Microbiome variation across populations of desert halophyte *Zygophyllum qatarensis*

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Running Title: Microbiome of *Zygophyllum qatarensis*

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Supplementary Table 1: Location data of different samples for Zygophyllum qatarensis Hadidi

Population Code	Area Name	Geo Data	Soil conditions
T1P1	Ibri	23°24'40.3"N 56°14'54.3"E	Desert Sandy
T1P2	Ibri	23°25'35.9"N 56°16'29.4"E	Desert Sandy
T1P3	Ibri	23°25'18.9"N 55°46'38.5"E	Desert Sandy
T3P1	Bidya	22°51'57.1"N 57°46'33.1"E	Desert Sandy
T3P3	Bidya	22°51'36.1"N 57°46'30.2"E	Desert Sandy
T3P2	Bidya	22°51'23.4"N 57°45'56.1"E	Desert Sandy
T2P1	Izki	22°28'34.9"N 58°45'49.1"E	Gravel loamy
T2P2	Izki	22°28'57.9"N 58°46'34.9"E	Gravel loamy
T2P3	Izki	22°28'38.9"N 58°46'22.9"E	Gravel loamy
T5P1	Themsa	22°47'56.3"N 57°28'59.0"E	Gravel loamy
T5P2	Themsa	22°47'08.5"N 57°28'42.3"E	Gravel loamy
T5P3	Themsa	22°46'22.7"N 57°27'56.8"E	Gravel loamy

Supplementary Table 2: *Z. qatarensis* and its population growth across different climatic parameters

Parameters	**T1**	**T3**	**T2**	**T5**
Temperature (ºC)	46	46	42	43
Texture	Sandy	Sandy	Gravel	Gravel
EC (dS m−1)	39	27	48	52
pH	7.1	7.2	6.8	6.7
Nitrates (mg/kg)	1.2	1.8	4.4	5.2

Fig S1: Experimental design used for this study

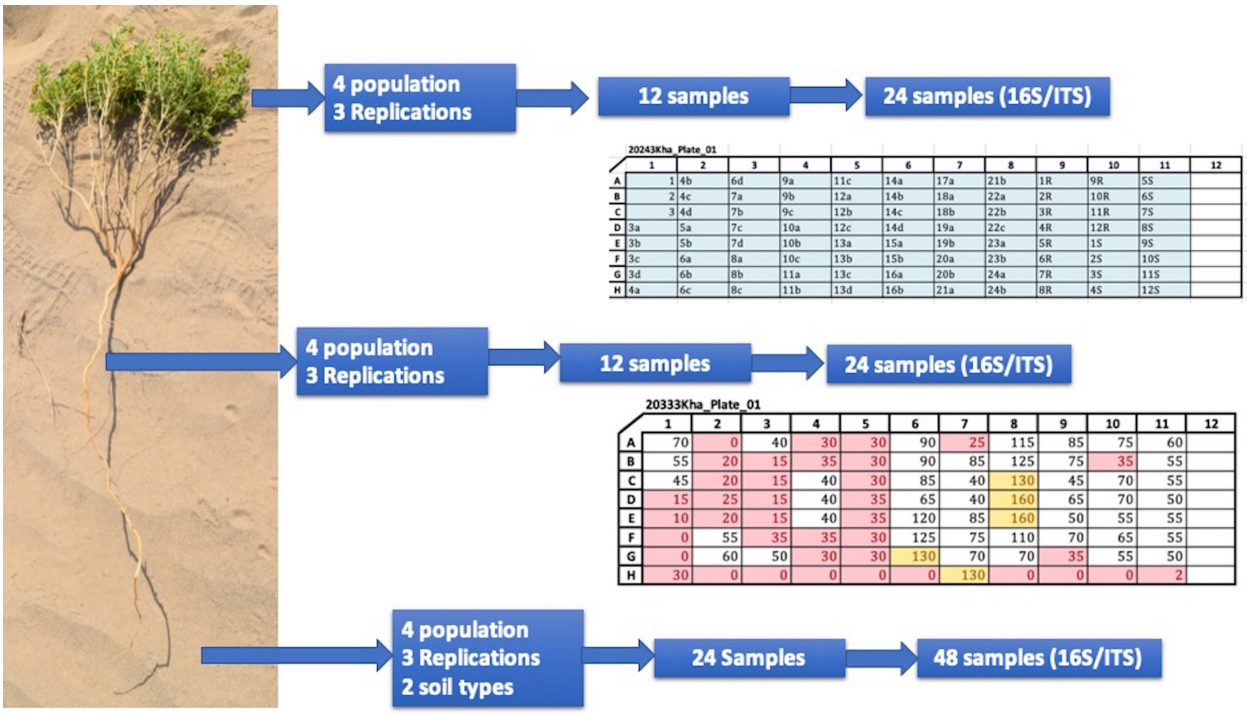


Fig S2: Bioanalyzer analysis of libraries of samples collected from soil, rhizosphere, and endosphere of *Z. qatarensis*

