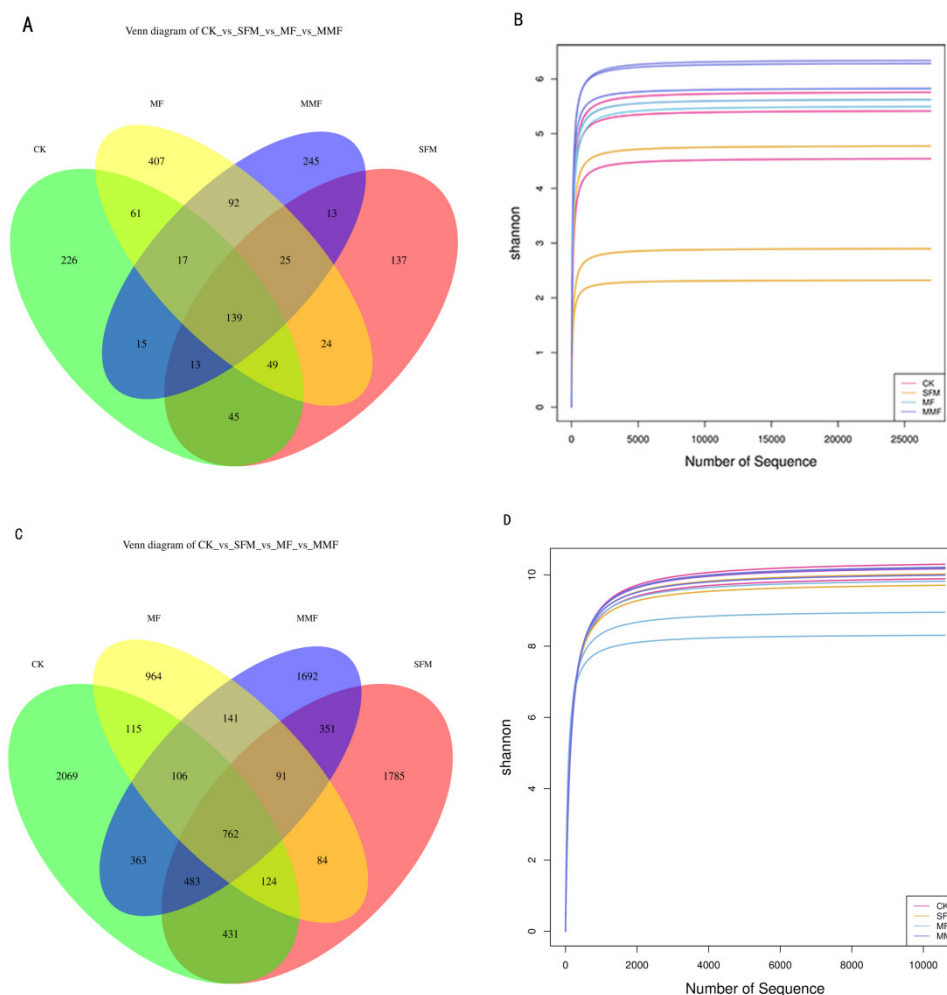


Supplementary Materials

# Microbial Fertilization Improves Soil Health When Compared to Chemical Fumigation in Sweet Lily



**Supplementary Figure S2.** Venn diagram of fungal OTUs (A) and Shannon-Wiener curves (B) and Venn diagram of bacterial OTUs (C) and Shannon-Wiener curves (D) of Lanzhou lily soil microorganism communities from Illumina NovaSeq data.



**Supplementary Figure S2.** The phylogeny tree of fungi (A) and bacteria (B) of Lanzhou lily rhizosphere soil among different treatments from Illumina NovaSeq.

**Supplementary Table S1.** *Sphingomonas* species and *Fusarium* species distribution of total reads of Lanzhou lily rhizosphere soil from Illumina NovaSeq data.

Treatments	CK	SFM	MF	MMF
<i>(a) Sphingomonas</i> species				
<i>s__uncultured_Sphingomonas_sp.</i>	1.23%	1.37%	2.82%	3.12%
<i>s__Sphingomonas_unclassified</i>	0.33%	0.45%	1.08%	1.14%
<i>s__Sphingomonas_sediminicola</i>	0.08%	0.17%	0.35%	0.21%
<i>s__Sphingomonas_sp._CB_286425</i>	0.03%	0.05%	0.03%	0.05%
<i>s__Sphingomonas_lutea</i>	0.00%	0.02%	0.05%	0.03%
<i>s__Sphingomonas_sp._CA25</i>	0.01%	0.00%	0.04%	0.04%
<i>s__Sphingomonas_sp._CB_286428</i>	0.00%	0.03%	0.00%	0.04%
<i>s__Sphingomonas_sp._CB_286429</i>	0.01%	0.00%	0.00%	0.04%
<i>s__Sphingomonas_haloaromaticamans</i>	0.00%	0.00%	0.00%	0.01%
<i>(b) Fusarium</i> species				
<i>s__Fusarium_domesticum</i>	1.87%	0.58%	1.50%	1.01%
<i>s__Fusarium_merismoides</i>	0.20%	0.34%	0.19%	1.22%
<i>s__Fusarium_oxysporum_f_sp_psidii</i>	0.00%	0.24%	0.00%	0.08%
<i>s__Fusarium_solani</i>	0.03%	0.03%	0.10%	0.05%
<i>s__Fusarium_lateritium</i>	0.07%	0.00%	0.00%	0.11%
<i>s__Fusarium_redolens</i>	0.04%	0.01%	0.01%	0.00%
<i>s__Fusarium_tricinctum</i>	0.01%	0.03%	0.00%	0.01%
<i>s__Fusarium_lunatum</i>	0.00%	0.00%	0.00%	0.03%
<i>s__Fusarium_cuneirostrum</i>	0.01%	0.00%	0.00%	0.00%

**Supplementary Table S2.** Summary of soil physicochemical properties of Lanzhou lily rhizosphere soil among different treatments: the data has published [16].

Treatment	Bulk density (g · cm <sup>-3</sup> )	Moisture content (%)	pH	Salt content (g · kg <sup>-1</sup> )	Organic matter (g · kg <sup>-1</sup> )	Available nitrogen (mg · kg <sup>-1</sup> )	Available phosphorus (mg · kg <sup>-1</sup> )	Available potassium (mg · kg <sup>-1</sup> )
CK	1.33±0.01a	14.63±0.09a	7.76±0.03c	0.48±0.01d	13.21±0.10d	65.16±1.01c	94.48±0.93d	236.55±2.8a
SFM	1.32±0.01ab	14.20±0.21b	7.87±0.03b	0.58±0.01c	13.95±0.13c	71.29±0.86b	146.18±5.98c	219.71±3.54b
MF	1.31±0.01b	13.19±0.11c	7.90±0.03ab	0.80±0.01b	14.74±0.13b	82.57±0.99a	194.33±2.59b	204.89±3.69c
MMF	1.30±0.01b	12.09±0.07d	7.99±0.03a	1.08±0.04a	16.18±0.38a	83.25±0.80a	209.95±3.35a	171.04±3.25d