**Table S4**. Correlation coefficients between the abundance and alpha diversity of microbial community and environmental factors.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil characteristics | Soil molecular microbial biomass | Bacterial 16S rRNA gene copies | Fungal 18S rRNA gene copies | Shannon index of bacterial community | Chao1 index of bacterial community | Inverse Simpson index of bacterial community | Shannon index of fungal community | Chao1 index of fungal community | Inverse Simpson index of fungal community |
| pH | **-0.600\*\*** | -0.108 | -0.320 | 0.099 | -0.378 | 0.153 | -0.029 | **-0.539\*** | 0.065 |
| SOC | **0.649\*\*** | 0.243 | **0.617\*\*** | 0.003 | -0.032 | 0.027 | 0.424 | **0.775\*\*** | 0.314 |
| Total N | **0.512\*** | 0.024 | **0.497\*** | -0.263 | -0.153 | -0.213 | 0.048 | **0.509\*** | 0.138 |
| Available N | -0.225 | -0.349 | -0.053 | -0.201 | **-0.594\*\*** | -0.024 | **0.583\*\*** | 0.109 | 0.377 |
| Total P | -0.252 | 0.147 | -0.201 | -0.400 | **-0.515\*** | -0.303 | 0.063 | -0.111 | -0.098 |
| Available P | 0.126 | 0.092 | 0.136 | -0.192 | 0.148 | -0.261 | 0.038 | 0.305 | 0.008 |
| Total K | -0.401 | -0.404 | -0.287 | -0.078 | **-0.644\*\*** | 0.083 | 0.246 | -0.148 | 0.351 |
| Available K | -0.252 | -0.198 | -0.066 | 0.091 | 0.141 | -0.013 | 0.222 | -0.024 | 0.315 |
| Available Cu | 0.148 | 0.139 | 0.220 | 0.015 | 0.245 | -0.053 | 0.119 | 0.345 | -0.047 |
| Available Pb | **0.459\*** | 0.203 | 0.246 | -0.246 | 0.259 | -0.333 | -0.059 | **0.462\*** | -0.105 |
| Available Cd | 0.241 | 0.325 | 0.199 | -0.270 | 0.015 | -0.287 | 0.067 | 0.305 | -0.067 |
| Available Cr | 0.145 | 0.078 | 0.236 | 0.361 | **0.462\*** | 0.313 | -0.010 | 0.166 | -0.169 |
| Available Ni | 0.248 | 0.360 | 0.146 | **0.465\*** | **0.543\*** | 0.341 | 0.247 | 0.400 | 0.072 |
| Available Zn | **0.514\*** | 0.323 | 0.414 | -0.228 | 0.295 | -0.324 | -0.084 | 0.384 | -0.148 |
| Available As | 0.118 | -0.293 | 0.200 | 0.075 | -0.184 | 0.171 | **0.542\*** | **0.584\*\*** | **0.566\*\*** |

**\*\*** *P* < 0.01; **\*** *P* < 0.05; n=20 (number of samples used to calculate correlation coefficients).