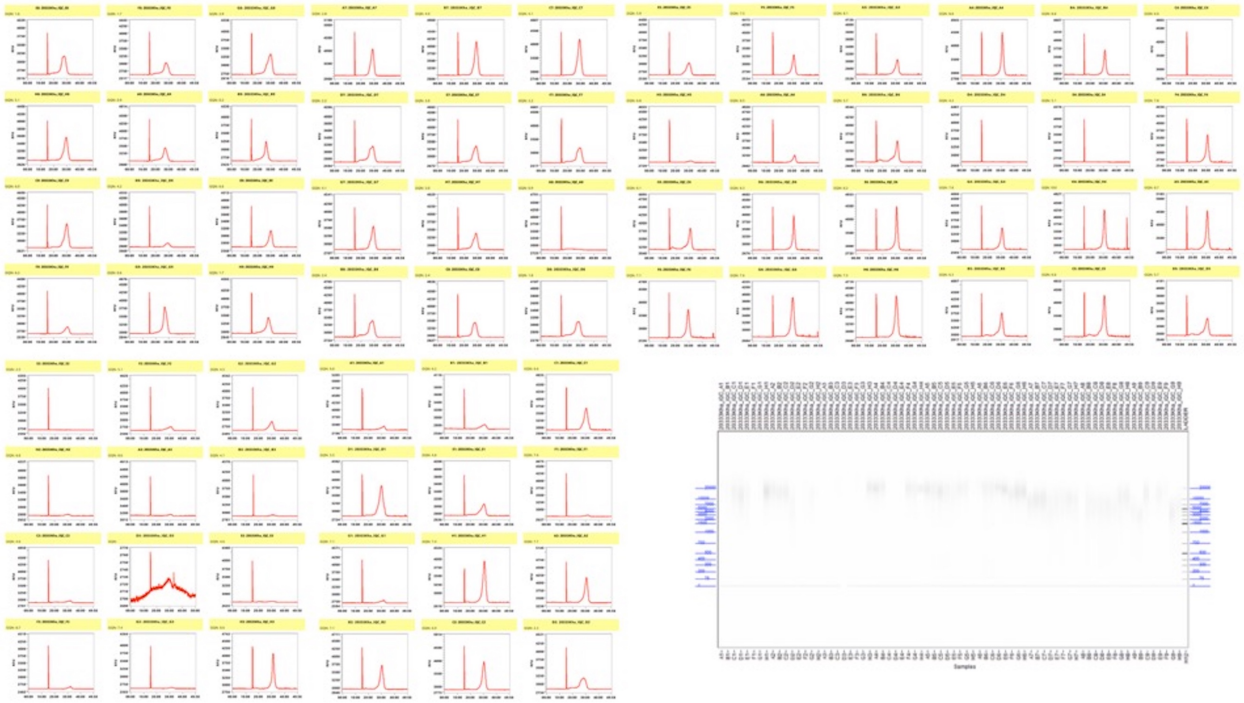


Figure S3: Distribution of microbial counts across rhizosphere and endospheric regions

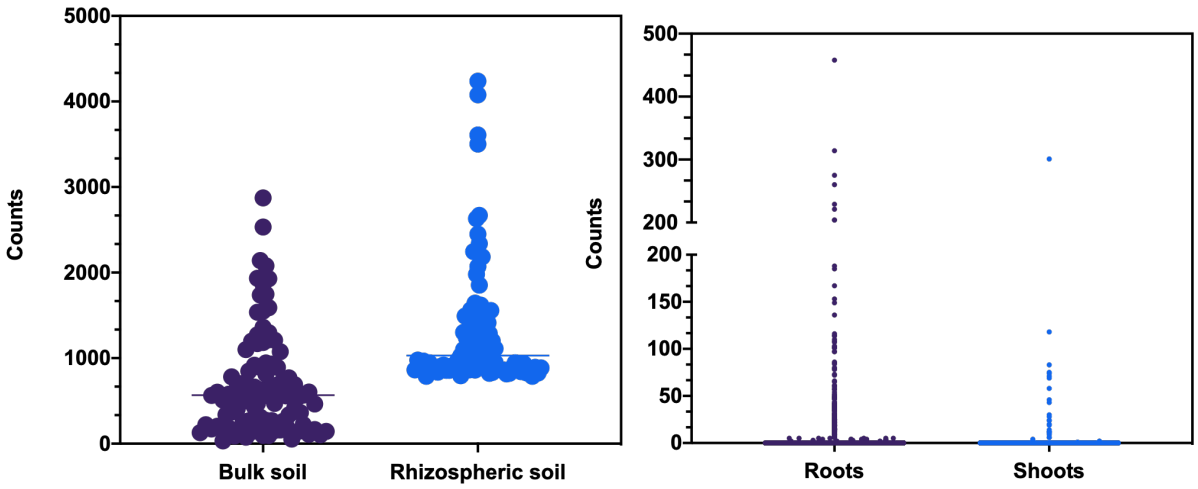


Fig S4: Bacterial species distribution across different samples and taxonomical classification.

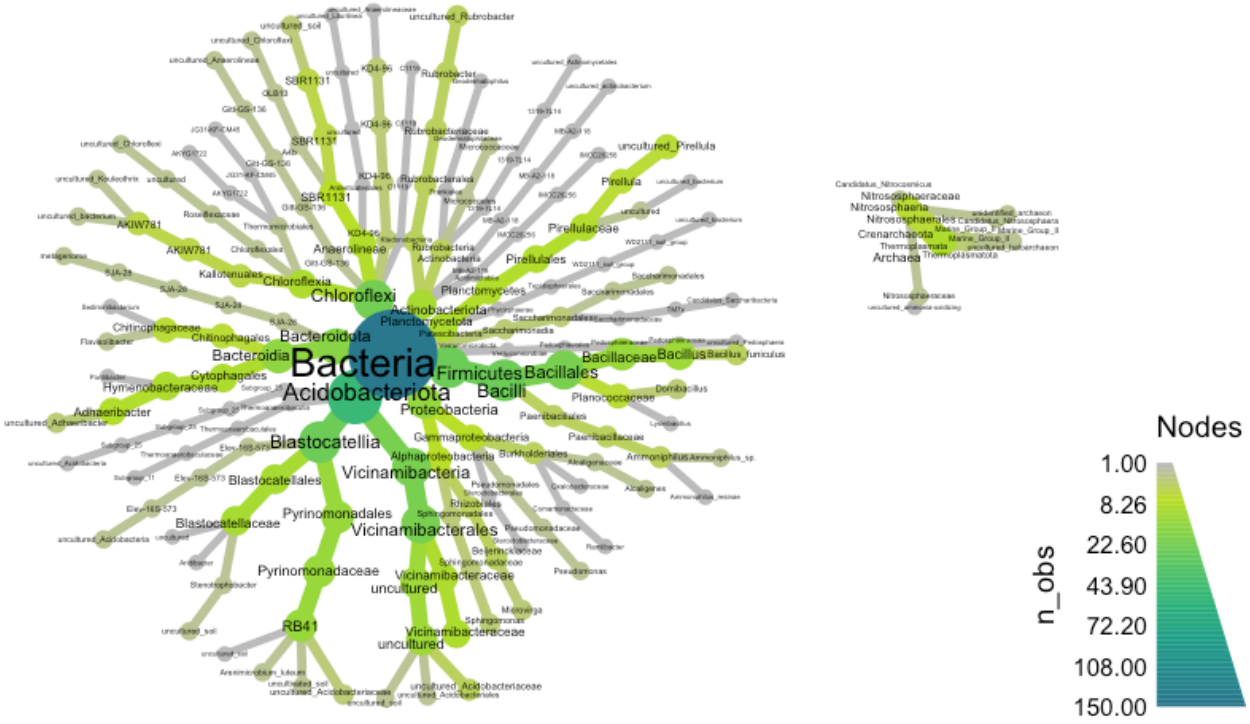


Fig S5 Heat map showing the abundances and distribution of bacterial communities across representative soil types

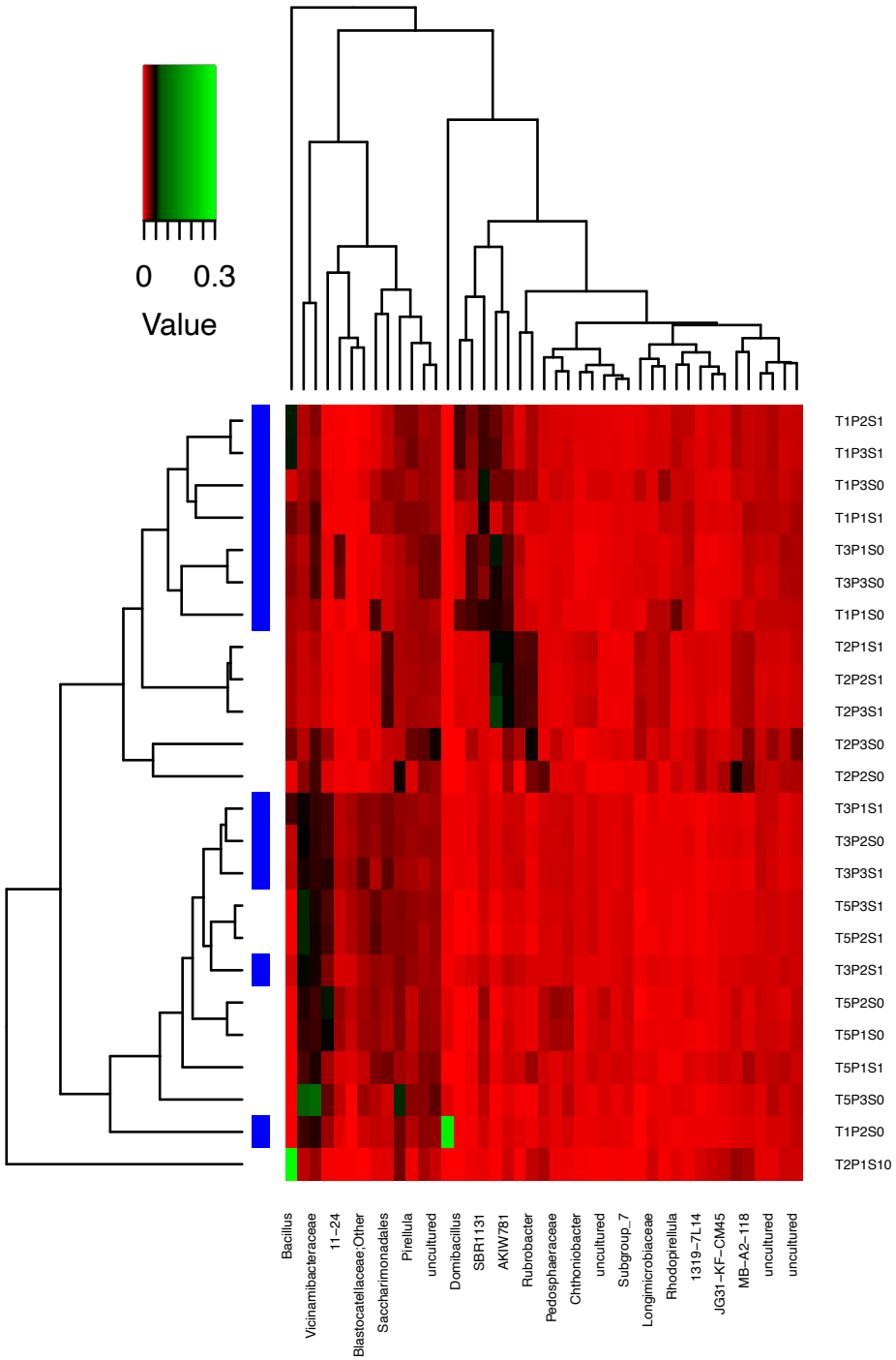
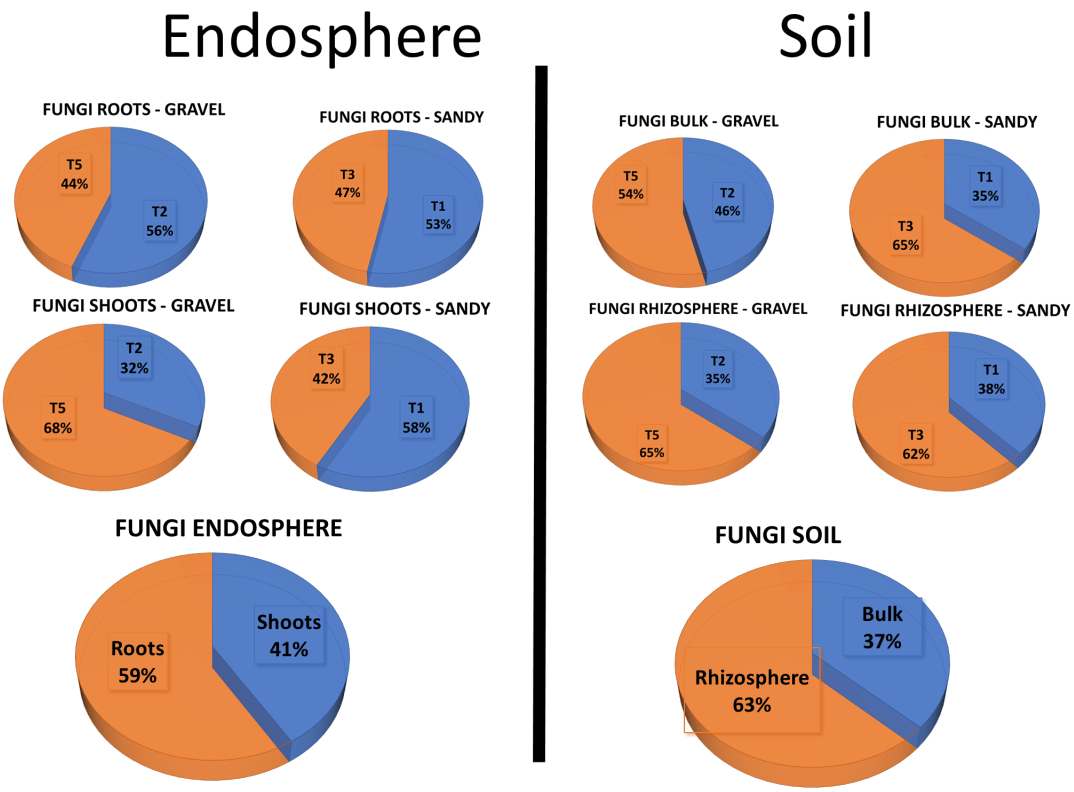

0
0.3
Value
T1P2S1
T1P3S1
T1P3S0
T1P1S1
T3P1S0
T3P3S0
T1P1S0
T2P1S1
T2P2S1
T2P3S1
T2P3S0
T2P2S0
T3P1S1
T3P2S0
T3P3S1
T5P3S1
T5P2S1
T3P2S1
T5P2S0
T5P1S0
T5P1S1
T5P3S0
T1P2S0
T2P1S10
Bacillus
Vicinamibacteraceae
11−24
Blastocatellaceae;Other
Saccharimonadales
Pirellula
uncultured
Domibacillus
SBR1131
AKIW781
Rubrobacter
Pedosphaeraceae
Chthoniobacter
uncultured
Subgroup_7
Longimicrobiaceae
Rhodopirellula
1319−7L14
JG31−KF−CM45
MB−A2−118
uncultured
uncultured

Fig S6: Fungal distribution across soil and endosphere.



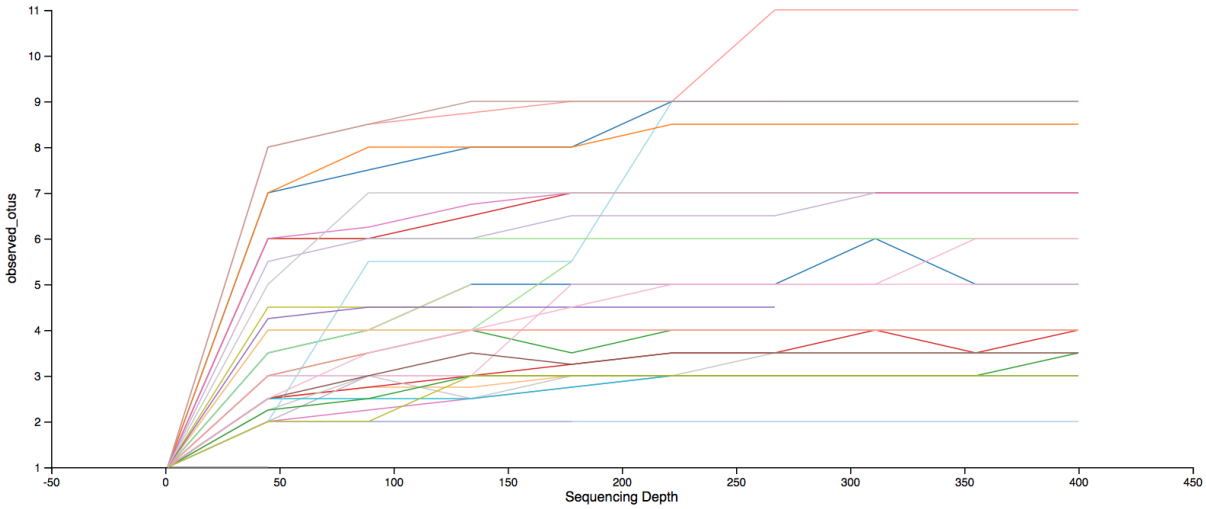
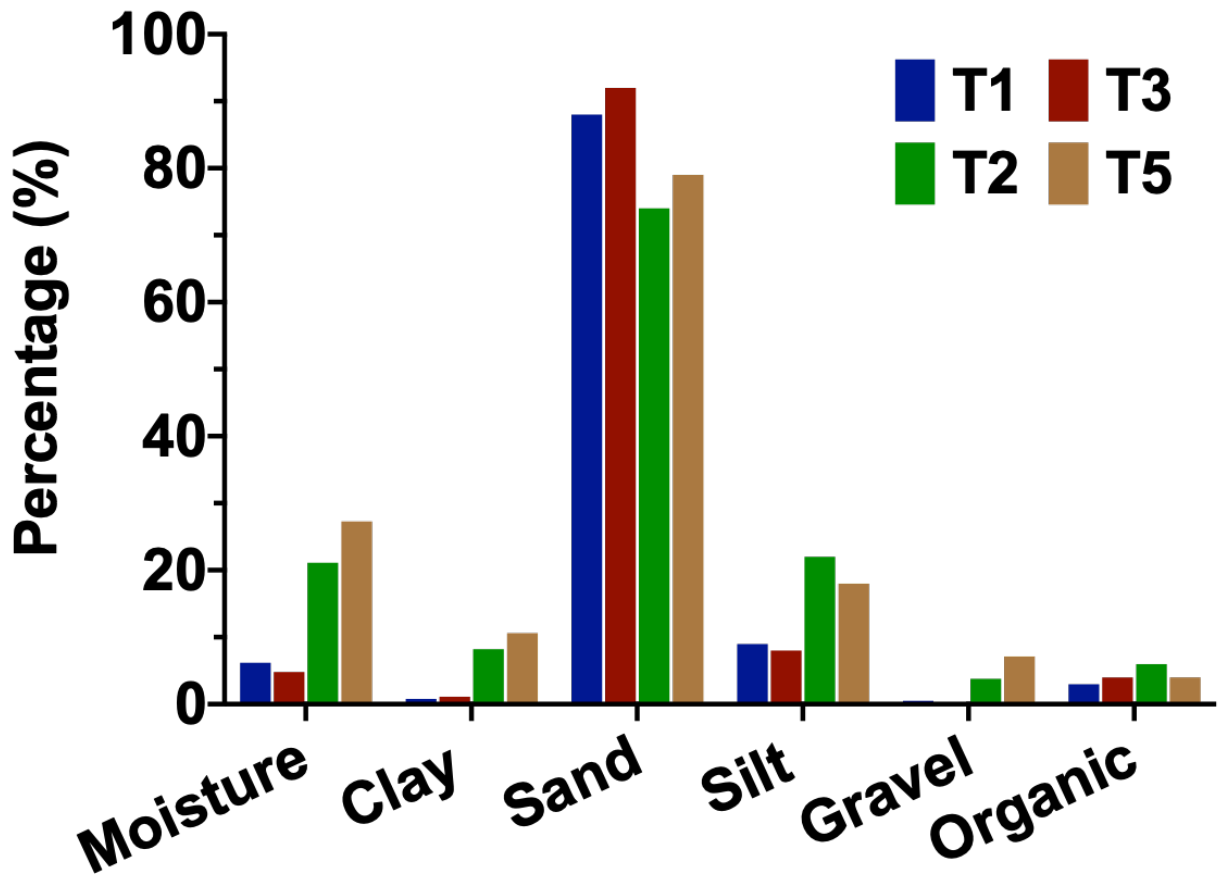


Figure S7: The Rarefaction curve of microbial communities of different samples and sequencing depth to reflect the fungal diversity.



Source of Variation	% of total variation	P value	P value summary	Significant?
Population	95.89	<0.0001	****	Yes
Soil	0.8928	0.2844	ns	No

Figure S8: Soil physical and morphological properties of different populations of *Z. qatarensis*